



Researching the Body Electric in Interwar Europe: Psychoanalysis, Dialectical Materialism, and Wilhelm Reich's Bioelectrical Experiments

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*Researching the Body Electric in Interwar Europe:
Psychoanalysis, Dialectical Materialism, and Wilhelm Reich's Bioelectrical Experiments*

A dissertation presented
by
Jennifer van der Grinten
to
The Department of the History of Science

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Dissertation Advisor: Professor Janet Browne
Dissertation Advisor: Professor Anne Harrington

Jennifer van der Grinten

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Abstract

This dissertation presents the background and details of Wilhelm Reich's bioelectrical experiments on sexuality and anxiety that took place following his immigration to Oslo in 1934. The experiments were meant to test Reich's concept of "orgastic potency," which holds that the orgasm is the most fundamental expression of organic life, represents the antithesis of anxiety, and is bioelectrical in nature. Using an oscillograph, Reich measured the psychogalvanic skin response in volunteer test subjects. These experiments mark an important moment in the history of sexual physiology and sexuality more broadly. Since Reich was an adherent of Marxism at the time, they are also a useful case study of dialectical materialist science in the interwar period. Furthermore, they are important to the history of psychoanalysis, and they should be understood as an extension of Reich's work under Freud. By placing the experiments in their proper historical context, the dissertation reveals how sexual science is inextricably embedded in the social, political, and cultural mores of a specific time. I argue that Reich's laboratory persona is best understood as that of a heroic scientist cum independent inventor. His bioelectrical experiments shed light on sexuality and philosophy in interwar European medicine, and their analysis is an important contribution to multiple narratives in the history of science.

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Introduction:
The Orgasm as an Object of Scientific Inquiry

In this dissertation, I present the background and details of Reich's bioelectrical experiments. These experiments began after Reich's immigration to Norway in 1934, during his employment at the University of Oslo and initially with the support of Harald Schjelderup, the country's first professor of psychology. Reich's experiments were an attempt to prove his concept of "orgastic potency," discussed in more detail below and in chapter 1. He used an oscillograph to measure the psychogalvanic skin response of a group of volunteer test subjects, including friends and patients, engaged in benign to more risqué acts of touching, as well as during masturbation and in response to the application of various pleasant and unpleasant stimuli.

The experiments mark an early, but most surely not the first, attempt to capture and quantify sexual energy, considered by many scientists to be typified by the orgasm.¹ Reich's initial vision of sexuality was that of an all-encompassing force, albeit one that could be quantified in physico-chemical terms thanks to colloid chemistry—it governed all organic matter and even the rhythm of the organs and individual cells. Appropriating dialectical materialism, Reich drew parallels between divergent fields of science popular in the late nineteenth and early twentieth century. He made connections between research on the autonomic nervous system, the mechanics of unicellular organisms, and bioelectricity to propose a new theory of sexuality, what he considered to be the vital energy that distinguishes life from the inorganic. He believed that the process of charge → tension → relaxation → discharge characterized the orgasm, and was literally the "orgasm formula."

¹ I would guess that another, perhaps more obscure Russian or German physiologist may claim that prize. As another author notes: "The desire to describe, name, quantify, and, in doing so, understand orgasm is an age-old itch." See Catherine Blackledge, *The Story of V: A Natural History of Female Sexuality* (New Brunswick: Rutgers University Press, 2004), 253.

It is undoubtedly libido that Reich is trying to measure in his experiments, coming in the mid-to-tail end of a relatively short-lived European attempt to measure this Freudian energy in the lab (“libidometry”). For this reason, Reich’s bioelectrical work and the theories that drove it are also important in the history of psychoanalysis, although this point has been obscured in part due to Reich’s break with Freud and the International Psychoanalytic Association in 1934. In searching for the source of sexuality, he felt that it must be electrical in nature, because libido was like electricity: “We do not know what it [libido] is or how it originates. We recognize it only through its manifestations, such as in light and in electrical shock. True, an electrical wave can be measured, but it too is only a characteristic of what we call electricity. Just as electricity is capable of being measured through its manifestations of energy, the instincts are capable of being recognized only through the manifestation of their affects.”² Although conceiving of the orgasm as a form of energetic discharge was not new, Reich was perhaps the first person to ever attempt to prove this experimentally, although Reich ultimately failed to reproduce orgasm in a laboratory setting. Nevertheless, his experiments are a largely forgotten precedent to a larger trend in the study of sex, realized and most popularly exemplified by Kinsey and Masters and Johnson.

Reich’s work was also part of a larger early twentieth century initiative to address the question “what is life?”, although he provided an overtly sexual answer to the question, and therefore it is hardly surprising that many were offended by it (and continue to be so today). For Reich, sexuality was life. It was the force that animated all of living creation. But the existence of such a force could only be discerned through its responses

² Reich, *The Function of the Orgasm Volume 1 of the Discovery of the Orgone*. (New York: Farrar, Straus and Giroux, 1973), 30.

to various stimuli that were thought to be part and parcel of every human's life course: the response to birth, to the nursing and weaning process, to potty-training, to the "primal scene," and to adolescence, and so on. These important events fell under the domain of psychoanalysis. All of these processes touched on certain taboo areas of the body: the mouth and breasts, the urethra and anus, and of course the genitals. However, Freud's therapy was based on the idea that problems occurring at specific stages of development could be resolved through a talk-induced remembering (a "chimney-sweeping" of the mind). Touching was not an essential element of his method. Reich would revise this, believing mental pathology (and eventually physical pathology too) could be cured only through the physical release of orgasm. The body could not be ignored or made subordinate.

Through his clinical work, Reich came to believe that problems in the regulation of sexual energy could be remedied by having the patient initiate masturbation and eventually engage in "healthy" coitus. (Reich's idea of healthy genitality, "orgastic potency," was very rigidly defined.) Eventually, he came to feel that dammed-up sexual energy caused actual physical decline in bodily systems, and in order to restore the body and mind to a non-pathological state, one needed to remove the muscular "armoring" created by restricted sexuality. While in Oslo, he was practicing and propagating the bodily therapy he called "vegetotherapy." The bioelectrical experiments were thus at once meant to prove that libido was bioelectrical in nature, that this bioelectricity governed all life forms and indeed was the defining feature of life, and that his practice of vegetotherapy was the correct means of eliminating pathologies of the bioelectrical flow in the body. This was simply too tall a task, and his lab notebooks suggest his hypotheses

needed more refinement before they could serve as convincing evidence to a highly skeptical scientific community.

The original title of this dissertation was “The Orgasm in Interwar Europe,” and this dissertation truly is a contribution to our understanding of the orgasm and its history through the life of one individual, a man who made a decision to dedicate his life to unraveling its mysteries. However, readers will note that at points the orgasm itself seems to disappear.³ This is a crucial issue in the history of sexology, where the “sexual” ends up taking a backseat to historical analysis. We are focused on the people, the places, and the practices, that allow a theory to come into existence or an experiment to take place, and discussion of the sexual content is left to medical men, to the sexologists and physiologists proper. There is little way around this, as our job as historians is not to evaluate the accuracy of a medical practice but to show how it is contingent on a particular place and time. Ultimately, we must believe that all knowledge is a social construct, and by elucidating the historical context in which such knowledge is constructed, we are making a significant contribution to the history of science. Nevertheless, it must be understood that any account of Reich is also an account of the orgasm; no matter how far in the background the phenomenon may appear, it is also the guiding motivation behind Reich’s every move.

Still, we cannot accept Reich’s theory of orgasm as definitive, nor should we assume that it needs to be correct in order to be meaningful. It is more important to understand what enabled Reich to believe that the orgasm could be a basic function of

³ I provide a brief overview of the history of the orgasm and how it has been approached by English-language historians in appendix 1, reminding the reader not to forget that even when the phenomenon seems distant, orgasm is always lurking in the background.

organic life than it is to evaluate the accuracy of his theory of orgasm. Examining Reich's work provides useful information about the milieu from which it emerged, giving detail and richness to our understanding of how sexuality functioned within early twentieth century medicine. The experiments also serve as an interesting case study of how the relatively new philosophy of dialectical materialism played out in scientific practice. For Reich, his Marxist leanings allowed him to interpret data in very interesting ways: he could make jumps between parallel ideas in material from diverging disciplines—leaps of logic that might have been unavailable to him otherwise. With Reich, we uncover a unique interpretation of the orgasm, one in which it represents the universal pulse of organic life that functions as a unifying explanatory system for all aspects of human health but also as a way to unlock the mysteries of the cosmos.⁴ Reich was a serious philosopher and what we discover in his life is that the orgasm can become an all-encompassing topic of inquiry that guides not only a single or series of experiments but an entire career. Indeed, it was the motivating question that dominated Reich's entire career, and he ultimately paid for this interest with his freedom and his life, dying in a federal penitentiary in Philadelphia in 1957.

The Mysteries of the Orgasm

Orgasm poses a problem to modern science in that it continually eludes definition and capture. Indeed, how are we to come to any true conclusion when we cannot agree

⁴ This is an example of what can be termed “vibratory modernism,” exemplified in the excellent work of Robert Michael Brain and a recent volume *Vibratory Modernism*, ed. Anthony Enns and Shelley Trower (New York: Palgrave MacMillan, 2013). It has also been pointed out that this idea existed in the work of Schelling. See Martin Wallen, “The Electromagnetic Orgasm and History Outside the City,” *City of Health, Fields of Disease: Revolutions in the Poetry, Medicine, and Philosophy of Romanticism*, (Burlington, VT: Ashgate, 2004), 149–172.

what type of orgasm, if any, women experience?⁵ When we do not know if orgasm is limited to humans, or extends to the entire animal kingdom?⁶ In the words of psychoanalyst A.M. Alizade: “The human body negates the laws of biology when it starts an erogenous affective sensorial interchange with another body.”⁷ Or as a recent publication on the *Science of Orgasm* concludes:

As scientists, we are stuck somewhere between faith and science. We have faith that eventually it will be possible to elucidate the scientific basis for conscious experience, but despite consciousness being so tantalizingly with us, it is exasperatingly elusive. We still have not defined the crucial hypothesis that would allow us to test this fifth dimension and its inhabitant, the feeling of orgasm.⁸

Notice in the statement above that the orgasm represents much more than a basic physiological process—it is seen as a special experience, one that holds the key to understanding consciousness and to solving the mind-body equation.⁹ Orgasm somehow goes beyond the laws of biology and beyond simple physiological explanations. Perhaps this very sense of mystery and reverence in which we hold orgasm has impacted our inability to understand the phenomenon.

⁵ See Elisabeth Anne Lloyd, *The Case of the Female Orgasm: Bias in the Science of Evolution* (Cambridge, MA: Harvard University Press, 2005); Joann Ellison Rodgers, *Sex: A Natural History* (New York: Times, 2001), 304.

⁶ Published scientific research contains conflicting views on this subject. It is generally agreed that only higher animals are capable of orgasm, with the phenomenon often being limited to primates. Others propose only humans have orgasm. See Shaunacy Ferro, “FYI: Do Animals Have Orgasms?” *Popular Science*, 26 September 2013. For a good sense of the confusion that surrounds the orgasm, even for human beings, see Barry R. Komisaruk, Beverly Whipple, Sara Nasserzadeh, and Carlos Beyer-Flores, *The Orgasm Answer Guide* (Baltimore: Johns Hopkins University Press, 2010).

⁷ A.M. Alizade, *Feminine Sensuality* (London: Karnac, 1999).

⁸ Barry R. Komisaruk, Carlos Beyer-Flores, and Beverly Whipple, *The Science of Orgasm* (Baltimore: Johns Hopkins University Press, 2006).

⁹ It is interesting to note that colloids were originally spoken of as “the neglected dimension.” See the English translation of Wolfgang Ostwald, *An Introduction to Theoretical and Applied Colloid Chemistry: The World of Neglected Dimensions* (New York: John Wiley and Sons, 1917).

Wilhelm Reich, the subject of this dissertation, devoted his life to understanding the orgasm. Reich began his career as a psychoanalyst and a favorite pupil of Freud. Elizabeth Ann Danto, author of *Freud's Free Clinics: Psychoanalysis and Social Justice, 1918–1938* (2005), has described Reich as “the premier psychoanalyst of the second generation and perhaps its most innovative, if controversial thinker, a sign of his future avant-garde reputation.”¹⁰ His relentless pursuit of the orgasm question led to his eventual expulsion from psychoanalysis and a life of marginalization. He was an interdisciplinary thinker who approached orgasm from sexological, psychoanalytic, political, and physiological perspectives. Reich saw the orgasm as a form of psychological and physical release that brought about feelings of wellness.¹¹ As he pursued the function of the orgasm in the biological realm, he began to envision it as the basic movement of organic life.

Beginning in 1934, following his emigration to Oslo, Reich undertook a series of experiments meant to prove that the orgasm was bioelectrical in nature. With professional assistance, he developed a device to record the electrical conductance of the skin (the psychogalvanic skin response) during arousal. Although his experimental work did not enjoy wide reception when first published, his understanding of orgasm has become a rather standard part of the popular lexicon. Today we speak of sexual charge, of sparks flying, of feeling tingles or being electrified. Scientifically, the phenomenon of orgasm is now explained through hormones, primarily oxytocin (the discipline of endocrinology

¹⁰ Elizabeth Ann Danto, “An Anxious Attachment: Letters from Sigmund Freud to Wilhelm Reich,” *Contemporary Psychoanalysis* 47 (2011): 156.

¹¹ As one observer notes, “Reich’s thought generally celebrates the biological roots of our being and accords priority to those activities that put us in touch with those roots.” R. Bruce Elder, *A Body of Vision: Representations of the Body in Recent Film and Poetry* (Waterloo: Wilfrid Laurier University Press, 1997), 151.

was developing at a rapid pace in the early twentieth century, but it was subject Reich largely ignored, finding it too teleological).¹² By contrast, Reich approached the biochemical basis of orgasm from the perspective of colloid chemistry.

Reich's work is important for many reasons—it represents one of the first attempts to measure orgasm in the lab, it is an example of dialectical materialist science in interwar Europe, it is a key point for understanding his career—but also because orgasm itself is such a significant phenomenon. It remains enshrouded in mystery (in the words of one historian, “the paradoxes and inconsistencies of orgasm make it a phenomenon rival to quantum mechanics in its fickleness”¹³), and yet most of us can agree that it is a fundamental life experience that is uniquely pleasurable. Reich should be understood as one of the major figures in the history of sexuality because he was one of the first to approach orgasm as an object of experimental inquiry.

¹² Reich's disdain for the sort of teleological science he believed was typified by genetics, but also by the biological determinism prevalent in early research on hormones, led him away from potentially fruitful research in endocrinology. He found Steinach interesting, but saw in it a mixture of “vitalistic finalism” and “causal materialism.” See *Function of the Orgasm*, 25. It seems likely that Reich saw in Viennese research on glands and hormones the same sort of fascist elements he saw present in ideas about genetics, heredity, and degeneracy. (See Cheryl A. Logan, *Hormones, Heredity, and Race: A Spectacular Failure in Interwar Vienna* [New Brunswick, NJ: Rutgers University Press, 2013]). Nevertheless, an understanding of how hormones worked could have provided a systems-level explanation of many of the phenomenon Reich observed and attributed to the vegetative nervous system. Rather than focus on bioelectricity running through (or becoming dammed up) in specific plexuses, he could have envisioned something more akin to *The Sex Complex* of W. Blair Bell (1916), in which all of the endocrine system was sexualized and characterized by gendered qualities. See William Blair Bell, *The Sex-complex: A Study of the Relationships of the Internal Secretions to the Female Characteristics and Functions in Health and Disease*, 2nd ed. (New York: W. Wood, 1920). The work of Bell closely follows the new way of conceptualizing sexuality through endocrinology detailed by Nelly Oudshoorn in her fascinating *Beyond the Body: An Archaeology of Sex Hormones* (New York: Routledge, 1994). I cannot help but observe that had Reich chosen to follow the path of endocrinology rather than bioelectricity, his discoveries may have come much closer to our current understanding of the orgasm as put forward in books like Komisaruk's *The Science of Orgasm*. I must also note the humor in the similarity between Orgonon, the research institute Reich built in Rangeley, ME, and Oudshoorn's review of “Organon Laboratories,” one of the first companies to market hormones as pharmaceuticals.

¹³ Jonathan Margolis, *O: The Intimate History of Orgasm* (London: Century, 2004), 2.

Yet only recently has Reich's work on orgasm begun to be taken seriously.¹⁴ Of course, Reich has always been a figure of biographical interest. Although his death preceded the fruition of many of his ideas, Reich remained a popular ideologue for American sexual revolutionaries in the 1960s and beyond. He was also a powerful figure in France, where students rallied behind his work in the protests of May 1968. It comes as no surprise then that the 1970s witnessed the publication of numerous biographies of Reich in both English and French.¹⁵ There were also memoirs of Reich published by his family members.¹⁶ However, it was not until the publication of Myron Sharaf's *Fury on Earth* in 1983 that there was a comprehensive academic treatment of Reich's life and his scientific work in the English language. Sharaf was a psychotherapist and lecturer in psychiatry at Harvard Medical School; he was also a student, patient, and colleague of Reich. His biography of Reich continues to be the most comprehensive and definitive tome on Reich, although it is clear that Sharaf's own personal connections to Reich obscure the story he tells in negative ways.¹⁷

For some time, Sharaf's work stood mostly uncontested. However, in 2003 Robert Corrington published a new take on Reich through Farrar, Straus and Giroux—the press that had committed to republishing Reich's seminal works in English in response to the

¹⁴ Kenneth Mah and Yitzchak M. Binik, "The Nature of Human Orgasm: A Critical Review of Major Trends." *Clinical Psychology Review* 21.6 (2001): 823-856.

¹⁵ Some of the English language publications include: Charles Rycroft, *Wilhelm Reich* (New York: Viking, 1971); Eustace Chessier, *Reich and Sexual Freedom* (London: Vision, 1972); David Boadella, *Wilhelm Reich: The Evolution of His Work* (London: Vision, 1973); and James Wyckoff, *Wilhelm Reich: Life Force Explorer* (Greenwich, CT: Fawcett, 1973). Notably, Rycroft was a member of the British Psychoanalytic Society who eventually resigned.

¹⁶ By his ex-wife, Ilse Ollendorf Reich, *Wilhelm Reich: A Personal Biography* (New York: Avon, 1969); and by Reich's son, Peter Reich, *A Book of Dreams* (New York: Harper and Row, 1973).

¹⁷ See, for example, Paul Roazen's review published in the *Psychoanalytic Review* 72 (1985): 668–671.

book burnings ordered by the Food and Drug Administration in 1956 and 1960. A professor of philosophical theology, Corrington attempted to rehabilitate Reich within the psychoanalytic movement and revise the narrative promulgated by Sharaf, which he described as a “conceptually weak and negative biography.”¹⁸ Corrington’s approach to Reich is both a psychobiography and a work of philosophical anthropology that focuses on psychoanalysis and depth psychology.

Following on the heels of Corrington’s work, Reich has made a re-emergence in popular scholarship. In addition to dozens of articles featuring aspects of Reich’s life and work, there have been two monographs on Reich published in the last decade. The first is a controversial biography of Reich written by the journalist Christopher Turner and published in the U.S. in 2011.¹⁹ Turner’s *Adventures in the Orgasmatron* has evoked widespread disdain from the community of scholars who support Reich’s work and advocate for his scientific ideas to be taken seriously.²⁰ Nevertheless, it was published by Farrar, Straus and Giroux, giving it an air of authority vis-à-vis Reich that it would not have had otherwise. Turner reproduces the narrative of Reich’s insanity and completely misunderstands Reich’s theory of orgasmic potency. Although the work is written in engaging prose and does contain important facts and insights into Reich’s life, providing an especially engaging portrait of the psychoanalytic establishment in interwar Vienna, it does not make use of archival sources. In the end, it must be considered a highly flawed

¹⁸ Robert S. Corrington, *Wilhelm Reich: Psychoanalyst and Radical Naturalist* (New York: Farrar, Straus and Giroux, 2003), xi.

¹⁹ The book was published in England by HarperPress in 2008, and put out in America as *Adventures in the Orgasmatron: How the Sexual Revolution Came to America* (New York: Farrar, Straus and Giroux, 2011).

²⁰ It should be noted that there are also disputes about how Turner gathered his evidence. Being a journalist, his methods for accumulating facts are not palatable to many in the scholarly community.

work that does serious injustice to Reich's legacy as a thinker and a scientist. An excellent counterbalance to this work and the most acceptable piece of academic writing on Reich to date is historian of science James Strick's *Wilhelm Reich: Biologist* published in 2015 through Harvard University Press.

Strick's work is the first English monograph to incorporate sources from the Wilhelm Reich Archives at the Countway Medical Library of Harvard University. The archives were opened to scholars on an application-only basis in November of 2007 after being sealed for fifty years according to the stipulations of Reich's will. The book focuses on Reich's foray into microbiology and his proposal of the existence of "bions," microscopic vesicles produced by the disintegration of organic tissue, which preceded and directly lead to his theory of cancer (to which Strick devotes an entire chapter) and later to his belief in the existence of orgone energy. Although Strick does not deal at any length with orgone energy or any of Reich's American career, he provides the most comprehensive and sophisticated look at Reich's microbiology to date. He places Reich on a clear historical timeline drawing connections to earlier debates on spontaneous generation, discussing Reich's work in the context of the doctrine of microbial pleomorphism ("bacterial cyclogeny" in the 1920s and 30s), and suggesting that bions can be understood using today's language of "protocells" and may share something in common with nanoparticles, prions, and cancer viruses.

This dissertation follows Strick's precedent in that it focuses on Reich's early career prior to his emigration to the United States, but it takes a unique direction focusing on the issue of orgasm and orgasmic potency. Indeed, the interwar period was a time in Reich's life devoted almost exclusively to the orgasm problem described as such. By

focusing on the influence of contemporary Freudian and sexological theory, the impact of dialectical materialism on Reich's work, and the then current beliefs about colloid chemistry, protoplasm, and bioelectricity, I present the background necessary for situating Reich's larger corpus in the history of science and especially the history of sexual science. One cannot understand Reich without knowing his approach to orgasm, and this is something that Strick's work does not deal with.

I also present in detail Reich's earliest laboratory work: the bioelectrical investigations introduced Reich to experimental practice, and as a first attempt at lab science they prove to be messier and at times less sophisticated than Reich's subsequent work on bions. Although Reich's bioelectrical experiments did not garner the same attention as his work on bions, which caused a sort of international controversy centered in Oslo, because some of the same players from the bioelectrical work were involved in the debates over Reich's microbiology, it is useful to understand how their earlier experiences with Reich influenced their opinion of his work as a scientist. I suggest that there was a misconception about Reich's role in the bioelectrical investigations: when considering him as a laboratory scientist he fell short in the eyes of some of his peers, but when we understand him as an independent inventor striving to produce new applications for his orgasm theory, the messiness that is inherent in his early work becomes not only acceptable but a positive trait.

This dissertation is at once a reflection on the uniqueness of interwar European medical philosophy, a history of orgasm, and a biographical portrait of Reich. It is a rather unusual history of the orgasm in that it provides a snapshot of how the phenomenon was interpreted by a specific individual at a certain time, yet I argue that

this is specifically why it is important. Rather than provide a survey of basic issues related to orgasm (e.g., Do females have them? What is the relationship of masturbation to orgasm? Why did orgasms evolve?), I provide an intimate look at how orgasm influenced the entire career of a promising interwar Viennese intellectual, an influence so powerful it ultimately led to what could be called martyrdom.²¹ As far as the biographical element is concerned, this work fills in a number of gaps in the existing canon, not the least because of its use of archival sources to provide a more accurate and complete picture of Reich's thought and work at this time.²²

Outline of the Dissertation

My reason for composing this dissertation is ultimately to sway the reader that Reich is a fundamentally important thinker. Due to the broad sweep of Reich's work, the bioelectrical experiments touch deeply on several issues that merit their own dissertation: the orgasm in psychoanalysis, Marxist science, colloid chemistry, and independent scientific practice and invention in interwar Europe. I do my best to give justice to all these points, but it would take one many years to become a master in just one of these subjects. This is why it is so important that Reich's work be opened up to a larger audience of historians of science in the same way that someone like Ferenczi was rehabilitated in the history of psychoanalysis. Understanding of Reich's amazing life and

²¹ For more on the history of orgasm, including a survey of recent works on the subject, see appendix 1.

²² My approach, providing a lens onto larger historical issues through biography, is similar to the recent work on an earlier sexual pioneer: Ralph M. Leck, *Vita Sexualis: Karl Ulrichs and the Origins of Sexual Science* (Urbana: University of Illinois Press, 2016). See also Diana Wydnham, *Norman Haire and the Study of Sex* (Sydney: Sydney University Press, 2012). My focus on detailing the biological and physiological theories underpinning Reich's work, and the effort to portray Reich within his milieu, is reflective of an older text: Frank J. Sulloway, *Freud, Biologist of the Mind: Beyond the Psychoanalytic Legend* (New York: Basic Books, 1979).

fruitful career calls for highly collaborative research between German, Norwegian, and American scholars. Such research is taking place, but there remains a great sense of guardedness and even divisiveness. It seems that one is still either “for Reich” or against him. It is only when he is fully embraced as a historical figure that we can freely debate how to interpret his life and work without fear of negative repercussion.

In chapter 1, I present Reich as deeply imbedded in a movement to integrate human sexuality within a psycho-biological framework. As unique as Reich is in his persistent, close focus on orgasm, he was developing issues that were already accepted among many sexologists and had been introduced to psychoanalysis by Freud and Ferenczi. Reich was one of many profound theorists in a second generation of younger analysts trained under Freud, and I discuss how his focus on the orgasm was a clear outgrowth of his participation in a larger psychoanalytic community.

The second chapter discusses Reich’s political views. It is interesting to note that Reich believed that orgasm was a key to revolution. He was committed to Marxism for most of the interwar period, although his disagreements with the communist movement eventually led him to develop his own “work democracy” (the subject of a forthcoming book by Philip Bennett).²³ I also make a move to re-examine the ideological background to Reich’s opposition to Freud’s concept of the death drive. In doing so, I am not aligning myself with the critique of Reich published by the analyst Siegfried Bernfeld (and detailed in chapter 2), but rather I am pointing out a fruitful avenue of historical inquiry.

²³ Philipp Bennett, *From Communism to Work Democracy: The Evolution of Wilhelm Reich’s Social and Political Thought* (New York: Verso, forthcoming). Reich would coin the term “work democracy” in 1937, distributing *Die Natürliche Organisation der Arbeit in der Arbeitsdemokratie* (The Natural Organization of Work in Work Democracy) in 1939. See Philipp Bennett, “Wilhelm Reich’s Early Writings on Work Democracy: A Theoretical Basis for Challenging Fascism Then and Now,” *Capitalism Nature Socialism* 21 (2010): 53–73.

The third chapter discusses how Reich's understanding of dialectical materialism influenced his approach to the body. Reich understood the body through the metaphor of the protoplasm and he used colloid chemistry to give his metaphorical body physico-chemical justification. His dialectical materialist approach allowed him to draw fascinating parallels between a variety of disciplines that historians typically associate with the nineteenth century, but that continued to be practiced and valued in the early twentieth century. I discuss the thought experiments and sources that informed Reich's bioelectrical investigations, and present his theoretical approach to the body.

Reich's medical philosophy is incredibly complex, and while easy to fathom as an ideal, it managed to be simultaneously simplistic and overly complex. I can do no more here than to present the background of Reich's ideas and propose my own interpretation of them, because they do not correlate directly to any current physiological theories today but rather resonate with many different holistic approaches to the body and bioelectricity that abound today.²⁴ This chapter provides an important snapshot of interwar European medical philosophy, a uniquely creative moment in the history of science before the triumph of reductionism.

In the fourth chapter, I present the bioelectrical experiments themselves. I discuss Reich as a scientist performing the experiments, and I suggest that he is best understood as an independent inventor rather than as an experimental psychologist or physiologist. When examining his experimental work, we find that they sometimes fall behind the norms for scientific work being rapidly established in the early twentieth century. This is

²⁴ I would suggest that Reich's understanding of the body has at once much in common with something like chakras as it does with accepted endocrinological theories of axes, such as the Hypothalamic Pituitary Gonadal (HPG) axis. As will be discussed in the dissertation, Reich did not enter the burgeoning field of endocrinology, most likely because he associated with eugenics and teleological thinking.

further examined in the conclusion, when I discuss a letter published in a Norwegian newspaper by one of Reich's laboratory assistants. However, just because I don't suggest that we approach Wilhelm Reich as "Physiologist," this does not mean that I view his experimental work in a negative way. Reich's bioelectrical work was truly vanguard, and he should be recognized for his ingenuity in trying to measure arousal by applying the psychogalvanic skin response to mucous membranes.²⁵ Yes, bioelectrical potentials had been measured before, but no one had thought to measure them during sex! Whether or not Reich's experimental procedures met the epistemic norms of the time and place in which it was produced, it was clearly a bold, and I would say brilliant intellectual move to approach orgasm as an object of experimental inquiry.

The conclusion, in addition to discussing Hoffman's critique, also reflects on Reich's personality and genius. Considering the circumstances of his life and the politically fraught state of interwar Europe, Reich is amazing in his devotion to pursuing what he believed to be the truth. Although he comes off as single-minded and even combative at times, we must remember where he was coming from and how Reich viewed himself: as a freedom fighter, above all. I think the term narcissism better captures Reich's character than does schizophrenia.²⁶ There is absolutely no evidence of mental illness that I could uncover in my review of material from this period. The idea

²⁵ In a letter from Wilhelm Hoffman to Rolv Gjessing, 28 May 1936, OI Box 6, Hoffman notes that Reich was unique for attempting to make measurements of bioelectrical potentials during masturbation, kissing, and coitus.

²⁶ I am using the term narcissism here in a positive sense, as described by Heinz Kohut in the 1960s and '70s and understood in articles such as this recent piece, which chapters Reich's character well: Randall S. Petersen and S. Wiley Wakeman, "The Type of Narcissist That Can Make a Good Leader," *Harvard Business Review*, 3 March 2017. For more on Kohut and the positive and negative interpretations of narcissism, see Elizabeth Lunbeck, *The Americanization of Narcissism* (Cambridge, MA: Harvard University Press, 2014).

that Reich went crazy in the early 1930s is simply harmful. Indeed, it has done much to frustrate efforts to incorporate Reich into a larger historical narrative of psychoanalysis, of dialectical materialism, of sexuality, and of medical philosophy in interwar Europe.²⁷

It is more than possible that in the not-too-distant future someone will reveal the precise physiological mechanism or chemical equation for orgasm and change the way we understand sexuality. When that happens, it is likely that a historian will look back at Reich's work and see in it an early formulation of the idea. If such a thing does happen, I believe, more than any other work, it is the *Bioelectrical Investigation of Sexuality and Anxiety* in which Reich's precedence in formulating a scientific theory of the orgasm will be found.

²⁷ The dissertation has three appendixes. The first is a brief history of the orgasm in English-language literature. The second is a translation of an important letter Reich sent to his friends and colleagues shortly before leaving Oslo. It is excerpted in chapter 4 of the dissertation, but is worth reading in its entirety. In appendix 3, interested readers will find the references for Reich's bioelectrical experiments. These were reconstructed by me based on the published bioelectrical experiments. Reich did not footnote his work in a way we might expect of scientists today, however it is possible to reconstruct an accurate list of references based on clues and context from the text.

Chapter 1:
From Genitality to Orgastic Potency

In 1915, while Sigmund Freud was enjoying a fruitful period of collaboration with the Hungarian psychoanalyst Sandor Ferenczi, the Russian army invaded Bukovina and razed the family estate of the young Wilhelm Reich, beginning what he would later refer to as “the four-year state of intellectual death.”¹ The property had been inherited one year prior by the boy, who was orphaned at the tender age of seventeen. Leon Reich, father of Willy and his younger brother Robert, had ostensibly committed suicide by standing in a cold lake for several hours. Although his death was reported as tuberculosis, the hefty insurance policy he had taken out to provide for his two boys was never honored.² Far from being the first tragedy to strike, Reich’s isolated, bucolic childhood was tarnished quite early when, around the age of twelve, his mother took her own life. The incident occurred as a result of the physical abuse she endured after he reported to his father that he had observed her having sexual relations with his tutor. After several failed attempts at committing suicide, she finally succeeded by drinking poison.³

Conscripted into the army shortly after the loss of his family farm, Reich was discharged in 1918. Homeless, he went to Vienna in order to start a new life. Christopher Turner describes the young man who emerged from the war as “intellectually ardent and socially insecure, . . . he was an orphan with a past full of damage, an outsider in search of some kind of home.”⁴ Although he initially sought a degree in law, he gave this up in

¹ Wilhelm Reich, *Passion of Youth: An Autobiography, 1897-1922* (New York: Farrar, Straus, and Giroux, 1988), 86.

² Myron Sharaf, *Fury on Earth: A Biography of Wilhelm Reich* (New York: De Capo Press, 1994), 50.

³ Sharaf, *Fury on Earth*, 44. “. . . his mother drank a cheap household cleanser, something like Lysol, when there were more efficient agents available. . . . If the choice of method was not meant to frighten, it may have been intended to horrify. Cecilia lingered on in great pain for several days.”

⁴ Christopher Turner, *Adventures in the Orgasmatron: How the Sexual Revolution Came to America* (New York: Farrar, Straus and Giroux, 2011), 17.

order to pursue medicine.⁵ It is not surprising that Reich would have made such a choice, as psychology, taught primarily through the medical school, was a booming field in Vienna at this time. Indeed, it was the so-called “Golden Age of Viennese Psychology,” prompted by a turning-inwards and a move towards intellectualization in the aftermath of World War I.⁶

Although Reich was certainly impoverished at this time, he was not alone. His younger brother helped pay his tuition expenses, and Reich was one among many who suffered from the postwar shortages that plagued Vienna. During the colder months both he and Edward Bibring attended their poorly heated anatomy classes at the University of Vienna in their army overcoats, too poor to afford nicer apparel.⁷ Like his fellow students, Reich also immersed himself in the Social Democratic youth movement.⁸

Considering the circumstances of his childhood, it seems hardly surprising that when Otto Fenichel passed around a note during this same anatomy class soliciting participation in a student-run extracurricular seminar on sexuality, politics, and religion,

⁵ A handful of other Viennese psychoanalysts began in law. See, Andrea Bronner, ed., *Vienna Psychoanalytic Society: The First 100 Years* (Vienna: Christian Brandstätter Verlag, 2008).

⁶ Sheldon Gardner and Gwendolyn Stevens, *Red Vienna and the Golden Age of Psychology, 1918-1938* (New York: Praeger, 1992), 59. “The Golden Age of Viennese Psychology began at what was possibly Austria’s most desperate hour. The defeat of the Imperial forces in the First World War deeply affected the older generation . . . The dismemberment of the Habsburg Empire, the severe privation suffered in 1918 and 1919, and the impotence of the government to produce solutions (beyond suppression of dissidence) moreover led to a youthful generation that was not only disillusioned and rebellious, but that turned ‘inward’ for solutions.”

⁷ Sharaf, *Fury on Earth*, 55-56.

⁸ Sharaf, *Fury on Earth*, 54.

Reich was eager to join.⁹ What resulted was a group of twenty students reading works of sexology, initially under sponsorship by the Academic Union of Jewish Physicians.¹⁰

Modern works on sex and psychology would be discussed, they agreed, and they would focus on alternative and nontraditional subjects ranging from scientific findings to sociopolitical texts. Their student-run seminar discussed genital physiology, masturbation, the clitoral-orgasm controversy, and homosexuality, all topics banned from the medical school curriculum. They also discussed psychoanalysis. Fenichel had just unearthed copy of *Freud's Three Essays on the Theory of Sexuality*. . . He shared the book with his friends, and they scrutinized it chapter by chapter in their weekly meetings.¹¹

The content of the seminar would influence Reich's choice of career. As one biographer observes, "for Reich it was Freud's *Three Contributions to the Theory of Sex* and his *Introductory Lectures* that decided his choice of profession."¹² Reich's understanding of orgasm emerged during a particularly heady time in intellectual history, when nearly everyone Reich encountered at school and in his early workplaces is remembered as a highly influential thinker in their respective fields. Having been in intimate contact with so many important players in the history of psychoanalysis (indeed, his first wife, Annie, became a respect analyst in her own right), it is a great tragedy that Reich has been largely excised from the movement.¹³ Reich's thought cannot be understood as separate

⁹ Elizabeth Ann Danto. *Freud's Free Clinics: Psychoanalysis and Social Justice, 1918-1938* (New York: Columbia University Press, 2005), 43.

¹⁰ Harris and Adrian Brock, "Freudian Psychopolitics: The Rivalry of Wilhelm Reich and Otto Fenichel, 1930-1935," *Bulletin of the History of Medicine* 66.4 (1992): 585.

¹¹ Danto, *Freud's Free Clinics*, 45.

¹² James Wyckoff, *Wilhelm Reich: Life Force Explorer* (Greenwich, Conn.: Fawcett, 1973), 27.

¹³ See Gottfried Heuer's criticism of the psychoanalytic establishments "Stalinistic" and "Catholic" methods of exclusion: "Psychoanalysis at the Crossroads," *The International Journal of Psychoanalysis* 83 (2002): 1181-1184.

from psychoanalysis and the history of psychoanalysis is similarly enriched by a deeper understanding of Reich's contributions to the discipline and his interpretation of Freud.

It was not just the content of Freud's publications that interested Reich. He was drawn to the man as both a role model and a mentor. Freud was a charismatic individual and the perfect image of a heroic scientist.¹⁴ One of Reich's favorite stories about Freud involves his interaction with Charcot (which Reich would mimic in his own encounter with Freud): the famous "c'est toujours la chose génitale" moment.¹⁵ As Reich recollects:

In his *History of the Psychoanalytic Movement*, Freud tells about the time he heard Charcot relating to a colleague the case history of a young woman who was suffering from acute symptoms. Her husband was impotent or very clumsy in the sexual act. Seeing that the colleague did not grasp the connection, Charcot suddenly exclaimed with great vivacity, "Mais, dans des cas pareils, c'est toujours la chose génitale, toujours! toujours! toujours!" "I know, Freud writes, "that for a moment I was paralyzed with astonishment, and I said to myself, 'Yes, but if he knows this, why does he never say so?'"¹⁶

To Reich, Freud was not only an intellectual worthy of imitation but also something of a father figure. In his diary entries from medical school and in later autobiographical work Reich would mimic the famous Freudian legends of uniqueness: intellectual isolation, clear and independent vision, and an unwavering commitment to

¹⁴ For more, see Peter D. Kramer, "Development of the Hero," *Freud: Inventor of the Modern Mind* (New York: Harper Collins, 2006), 17-28; Len Oakes, "The Charismatic Intellectual: Sigmund Freud," *The Charismatic Personality* (Sydney: Australian Academic Press, 2010), 51-77.

¹⁵ "At one of Charcot's receptions, he had overheard the great man gossiping to the gynecologist Paul Brouardel about a nervous sufferer whose symptoms her "impotent" or "awkward" husband had precipitated; Brouardel, "astonished," and Freud, "almost paralysed with amazement," listened, as Charcot, hugging himself and jumping up and down with glee, expostulated, "Mais, dans des cas pareils c'est toujours la chose génitale, toujours." The paralyzed Freud wondered why, if Charcot knew that, he never said so." Dianne F. Sadoff, *Sciences of the Flesh: Representing Body and Subject in Psychoanalysis* (Stanford: Stanford University Press, 1998), 58; from chapter 2, "Toujours la chose génitale."

¹⁶ Wilhelm Reich, *The Function of the Orgasm: Volume 1 of the Discovery of the Orgone* (New York: Farrar, Straus and Giroux, 1973), 95. Note, this work should not be confused with the 1926 manuscript, later published in German, *Die Funktion der Orgasmus* discussed later in this chapter.

exposing the truth.¹⁷ He engaged in self-marginalization wherever possible.¹⁸ However, Reich was not initially totally won over by the psychoanalytic obsession with sexuality. Of Fenichel, he remarked, “like all pupils of Freud, he sees latent sexuality in everything and everywhere. Even if it does hold true in the majority of cases, I do not agree with him completely.”¹⁹ This would rapidly change, and Reich would come to remember himself as the most ardent devotee of sexuality, the Giordano Bruno of the sexual world.²⁰

Orgastic Potency

Reich would ultimately come to believe that he had discovered the secret of life, and that it had its origin in the orgasm. Psychoanalysis sparked his interest in the subject, and from 1920–27 Reich developed his own theory of genitality, later christened “orgastic potency.”²¹ The latter concept was defined as “the ability to achieve full resolution of existing sexual need-tension”²² and “*the capacity to surrender to the flow of biological energy, free of any inhibitions; the capacity to discharge completely the dammed-up sexual excitation through involuntary, pleasurable convulsions of the*

¹⁷ Described as the “official” myth of psychoanalysis, it “depicts Freud as a lonely genius, isolated and ostracized by his colleagues, fashioning psychoanalysis single-handedly in a perpetual struggle with the world at large.” Arnold I. Davidson, “How to Do the History of Psychoanalysis: A Reading of Freud’s ‘Three Essays on the Theory of Sexuality,’” *Critical Inquiry* 13.2 (1987): 256.

¹⁸ Jaap Bos, David W. Park, and Petteri Pietikainen, “Strategic Self-Marginalization: The Case of Psychoanalysis,” *Journal of the History of the Behavioral Sciences* 41.3 (2005): 207-224.

¹⁹ Reich, *Passion of Youth*, 80.

²⁰ See: Wilhelm Reich, *The Murder of Christ: The Emotional Plague of Mankind* (New York: Noonday Press, 1953), 104–109.

²¹ Wilhelm Reich, *People in Trouble, Volume Two of the Emotional Plague of Mankind*, trans. Philip Schmitz. (New York: Farrar, Straus, and Giroux, 1976).

²² Wilhelm Reich, *Genitality in the Theory and Therapy of Neurosis* (New York: Farrar, Straus and Giroux, 1980), 18.

body.”²³ Reich quickly became convinced that “those who are psychically ill need but one thing—complete and repeated genital gratification.”²⁴

Psychic health depends upon orgasmic potency, i.e., upon the degree to which one can surrender to and experience the climax of excitation in the natural sex act. It is founded upon the healthy character attitude of the individual’s capacity for love. Psychic illnesses are the result of a disturbance of the natural ability to love. In the case of orgasmic impotence, from which the overwhelming majority of people suffer, damming-up of biological energy occurs and becomes the source of irrational actions.²⁵

Orgasm became the secret to mental health, and Reich’s so-called “hobbyhorse.”²⁶

Orgasmic potency, along with the concept of the genital character, is still employed by psychoanalysts today in reference to mature object-relations,²⁷ genuine heterosexual maturation,²⁸ and “genital primacy”²⁹ or supremacy.³⁰ Although several authors conflate sexual performance or erective capabilities with orgasmic potency,³¹ and others mistakenly attribute the achievement of orgasmic potency to a diminution of “the toxins released by

²³ Reich, *The Function of the Orgasm*, 102. Emphasis original.

²⁴ Reich, *The Function of the Orgasm*, 96.

²⁵ Reich, *The Function of the Orgasm*, 6.

²⁶ In a letter from Freud to Reich, written on July 27th, 1927, Freud refers to Reich’s pursuit of the orgasm theory as “aufzucht von Steckenpferden.” Correspondence Box 2, Folder 5, Wilhelm Reich Archives, Countway Library of Medicine.

²⁷ N. Ross, “The Primacy of Genitality in the Light of Ego Psychology – Introductory Remarks,” *Journal of the American Psychoanalytic Association* 18 (1970): 271.

²⁸ W.J. Barker, “Female Sexuality,” *Journal of the American Psychoanalytic Association* 16 (1968): 142; C.N. Sarlin, “Feminine Identity,” *Journal of the American Psychoanalytic Association* 11 (1963): 809.

²⁹ C.N. Sarlin, “The Current Status of the Concept of Genital Primacy,” *Journal of the American Psychoanalytic Association* 18 (1970): 285-299.

³⁰ S. Novey, “Some Philosophical Speculations about the Concept of the Genital Character,” *International Journal of Psychoanalysis* 36 (1955): 88.

³¹ L. Haas, “Symptom Formation and Character Formation – Contributions to Discussion of Prepublished Papers,” *International Journal of Psychoanalysis* 45 (1964): 161-163; L. Haas, “The Secondary Defensive Struggle Against the Symptom in Sexual Disturbances,” *International Journal of Psychoanalysis* 49 (1968): 402-406.

an imperfect orgasm,”³² in Reich’s publications orgasmic potency simply denotes healthy ego functioning, manifest in the ability to work and love. Reich often emphasized the “health-giving qualities and emotionally stabilizing potentials” of orgasm and downplayed the more primal aspects of sexual gratification.³³

Although orgasmic potency was a concept laden with potential, the single-mindedness with which Reich pursued the idea initiated a process of alienation that would continue for the remainder of his life. Unfortunately, because of the stigma surrounding Reich’s entire career, the issue of the orgasm was largely ignored by analysts after his expulsion from the International Psychoanalytic Association in 1934. A proposal was made in 1949 to rehabilitate Reich’s work on the orgasm by correcting his interpretation of the autonomic nervous system, but it went unheeded.³⁴ More recently, psychoanalysts, including Georges Abraham and A.M. Alizade, have renewed interest in this topic, while mostly ignoring Reich’s original contributions to the subject.³⁵

Sex-Economy

Reich’s concept of orgasmic potency emerged as the lynchpin of a new scientific discipline that he christened sex-economy: “Sex-economy grew in the womb of Freud’s

³² S. Keiser, “On the Psychopathology of Orgasm,” *Psychoanalytic Quarterly* 16 (1947): 319.

³³ J.M. Murray, “Narcissism and the Ego Ideal,” *Journal of the American Psychoanalytic Association* 12 (1964): 501.

³⁴ P.D. Eeman and C. Berg, “Physiology of the Orgasm and of Psychoanalysis,” *International Journal of Sexology* 3 (1949): 92–98.

³⁵ Georges Abraham, “The Psychodynamics of Orgasm,” *International Journal of Psychoanalysis* 83 (2002): 325–338. A.M. Alizade, *Feminine Sensuality* (London: Karnac, 1999). Gottfried Heuer refers to the silence that continues to surround Reich’s work on orgasm as Stalinistic. See his review: “On Georges Abraham ‘The Psychodynamics of Orgasm,’” *International Journal of Psychoanalysis* 83 (2002): 1181–1184.

psychoanalysis between 1919 and 1923. The material separation from this matrix took place around 1928, but it was not until 1934 that it was severed from the International Psychoanalytic Association.”³⁶ Reich would come to see sex-economy as “a unitary natural-scientific theory of sex, on the basis of which it will be possible to resuscitate and fecundate all aspects of human life.”³⁷ As its name suggests, sex-economy relies on an economic model of the drives or instincts, in which psychic disturbances are caused by a damming up of sexual energy. Reich’s interest in placing orgasm within an economic framework may have arisen from his reading of Kraus, although this is difficult to confirm.³⁸ In the first volume of Kraus’s *Klinische Szyziologie*, published in 1919, he discusses orgasm in a section on economics:

The internal control of the metabolism, the centralization of the diet by heart activity, the rationing of the enthalpic and entropic processes of development by the endocrine organs, manifest an economic tendency. Strong excitations, for example the sexual orgasm, or a reflex in an organism poisoned with strychnine, cause polymuscular and polyglandular surges, which shake the entire body in an excess reaction through which the entire energy supply is discharged diffusely.³⁹

³⁶ Reich, *The Function of the Orgasm*, 4.

³⁷ Reich, *The Function of the Orgasm*, 115.

³⁸ Reich reviewed the second volume of Kraus’s *Klinische Szyziologie*, on the “deep person” for the *International Journal of Psychoanalysis*. Wilhelm Reich, “Book Review: Kraus, Prof. Fr.: *Allgemeine und spezielle Pathologie der Person, klinische Syzygiologie, besonderer Teil I: Tiefenperson* (253 S., Verlag Thieme, Leipzig, 1926),” *International Zeitschrift für Psychoanalyse* 13.3 (1927): 338-339 This second volume was only released in 1926, and so it is impossible to know how familiar Reich was with the first volume in the series. However, Reich does note that the second volume details how “in higher organisms the vegetative works in opposition to the animal system through excitation; as an example, the author introduces the function of the sexual (genital) system.” Unfortunately, the second volume of Kraus’s work is only held by a select number of German institutions, and I have not been able to locate a copy in an American university. Interestingly, the National Diet Library of Japan has a copy.

³⁹ Friedrich Kraus, *Die allgemeine und spezielle Pathologie der Person: Klinische Szyziologie* (Liepzig: G. Thieme, 1919), 302.

Nevertheless, it is clear that Reich considered his contribution to be unique. According to Reich: “By amplifying the concept of genital function with the concept of orgasmic potency and defining it in terms of energy, I added a new dimension to the psychoanalytic theory of sexuality and libido.”⁴⁰

Reich began to develop his own schematic understanding of how drives operate beginning in 1923. Vladimir Safatle described the Freudian theory of drives as “internal sources of excitement that the organism cannot escape.”⁴¹ Freud developed a model of drives that emphasized the pleasure of discharge. To summarize the complicated concept of Freudian drives from Jacob Arlow’s article dealing exclusively with the subject:

physiological changes induced by the end results of the metabolic processes in the tissues are experienced psychologically as the drive tensions. In contrast to the external stimuli which excite activity of the central nervous system leading to mastery of tension by withdrawal of the organism from the source of stimulation, no flight is possible from the demands of the drives whose tension arises within the organism itself. The accumulation of drive energy results in tension which is subjectively experienced as pain or unpleasure. Discharge of tension, on the other hand, leads to the experience of pleasure. . . . The ultimate aim of each drive is to abolish the condition of stimulation, and the object represents the final element upon which the drive tension is discharged.⁴²

⁴⁰ Reich, *The Function of the Orgasm*, 110–11.

⁴¹ Vladimir Safatle, “Death, Libido, and Negative Ontology in the Theory of Drives,” in *Sexuality and Psychoanalysis*, ed. Jens De Vleminck and Eran Dorfman (Leuven: Leuven University Press, 2010), 63. The term *Trieb* is translated as “drives” in English, and sometimes as “instinct.” Freud would use both terms, often interchangeably. See Stefanie Teitelbaum, “Drives,” *Encyclopedia of Psychology and Religion*, ed. David A. Leeming, Kathryn Madden, and Stanton Marlan (New York: Springer, 2010), 258–59.

⁴² Jacob A. Arlow, “The Theory of Drives,” *Readings in Psychoanalytic Psychology*, ed. Morton Levitt (New York: Appleton Century Crofts, 1959), 203. This has been reiterated, more recently, by Nimi Bassiri: “Freud defined reflex action as a tendency towards a state of inertia . . . formulated as the principle of *neuronal* inertia or the tendency of the nervous system—and thus the psyche—to discharge excessive buildups of excitation and, conversely, to avoid the accumulation of excessive excitation. For Freud, the nervous system automatically tended towards a state of equilibrium, and any internally accumulated excitation was reflexively met with an external discharge of some sort. Psychically, the discharge of excitation corresponded to a feeling of pleasure; the accumulation corresponded to an experience of displeasure.” In “Freud and the Matter of the Brain: On the Rearrangements of Neuropsychanalysis,”

Sexuality was one of many drives, including hunger and breathing, but it became the key drive, because it was capable of dispersal through ejaculation, and, for Reich, through orgasm.⁴³ Reich's understanding of orgasm was far more nuanced than Freud's. As commentators on psychoanalysis have noted, Freud had relatively little to say about orgasm: "While Freud wrote extensively about genital sexuality, there are only 20 occurrences of the word 'orgasm' and only one reference to a woman's capacity for multiple orgasms."⁴⁴ Reich posited orgasm as the primary mechanism of libidinal discharge for both sexes. In striving to maintain psychic and physiological equilibrium, it was orgasm that allowed for the dispersal of sensory energy: "In pleasure sensations, a self-generating and simultaneously self-nullifying force—sexual pleasure—desires itself and is extinguished when its desire ceases, namely, when satisfaction has been taken place."⁴⁵ Reich concluded that unpleasure and tension can only exist and accumulate when sexual pleasure, in the form of genital gratification, is denied. Orgasm was the ultimate regulator of this energy, and as such, orgastic potency became the criterion of mental health.

Critical Inquiry 40 (2013): 91. Her employment of the concept of reflexes helps us understand why Reich would come to believe in the existence of an "orgasm reflex," as discussed later in the dissertation.

⁴³ For Freud, "libido is an energy that accumulates to produce a tension . . ." and discharge is, physically speaking, semen. See Muriel Dimen, "Psychoanalysis and Sexuality," *The Routledge Handbook of Psychoanalysis in the Social Sciences and Humanities*, ed. Anthony Elliot and Jeffrey Prager (New York: Routledge, 2016), 399.

⁴⁴ S. Guttman, et al., *The Concordance to the Standard Edition of the Complete Psychological Works of Sigmund Freud* (New York: International Universities Press, 1984). Cited in, Edward Erwin, *The Freud Encyclopedia: Theory, Therapy, and Culture* (New York: Routledge, 200), 588.

⁴⁵ Wilhelm Reich, "Concerning the Energy of Drives," *Early Writings, Volume One*, 150. Originally published in, *Zeitschrift für Sexualwissenschaft* 10 (1923).

Despite Reich's insistence that sex-economy represented its own, unique natural-scientific discipline, it developed from a larger body of sexological and psychoanalytic research. In the following sections, I discuss the milieu from which Reich's theories about the orgasm emerged in order to emphasize their embeddedness in a specific mode of thought prevalent in the late nineteenth and early twentieth centuries. I begin by surveying Freud, Albert Moll, and Havelock Ellis's contributions to an understanding of the sexual impulse and its normal and pathological expressions.⁴⁶ After surveying the sexological and psychoanalytic approaches to libido, I discuss Freud's theory of infantile sexuality and its reliance on phylogenetic explanations. This is an area of implicit disagreement between Reich and Freud. However, while Reich favored an explanation of orgasm that more closely resembled the anatomo-physiological explanations proffered by the sexologists, he never abandoned Freud's theory of psychosexual development, even as his "ideas gradually diverged from Freudian psychoanalysis," becoming, in the words of Stephen Frosh, "more biological in focus and less interested in the fantasy dimensions of psychic life."⁴⁷

This is followed by a survey of Freud's "Phylogenetic Fantasy," drafted with Ferenczi during World War I. I link the ideas presented in this piece to Ferenczi's work on genitality, which culminated in the publication of his book *Thalassa* in 1924. Contrary to popular belief, it was not Reich but Ferenczi who was the first analyst to make a serious attempt to incorporate orgasm into psychoanalytic theory, but Ferenczi favored

⁴⁶ I include a discussion of the two sexologists, because Reich's understanding of orgasm shares many commonalities. Without acknowledging it, Reich endorses Moll's concept of contraction [*Kontraktionstrieb*] as a way to attach psychoanalytic concepts to the physiological process of orgasm, and Ellis's process tumescence and detumescence could even be read as a logical predecessor of Reich's "orgasm formula."

⁴⁷ Stephen Frosh, "Facing Political Truths," *Psychotherapy and Politics International* 5.1 (2007): 31.

rather fanciful phylogenetic explanations of the phenomenon that ultimately garnered little attention. Ferenczi's precedence in attempting to formulate a psychoanalytic theory of orgasm has gone largely unrecognized, as has his impact on Reich's work, although one historian has suggested that Ferenczi's bioanalysis inspired Reich's foray into physiology.⁴⁸ I will discuss how Reich's theory of orgasmic potency grew in conjunction with Ferenczi's genitality and how it differed in its disregard for phylogenetic explanations.⁴⁹

As early as 1915, Ferenczi had expressed a strong interest in developing a metapsychological theory of genitality, which necessitated the development of a psychoanalytic understanding of orgasm. Ferenczi saw orgasm in two ways: 1) orgasm was the discharge of tension stored in the germ plasm; 2) orgasm, with its temporary loss of conscious (an important point for all psychoanalysts and sexologists at this time) and other physiological changes represents the period when a baby exits the mother's womb and must learn to breathe air. The latter, in turn, could be traced back to a specific time period in the phylogenetic history of man evolved from fish: when fish left the oceans and became amphibious.

Reich would implicitly endorse and develop upon Ferenczi's first point, but he did away altogether with phylogenetic fantasizing. In Reich's own words: "I came to

⁴⁸ See Harvard Friss Nilsen, "Resistance in Therapy and War: Psychoanalysis Before and During the Nazi Occupation of Norway, 1933-45," *International Journal of Psychoanalysis* 94 (2013): 725-746. This is a rather unusual claim to make, considering that Reich would reject Ferenczi's work.

⁴⁹ There are many similarities between Ferenczi and Reich, which remain to be explored, despite the relatively recent boom of interest in Ferenczi's work, and the growing revival of interest in Reich's work. Both are also notable psychoanalytic "renegades": "the two most prominent and ultimately most reviled apostates were Sandor Ferenczi and Wilhelm Reich." See: William F. Cornell, "Stanger to Desire: Entering the Erotic Field," *Studies in Gender and Sexuality* 10 (2): 79.

Freud from sexology.”⁵⁰ Indeed, when we reflect on the work of the sexologists Albert Moll and Havelock Ellis, we find that Reich’s understanding of the orgasm is much closer to theirs than to those of psychoanalysis. (Although both men incorporated phylogenetic concepts into their own work, they did not relate it to the orgasm or attempt to integrate it into a larger metatheory.) However, it is important to note that Reich adopted many classical Freudian concepts and continued to believe in them throughout the rest of his career. He was most strongly influenced by the Freudian theory of libido and its development as well as the psychoanalytic theory of psychosexual development. He frequently praised Freud for his elaboration of infantile sexuality. However, Reich eventually moved beyond his implicit rejection of Freud’s and Ferenczi’s phylogenetic reasoning and became an outspoken critic of the existence of partial drives and the possibility of non-neurotic pregenital drives—both of these concepts were integral to Ferenczi’s work. Reich also, for the most part, discarded the theory of recapitulation employed by Freud as an explanation for the meaning of orgasm. He did away with metaphor and sees the orgasm as a physiological event of the utmost importance for overall well-being.

The Sexual Impulse

At the fin-de-siècle, Cotti notes that “a scientific debate focused on the notion of drive was raging in Austria and Germany.”⁵¹ Albert Moll was a major player in this debate, and he defined drives as akin to reflexes. They were instinctual in nature and

⁵⁰ Reich, *The Function of the Orgasm*, 88. This is not to say that the sexologists did not employ phylogeny, but they did so in very different ways from the metapsychology of Freud or the bioanalysis of Ferenczi.

⁵¹ Patricia Cotti, “Freud and the Sexual Drive Before 1905: From Hesitation to Adoption,” *History of the Human Sciences* 21.3 (2008), 27.

everyone displayed them in the same manner. His work *Untersuchungen über die Libido Sexualis* (1897) influenced Freud as he was working out his own theory of the drives, which Cotti says he eventually “defined . . . as the expression of sexual constitution.”⁵² Freud was one of Moll’s greatest academic rivals, and he preceded Freud in delineating many important ideas.⁵³ As historian of sexuality Harry Oosterhuis notes: “In his book on the *libido sexualis* . . . Moll elaborated the most comprehensive and sophisticated theory on sexuality before Freud . . . and Havelock Ellis.”⁵⁴ For Moll, “the (male) sexual drive was conceptualised as a powerful physiological force that builds up from inside the body until it is released in orgasm.”⁵⁵ He divided sexuality into two drives, one for detumescence or sexual discharge, and the other was the contrectation drive. The latter evolved later than the drive for detumescence, and it was aimed at achieving sensual connection with a partner through touch and foreplay. Lawrence Birken elaborates:

Moll . . . divided human desire into two “component instincts”: the primeval instinct to discharge, which he called “detumescence,” and the more recently evolved instinct to seek out another individual, which he called “contrectation.” The first instinct was fundamentally individualist,

⁵² Cotti, “Freud and the Sexual Drive,” 40. Recent research suggests that Moll rose to prominence thanks to his work on hypnosis, but when Freud’s non-hypnotic therapy began to overshadow hypnosis Moll fell into the background. See Andreas-Holge Maehle, “The Power of Suggestion: Albert Moll and the Debate on Hypnosis,” *History of Psychiatry* 25 (2014): 3–19. For more on the emergence of psychoanalysis from the milieu of hypnotic therapies, see Andreas Mayer, *Sites of the Unconscious: Hypnosis and the Emergence of the Psychoanalytic Setting* (Chicago: University of Chicago Press, 2013).

⁵³ Lutz D.H. Sauerteig, “Loss of Innocence: Albert Moll, Sigmund Freud, and the Invention of Childhood Sexuality,” *Medical History* 56.2 (2012): 156–183; Volkmar Sigusch, “The Sexologist Albert Moll – Between Sigmund Freud and Magnus Hirschfeld,” *Medical History* 56.2 (2012): 184–200. See also Sander Gilman, “Stand up Straight!” *A History of Posture* (London: Reaktion, forthcoming). Gilman presents an interesting instance where Freud confides in Fleiss that Moll has preceded him in an important idea about the role of olfaction, but he will not concede priority. See: Jeffrey Moussaieff Masson, ed., *The Complete Letters of Sigmund Freud to Wilhelm Fliess, 1887–1904* (Cambridge, MA: Belknap, 1985), 278; cited in Gilman.

⁵⁴ Harry Oosterhuis, “Sexual Modernity in the Works of Richard von Krafft-Ebing and Albert Moll,” *Medical History* 56.2 (2012): 136.

⁵⁵ Oosterhuis, “Sexual Modernity,” 141.

the second social. Moll theorized that primeval organisms that reproduce asexually by fission or budding possess only the instinct of detumescence, but the later organisms that reproduce by conjugation or sex have acquired the instinct of contractation as well.⁵⁶

Havelock Ellis, another major contributor to the debate on sexual energy, continued Moll's work and further developed his schema.⁵⁷ For Ellis, sexuality was an anatomophysical process that fell outside of mental control, but nevertheless had profound psychological implications. Ellis understood the sexual impulse as divided into "tumescence, during which force is generated in the organism, and . . . detumescence, in which that force is discharged during conjugation."⁵⁸ He rejected Moll's concept of contractation, specific interest in an external love object, seeing it as being unnecessary for the sexual act: "Tumescence and detumescence are alike fundamental, primitive, and essential; in resting the sexual impulse on these necessarily connected processes we are basing ourselves on the solid bedrock of nature." Tumescence is described as a slow, willful process during which "sexual selection is decided, the crystallizations of love elaborated, and, to a large extent, the individual erotic symbols determined."⁵⁹ The second stage is marked by motor discharge, "followed by deep organic relief."⁶⁰ Despite

⁵⁶ Lawrence Birken, *Consuming Desire: Sexual Science and the Emergence of a Culture of Abundance, 1871-1914* (Ithaca: Cornell University Press, 1988), 61.

⁵⁷ As one historian notes, the sexologists "were virtually without exception men. . . . sexology was [also] decidedly self-referential" with the prominent authors constantly quoting each other, often without proper citation, as those involved in the debate were familiar with the origins of certain arguments. See Edward Ross Dickinson, *Sex, Freedom, and Power in Imperial Germany, 1880-1914* (New York: Cambridge University Press, 2014), 146, 247.

⁵⁸ Havelock Ellis, *Erotic Symbolism: The Mechanism of Detumescence, The Psychic State in Pregnancy* (Philadelphia: F.A. Davis, 1906), 115.

⁵⁹ Ellis, *Erotic Symbolism*, 115.

⁶⁰ Havelock Ellis, *Analysis of the Sexual Impulse: Love and Pain, The Sexual Impulse in Women* (Philadelphia: F.A. Davis, 1903), 65.

their obvious mechanical dissimilarities, the two events are described as “so intimately connected as to form two distinct stages in the same process.”⁶¹

Evidence for the existence of tumescence came from biology. The animal kingdom was Ellis’s primary source of information, but he also looked to the egg and the sperm. For Ellis, what happened in the germ cells during fertilization was analogous to what happened to the sexual energy of humans during procreation.⁶² For example, citing the work of German biologist Thomas Bovary, Ellis describes how the role of the spermatozoa of the male “removes an inhibitory influence” from the female ovum during conjugation.⁶³ This biological “evidence” stands as proof that during human copulation, it is the role of the more easily aroused male to overcome the inhibitions of the modest female in order to allow for her to experience orgasm. (This type of thinking would be picked up and developed by Ferenczi in his work on genitality and also by Reich in his orgasm formula, which he saw as analogous to cell division.)⁶⁴

Paul Robinson, who has written extensively on Ellis, notes that *Studies in the Psychology of Sex* is “really an attempt to analyze what is commonly called the sexual instinct.”⁶⁵ Instinct is described as a four-step process, similar to a reflex arc, that originates with (1) an internal message or “impulse;” (2) external stimuli; (3) active

⁶¹ Ellis, *Analysis of the Sexual Impulse*, 65.

⁶² For more on the interpretation of male and female roles based on observations of sperm and unicellular organisms, see Roy Porter and Lesley Hall, *The Facts of Life: The Creation of Sexual Knowledge in Britain, 1650–1950* (New Haven: Yale University Press, 1995), chapter 7, “From the Primeval Protozoa to the Laboratory: The Evolution of Sexual Science from 1889 to the 1930s.”

⁶³ Ellis, *Erotic Symbolism*, 117.

⁶⁴ Emily Martin has written a classic piece about the continued application of gender roles to the cells of the body. See: Emily Martin, “The Egg and the Sperm: How Science Has Constructed a Romance Based on Stereotypical Male-Female Roles,” *Signs* 16.3 (1991): 485-501.

⁶⁵ Robinson, *The Modernization of Sex*, 2.

discharge response; and (4) central nervous system activation from the organs involved in the behavior. Climax was the most important physiological phenomenon for Ellis, and it was the key to unlocking the mysteries of sexuality. Ejaculation was described as a reaction of the spinal cord. In other words, we have communication between the organism and the outside world as signals from the core come into contact with stimuli and triggering discharge from various organs. The central nervous system is affected by the changes at the level of the organ, causing conscious change. This model closely resembles the one Reich would adopt as his own, except Reich would focus on the autonomic nervous system, ignoring the role of the central nervous system almost entirely. Like Reich, Ellis saw orgasm as a fundamental expression of libido or instinct. Birken notes: “He associated the development of sexual reproduction with the evolution of an immense accumulation of charge, and thus correspondingly powerful discharges during orgasm.”⁶⁶ Robinson elaborates, noting that the “energy accumulated and released in sexual arousal was for Ellis a fundamental human substance, generated, he surmised, through internal chemical processes.”⁶⁷

Both Moll and Ellis’s work were almost entirely overshadowed by Freud, who has become the true heir of the libido. (Moll’s *Libido Sexualis* was translated into English, but apparently did not gain a wide readership.⁶⁸) As Robinson aptly notes, “most of the pioneer [sexual] modernists are now largely forgotten . . . The only survivor of the revolution would appear to be Sigmund Freud, whom we now think of as the

⁶⁶ Birken, *Consuming Desire*, 62.

⁶⁷ Robinson, *The Modernization of Sex*, 16.

⁶⁸ Remarkably, Harvard possesses no copy of the work: *Libido sexualis: Studies in the Psychosexual Laws of Love Verified by Clinical Sexual Case Histories*, trans. David Berger (New York: American Ethnological Press, 1933).

virtual author of sexual modernism.”⁶⁹ Perhaps this is in some ways appropriate because Freud represented more than just sexology, he introduced a radical new way of thinking about illness. According to one biographer: “By defining hysteria as an illness whose symptoms were produced by a person’s unconscious ideas, Freud started what could be called a ‘Copernican Revolution’ in the understanding of mental illness—which put him into opposition both to the Parisian Charcot and to the German and Austrian scientific community.”⁷⁰ This included derision from Julius Wagner-Jauregg, at least according to Reich, who had an internship under the esteemed doctor.⁷¹ Much as today, Freud was seen by many as simply a man who saw in sexuality an explanatory device for nearly all human behavior. Moll mentions Freud briefly when discussing the occasionally arousing nature of anxiety: “In my own view, however, Freud’s generalisation is too comprehensive; inasmuch as he symbolises all things in accordance with his own peculiar preconceptions, the concept of the sexual receives, in his hands, an undue extension.”⁷² His statement echoes Reich’s earlier sentiment about psychoanalysis. We can also take a moment to reflect here on the extremity of Reich’s views on sexuality. Understanding how critically Freud was received for making sweeping claims about the role of sex in the mental life of human beings, it should come as no surprise that Reich, who took the

⁶⁹ Robinson, *The Modernization of Sex*, 2. No stranger to psychoanalysis, Robinson wrote his dissertation on “The Freudian Left;” it featured Wilhelm Reich. *The Freudian Left: Wilhelm Reich, Geza Roheim, Herbert Marcuse*, Ph.D. diss., (Harvard University, 1968). It was published in monograph form a year later by Harper and Row.

⁷⁰ José Brunner, *Freud and the Politics of Psychoanalysis* (Cambridge, MA: Blackwell, 1995), 32.

⁷¹ A certificate confirming Reich’s work in Jauregg’s psychiatric and neurological clinic attests: “Dr. Wilhelm Reich worked from October 23rd, 1922 up to date at the Clinic as attending physician. He was occupied as well in the psychiatric as in the neurological wards, and has acquired a thorough knowledge in the field of Psychiatry and Neurology. November 3rd, 1924. (signed) Wagner-Jauregg.” Wilhelm Reich Archives, Personal Box 1, Folder 4.

⁷² Moll, *The Sexual Life of the Child*, 93.

role of sexuality to a place Freud was unwilling to go, would have been considered rather bizarre and perhaps unseemly in his obsession with orgasm.

Although Freud certainly differed from the sexologists in his approach and emphasis on sexuality, Robinson points out that Ellis's "conception of the sexual process bears a striking resemblance to Freud's libido theory. . . . It could assume apparently nonsexual guises (as in sublimation), and it could combine with, or itself be reinforced by, other forms of human energy."⁷³ Like Moll, Ellis was quite bitter about what he considered to be Freud's appropriation of his own scientific discoveries.⁷⁴ Both men must surely have been incensed by how little credit they were given in Freud's published work: in the second edition of Freud's *Three Essays*, published in 1910, Freud simply noted about libido that, "I have been able to spare myself the necessity of giving detailed references."⁷⁵ He essentially shrugged off any commitment to other scholars in the field who had laid claim to similar ideas, something he did likely did with full awareness, as when he detailed his refusal to give priority to Moll for his ideas on the suppression of smell in a letter to Wilhelm Fleiss in 1897.⁷⁶

There are, of course, crucial differences that make Freud's libido unique. For example, Steven Seideman remarks: "Whereas the sexologists defined the sexual instinct

⁷³ Paul Robinson. *The Modernization of Sex: Havelock Ellis, Alfred Kinsey, William Masters and Virginia Johnson*, 2nd ed. (Ithaca: Cornell University Press, 1989), 15.

⁷⁴ Robinson, *The Modernization of Sex*, 39.

⁷⁵ Sigmund Freud, "Three Essays on Sexuality," vol. 7 of *The Standard Edition of the Complete Works of Sigmund Freud*, ed. James Strachey (London: Hogarth Press, 1953), 134. This is followed by a footnote, in which Freud cites Krafft-Ebing, Moll, Moebius, Havelock Ellis, Schrenck-Notzing, Loewenfeld, Eulenburg, Bloch and Hirschfeld.

⁷⁶ See chapter 7 of Sander Gilman, "*Stand up Straight!*" *A History of Posture* (London: Reaktion, forthcoming).

as reproductive . . . Freud argued that the sexual instinct is oriented to pleasure.”⁷⁷

Furthermore, Siegfried Zepf notes, “according to Freud, libido theory refers neither solely to a psychical nor merely a somatic quality, but rather to the manifestation of a somatic quantity in the psychic field.”⁷⁸ When endogenous tension reaches a certain point, it is manifested psychically, and becomes associated with certain groups of ideas. As it supplies the psychic apparatus with energy, it seeks discharge. In the case of sexual excitation, it supplies sexual ideas with energy and brings about an urge to discharge somatic tension through a specific action. In normal sexuality, this would be through procreative expression. In abnormal sexuality, libido could take hold of sexual ideas directed towards more perverse aims.

Regardless, when the somatic excitation is not removed through a specific action it is deflected inwards and can manifest as anxiety, which increases upon the accumulation of further tension. Freud imagined two forms of deflection, one in which sexual abstinence results in a physical congestion of energy that excites the body as anxiety, but does not enter the psychic arena. On the other hand, in disorders like hysteria, the somatic energy is converted into bodily symptoms by means of psychological processes—the sexual energy is registered by the psyche but it produces mental strife and is therefore deflected to other organ systems and thereby robbed of its sexual connotations.

Libido was, initially, simply somatic energy and not necessarily sexual in nature. Sexuality was one of many drives, but it quickly became the key drive, and by 1914

⁷⁷ Steven Seideman, *The Social Construction of Sexuality*, 3rd ed. (New York: W.W. Norton, 2015), 7.

⁷⁸ Siegfried Zepf, “Libido and Psychic Energy—Freud’s Concepts Reconsidered,” *International Forum of Psychoanalysis* 19.1 (2010): 5.

Freud began stating that the sexual instinct is called libido and that libido is sexual energy or desire.⁷⁹ Psychoanalysis sought to understand the functioning of libido within the psyche, and to find an economic explanation for perverse instincts. As an analyst, Freud was focused on pathology. As the famous psychologist and sexologist John Money notes: “His self-appointed task was to formulate an exclusively endopsychic explanation of perversion . . . not in terms of sexual practices only but also in imagery and ideation, conscious and unconscious.”⁸⁰ Freud was firm in his belief that sexual aberrations are not the result of insanity or hereditary taint: “One would be glad on aesthetic grounds to be able to ascribe these and other severe aberrations of the sexual instinct to insanity; but that cannot be done. Experience shows that disturbances of the sexual instinct among the insane do not differ from those that occur among the healthy.”⁸¹ He quickly qualifies this statement, however, by asserting: “In my experience anyone who is in any way, whether socially or ethically, abnormal mentally is invariably abnormal also in his sexual life.”⁸² The sexual aberrations thus occupy a space between total insanity and complete health. They are common to man, but they are also a sure indicator of some sort of sub-optimal functioning. This belief would become the cornerstone of Reich’s own conviction that mental abnormality has its origin in a disturbance of orgasm.

⁷⁹ Zepf, “Libido and Psychic Energy,” 6.

⁸⁰ John Money, “History, Causality, and Sexology,” *Journal of Sex Research* 40.3 (2003): 238.

⁸¹ Freud, “Three Essays,” 147.

⁸² Freud, “Three Essays,” 148.

Reich's Relationship to Freud and the Sexologists

Reich saw Freud as a great and isolated pioneer. He frequently praised his mentor for his penetrating ingenuity; Freud's ability to recognize sexuality as something inherent from birth was deemed particularly remarkable. In his published works, Reich would often claim that Freud was the first person to propose the idea of infantile sexuality. Prior to Freud, Reich claimed, sexuality was understood as something that simply erupted spontaneously during puberty. Strick describes how in 1919, Reich stated that he had "conducted a survey of the sexology literature . . . [and found, w]ith the sole exception of Freud, all the researchers he surveyed (Forel, Block, Moll, and Jung), . . . 'believed that sexuality was something that at the time of puberty descended on a human being out of a clear sky.'"⁸³ In retrospect, it is difficult to understand how Reich could have arrived at these conclusions if he had really undertaken such a survey. After all, Moll was an advocate of childhood sexuality, and Ellis, who Reich cites within his paper, believed that even infants experienced orgasm. Indeed, sexologists took it largely for granted that the sexual impulse was something that existed in toto.⁸⁴

The survey was published as "Drive and Libido Concepts from Forel to Jung."⁸⁵ Despite its supposed thoroughness, in the essay, Reich quickly dismissed Forel's work as inapplicable to human sexuality, and he mentions Ellis in just one sentence and provides no references as to which works he has read. Most of his focus is devoted to Moll, but it is difficult to see how he interpreted Moll as asserting that sexuality "descended out of

⁸³ Quoted in, James Strick, *Wilhelm Reich: Biologist* (Cambridge, MA.: Harvard University Press, 2015).

⁸⁴ For more on this subject, see , Lutz D.H. Sauerteig, "Loss of Innocence: Albert Moll, Sigmund Freud, and the Invention of Childhood Sexuality," *Medical History* 56.2 (2012): 156-183.

⁸⁵ Published in, *Zeitschrift für Sexualwissenschaft* 9 (1922). Reprinted in, *Early Writings, Volume One*, 86-124.

clear sky”—but perhaps we can understand some of the reasons for it. Reich was likely attempting to legitimate the work of Freud and continue the narrative of psychoanalytic uniqueness, especially Freud’s argument for precedence in discovering childhood sexuality.⁸⁶ One of Freud’s most famous pieces, *Three Essays* is a complex work, in part because it went through a number of revisions and additions over a period of more than twenty years. It is possible that Freud’s revisions and inclusion of infantile sexuality was prompted by Moll’s own work on the subject. It is clear, however, both from Reich’s paper and from minutes of the Vienna Psychoanalytical Society, that Moll was not looked upon kindly within the psychoanalytic community; Freud considered him “not to be taken seriously.”⁸⁷ Surely Freud’s disciples would honor their mentor by presenting Moll in a negative light.

We must make further conjectures about Reich when we examine another puzzling piece of information regarding this survey: Reich recollected his presentation of this material in his diary as follows: “approximately thirty [people] were present, most all of whom gradually left, thank God. My lecture had elevated me out of all proportion in everyone’s eyes, since no one was able to follow it except a few members from the year before.”⁸⁸ Brilliant lectures are typically not abandoned before their completion, or at least before the question and answer period. How should we interpret this memory? Perhaps it is a telling sign of how intellectually superficial Reich’s discussion of these

⁸⁶ Sigusch notes, “Moll had already, in 1897, discussed ‘normal’ child sexuality, not only in passing, but effectively ‘discovering’ it in a systematic way, ‘proving’ it empirically, and developing a theoretical framework for it.” (“The Sexologist Albert Moll,” 191).

⁸⁷ “Scientific Meeting on February 5, 1913.” Reprinted in, *Minutes of the Vienna Psychoanalytic Society, Volume IV: 1912-1918*, ed. Herman Nunberg and Ernst Federn (New York: International Universities Press, 1975), 160.

⁸⁸ Reich, *Passion of Youth*, 130.

concepts were. On the other hand, it may be a reflection of a poor ability to communicate ideas, something that Freud would pick up on and mention to Reich several years later in response to his manuscript on the function of orgasm. It would not be untypical of Reich's enthusiasm to interpret boredom at his lecture as a sign of intellectual superiority.

There is another possibility, however. Reich may have once more been aligning his own life story with that of his esteemed mentor. There are clear parallels to be drawn here between Freud's narrative of the icy reception of his seduction theory and Reich's memories of his own talk.⁸⁹ An even better parallel can be drawn to Reich's recollection of the 28 November 1923 presentation his first major paper, "On Genitality," which dealt with orgasm:

During my presentation, I became aware of a growing chilliness in the mood of the meeting. I was a good speaker and had always been listened to attentively. When I had finished, an icy stillness hung over the room. Following a break, the discussing began. My contention that the genital disturbance was an important, perhaps the most important, symptom of neurosis was said to be erroneous. . . . Two analysts literally asserted that they knew any number of female patients who had a 'completely healthy genital life.' They appeared to be more excited than was in keeping with their usual scientific reserve.⁹⁰

Reich firmly believed in the legend of Freud's exceptionality, and he actively sought to create the same narrative for himself. We find him, therefore, like Freud, giving no credit or reference to the ideas of important thinkers like Moll and Ellis in the formulation of his own ideas, despite the fact that both men's work had obvious parallels

⁸⁹ Allen Esterson, "The Myth of Freud's Ostracism by the Medical Community in 1896-1905: Jeffrey Masson's Assault on Truth," *History of Psychology* 5.2 (2002): 115-134.

⁹⁰ Reich, *The Function of the Orgasm*, 98

to Reich's own theory of orgasm.⁹¹ This sort of selective memory manifests itself in other areas of Reich's work. For example, while adamantly defending the uniqueness, and the especially scientific nature of his own sex-economics in contrast with psychoanalysis, Reich relied heavily on a distinctly Freudian concept of libido or sexual energy throughout his life, and his personal beliefs about sexuality were deeply informed by Freud, especially the *Three Essays*.

In Reich's archives, there is a diagram where he lists the key ideas that he took from psychoanalysis, and elaborates how he proved these theories through his own technique of character analysis, and later orgonomy (see fig. 1.1).

PSA	CHAR-AN.			ORGONOMY	
Orig. Discovery	Abandon.	Confirm	Corrected or Continued	Orig. Discovery	Developm. Result
Infant Sexuality	-	+	Sadism, Masochism, Anal Erotic; all perversions are "Secondary Drives," result of education	Bio-Energetic Contact between Infant and Mother	Onset of Biopathy in anorgonotic or spastic uterus
Phallic Genitality	-	+	Vaginal Genitality exists	Natural Primal Genitality Orgastic Potency	The Life Formula: Tension – Charge – Discharge, – Relaxation
Libido Theory	-	+	Elaboration of Genital Libido Functions	Bio-electric, later orgonotic nature of Libido, Nature of orgastic convulsion	Biogenesis concepts of Life Energy
Libidin. Anxiety	By P.S.A.	By Sex-Economy	Anxiety is Libido functioning in opposite direction = <u>centripetal flow</u>	Flow of Bioenergy in Organism; Bio-electric Function of Sex. And Anxiety	Center and Periphery of Organism; CORE; PERIPHERY, BIO-ENERGY FIELD
Sexual Stasis	-	+	Elaborated clinically	Stagnant Bio-Energy;	Cancer and other "Biopathies"
Meaning of Neurotic Symptom in an otherwise healthy organism	-	+	Emphasis on Energy Stasis	Symptom is only peak of Neurotic Character	The ubiquitous Life Negative Structure of Man reared in Genitality suppressing Culture - <u>Biopathy</u>

Figure 1.1: Adoptions from traditional psychoanalysis into Reichian theory. Table reproduced from Wilhelm Reich Archives, OI Box 2.

⁹¹ Later, in a move reminiscent of Freud's *Three Essays*, Reich would omit giving credit to those who helped developed his sex-economy, noting: "They will understand why, in the scope of the present volume, I have to refrain from paying due respect to their accomplishments," *Function of the Orgasm*, 10.

The key concepts Reich lists are: infant sexuality, phallic genitality, libido theory, sexual stasis, libidinal anxiety, and the “meaning of the neurotic symptom in an otherwise healthy organism.”⁹² Of course, none of these concepts are exclusive to psychoanalysis. Nevertheless, as important as these theories are to Reich’s own thought, and the extent to which he contributes to their development makes it impossible to ever disentangle Reich from Freudian psychoanalysis, no matter how much he might protest that his ideas are different.

Infantile Sexuality and the Perversions

In reality, Freud was not the original discover of the many ideas Reich attributes to him, nor was he alone believing sexuality was present in the infant. In fact, until 1897, Freud was insistent that sexuality was something induced in the child by outside forces. It was only with the abandonment of his seduction theory that he began to argue sexuality existed in its full form within the child from birth and required no external stimulus or contagion. In fact, it was not until 1915, several years after Moll published his own monograph entitled *The Sexual Life of the Child*, that Freud amended his 1905 essays on sexuality to include, “the entire sections on the sexual theories of children and the pregenital organization of the libido.”⁹³ And it was only in 1920, in a subsequent revision, that Freud added a footnote that referred to the Oedipus complex as “the peak of

⁹² Wilhelm Reich Archives, OI Box 2

⁹³ Freud, “Three Essays,” Editor’s Note, 125.

the infantile sexuality” and attributed failure to master the complex as the source of the neuroses and perversions.⁹⁴

Moll began *The Sexual Life of the Child* by demarcating distinct phases within the two periods of infancy and childhood. He then addresses the question of how, if sexuality is present from infancy, puberty has come to be associated with its emergence. He describes the same forgetting that Freud would in 1915, but he dismisses this amnesia as being simply a result of the fact that such memories, “were uninteresting at the time, or if subsequently they have become uninteresting.”⁹⁵ Freud, on the other hand, uses the concept of phylogeny to explain this forgetting.

Both Moll and Ellis incorporated phylogenetic concepts into their sexological theories, and Freud would follow their lead. Following his abandonment of the seduction theory, Freud began incorporating a complex combination of mythology and recapitulation theory to explain sexual development and the perversions.⁹⁶ There is much controversy about Freud’s so-called “seduction theory,” in which the neuroses emerge as the result of childhood sexual trauma, often carried out on a youngster by a parent, sibling, or caretaker.⁹⁷ With the discovery and articulation of the Oedipus complex, Freud moved away from the seduction theory, seeing the sexual trauma not as real but

⁹⁴ Hartocollis, “Origins and Evolutions,” 323. For more on Freud’s use of Oedipus, see Daniel Orrells, *Sex: Antiquity and its Legacy* (New York: Oxford University Press, 2015), “Freud’s Classical Mythology,” 152–187.

⁹⁵ Moll, *The Sexual Life of the Child*, 5.

⁹⁶ See Vanda Zajko and Ellen O’Gorman, *Classical Myth and Psychoanalysis: Ancient and Modern Stories of the Self* (Oxford: Oxford University Press, 2013).

⁹⁷ For more on this controversy, see: R.B. Blass and B. Simon, “The Value of Historical Perspective to Contemporary Psychoanalysis: Freud’s ‘Seduction Hypothesis,’” *International Journal of Psychoanalysis* 75 (1994): 677–693; Zvi Lothane, “Freud’s Seduction Theory Revisited,” *Psychoanalytic Review* 88.5 (2001): 674–723; Jean G. Schimek, “Fact and Fantasy in the Seduction Theory: A Historical Review,” *Journal of the American Psychoanalytic Association* 35 (1987): 937–964.

imagined.⁹⁸ According to Siegfried and Florian Zepf: “By anchoring the Oedipus complex in phylogenesis” Freud suggests its universality, as it supposedly originated in the situation of the primal horde, an “event that would have been typed in the ‘archaic heritage’ of mankind.”⁹⁹ Reich, early on, took issue with this mythology, in which the juvenile males, angry at being forbidden to procreate, kill the primal father. The genetic transmission of this guilt supposedly occurred through “memory-traces” that permanently effected the species. Reich would come to suggest, instead, that it was repressive, bourgeois education that awoke Oedipal complexes in children (this will be discussed further in the following chapter).¹⁰⁰

The emergence of the Oedipus complex marked the beginning of a new mythologically based phylogenetic explanation of sexual deviance that was distinct from the economic-energetic model of libido best exemplified by the posthumous “Project for a Scientific Psychology.”¹⁰¹ The Oedipus complex came to be seen as the “nuclear complex” of the neuroses, and for psychoanalysts attempting to unravel the mysteries of

⁹⁸ The first published use of the term “Oedipus Complex” appeared in 1910 in a paper entitled “A Special Type of Choice of Object by Man.” However, it was not until 1913, in *Totem and Taboo*, that Freud articulated the phylogenetic origin of the complex in his story of the killing of the primal father. See Peter Hartocollis, “Origins and Evolution of the Oedipus Complex as Conceptualized by Freud,” *Psychoanalytic Review* 92.3 (2005): 323.

⁹⁹ Siegfried Zepf and Florian D. Zepf, “‘You are Requested to Close an Eye’: Freud’s Seduction Theory and Theory of the Oedipus Complex Revisited,” *Psychoanalytic Review* 98.3 (2011): 298.

¹⁰⁰ Zepf and Zepf conclude: “Since Freud’s clinical arguments do not give a good reason for his turning toward phylogenesis, and since the universality of the Oedipus complex would not be a sufficient but merely a necessary condition for its phylogenetic foundation even if it were valid and Freud had referred to it, we are inclined to assume that in the case of the emergence of the Oedipal complex, Freud’s turning to phylogenesis is rather due to psychical reasons.”¹⁰⁰ “Freud’s phylogenetic considerations can be explained psychologically as a substitutive idea in which the ontogenetic origin of the oedipal scenery—that which had to remain hidden from him for some reason—reappears in phylogenetic disguise,” “‘You are Requested to Close an Eye,’” 317.

¹⁰¹ Sigmund Freud, “Project for a Scientific Psychology (1895),” *The Standard Edition of the Complete Psychological Works of Sigmund Freud*, vol. 1 (1950), 281–391.

the psyche it became “the nuclear complex of the unconscious of mankind in general.”¹⁰²

This model did not seek to measure and quantify energy, a more physicochemical approach, but instead it brought psychoanalytic theory in line with a mythological evolutionary heritage.

Curiously enough, according to Freud the infant is unaware of the sexual instincts of childhood, because infancy is representative of “a prehistoric epoch,” that is now concealed and hidden to developed man.¹⁰³ Similarly, the period of sexual latency in the ontogeny of the individual infant is correlated to the phylogenetic period of sublimation, when man first learned to diversify his sexual instinct for the purpose of cultural achievement.¹⁰⁴

These evolutionary ideas are applied to the origin of human life itself. In the *Three Essays*, Freud also began to employ a romantic metaphor, alluding to a past in which man and woman were once united in a single organism, assumingly some sort of hermaphroditic ancestor.¹⁰⁵ Upon being split into separate bodies, the male and female sexes were forever yearning to reunite as one. This longing for reunification comprises the sexual instinct. It also sets a norm by which abnormal sexuality can be judged. Before discussing the theory of psychosexual development in more detail, I want to make some

¹⁰² Otto Fenichel, “The Preenatal Antecedents of the Oedipus Complex,” *International Journal of Psychoanalysis* 12 (1931): 141.

¹⁰³ Freud, “Three Essays,” 175.

¹⁰⁴ Freud, “Three Essays,” 177.

¹⁰⁵ The belief in a differentiation of sexual energy was not uncommon in the late-nineteenth and early twentieth century: “Evolutionary theory suggested that in the primeval organism desire was equally distributed throughout the protoplasm. . . . In the course of evolution, it was widely argued, specialization increased so that the zones of reproduction, ingestion, and defecation were gradually separated. With the sexually reproducing animals, specifically sexual organs developed, though secondary erotic zones in particular regions of the body remained as a legacy from [sic] an earlier epoch.” See Birken, *Consuming Desire*, 63.

remarks about Freud's views on sexual pathology, and how they compare to the work of Moll and Ellis. This is important because, despite his misgivings about the universality of the Oedipus complex, Reich adopted a distinctly Freudian concept of abnormal sexuality, especially in viewing homosexuality as an aberration.¹⁰⁶

Although Freud envisioned male and female as deriving from a single hermaphroditic ancestor, Freud's libido was distinctly male, and female sexuality was a sort of weak imitation. Freud is famous for his proposal that vaginal supremacy represents the mature female form of sexuality. The clitoris, by contrast, is an immature organ, a small phallus, and its manipulation in adulthood represents an inability to accept the feminine role and an especially strong manifestation of penis envy. As previously mentioned, Freud rarely discussed orgasm, and most commentators ignore the fact that Freud did not explicitly speak about vaginal or clitoral orgasm. This was extrapolated from his schema of psychosexual development in which, for girls, the vagina eventually became the seat of sexuality.¹⁰⁷ Jane Gerhard notes that "when Freud entered into the debate about the nature of female sexual desire in 1905, he did so at a moment when information about the female orgasm and the clitoris were at best discussed as extraneous components of women's essential heterosexual identity."¹⁰⁸ Nevertheless, Freud never abandoned the clitoris as a source of female sexual excitement; rather, he proposed that in a mature female the clitoris acted like kindling, transferring its arousal to the surrounding

¹⁰⁶ For more on homosexuality: Robert Deam Tobin, "'Homosexuality' and the Politics of the Nation in Austria, Hungary, and Austria-Hungary," in *Peripheral Desires: The German Discovery of Sex* (Philadelphia: University of Pennsylvania Press, 2015), 111–133.

¹⁰⁷ Cynthia Jane, "Freud, Grafenberg, and the Neglected Vagina: Thoughts Concerning an Historical Omission in Sexology," *Journal of Sex Research* 20.2 (1984): 212–215.

¹⁰⁸ Jane Gerhard, "Revisiting 'The Myth of the Vaginal Orgasm': The Female Orgasm in American Sexual Thought and Second Wave Feminism," *Feminist Studies* 26.2 (2000): 452.

vagina, which has now become the primary genital zone.¹⁰⁹ Reich spoke little about the clitoris, but it is clear from his writings that he valued vaginal supremacy.

The concept of vaginal orgasm has been extremely divisive, and for the most part denounced by feminists.¹¹⁰ Even sympathizers recognize Freud's utter lack of understanding of the female body: "Not only does he lack appropriate terms to define feminine sensual events, he also insists on a parallel between the man's sexual functioning and that of the woman," writes Alizade.¹¹¹ Paula Bennett, a scholar who has written extensively about gender and sexuality, remarks, "Freud's lapse may be explained by the privileged role he gives the penis in psychosexual development and by the contempt he heaps on the clitoris because of its 'inferior' size. But it is difficult not to believe that a profound fear of independent female sexual potency underlies his blindness as well."¹¹² Now commonly considered to be an error, Freud's assertion meant that all women who did not experience vaginal orgasm were frigid or "anesthetic" and at greater risk of succumbing to hysteria or neurosis. Stephen Jay Gould notes: "This dogma of transfer from clitoral to vaginal orgasm became a shibboleth of pop culture during the

¹⁰⁹ Freud would vacillate on this issue throughout subsequent publications, sometimes writing of a clitoris that had fully denounced its sensitivity, returning to the kindling metaphor at other times. See: Cynthia Jane, "The Dark Continent Revisited: An Examination of the Freudian View of the Female Orgasm," *Psychoanalysis and Contemporary Thought* 3 (1980): 545-568.

¹¹⁰ One of the most famous essays on the subject is Anne Koedt, "The Myth of the Vaginal Orgasm," in *Feminism in Our Time: The Essential Writings, World War II to Present*, ed. Miriam Schneir (New York: Vintage Books, 1994), 333-342. Clitoral sexuality has become a sort of rallying point for feminists, producing publications like, Rebecca Chalker's *The Clitoral Truth: The Secret World at Your Fingertips* (New York: Seven Stories Press, 2010).

¹¹¹ Alizade, *Feminine Sensuality*.

¹¹² Paula Bennett, "Clitirodectomy: Female Sexual Imagery and Feminist Psychoanalytic Theory," *Signs* 18.2 (1993): 250.

heady days of pervasive Freudianism.”¹¹³ A large percentage of women were diagnosed as sexually impotent, and various strategies were devised to help them awaken their vaginal sexuality. It was even suggested that surgery could help relocate the clitoris closer to the vagina.¹¹⁴ Although Freud would disdain Reich’s desire to measure mental health by orgasm, there was really only one way to interpret his doctrine of vaginal orgasm: the psychological health of a woman can be determined by her ability to have orgasms, especially vaginal ones.¹¹⁵

Ellis rejected Freud’s famous doctrine, endorsed by Reich (who disagreed with Freud in seeing vaginal sexuality as present from birth), that vaginal orgasm is the only proper orgasm in the female. He wrote that “the key to the genital apparatus in women from the psychic point of view, and indeed, to some extent, its anatomical center, is to be found in the clitoris.”¹¹⁶ He found females to have incredibly complex areas of arousal, which included the clitoris, vagina, and womb, but also the breasts and other areas. In this sense, Robinson credits him as being, “among the architects of the theory of erogenous (or ergogenic) zones.”¹¹⁷

As for the sexual aberrations, Freud views some of them as more deviant than others. Homosexuality was particularly frowned upon, although Freud’s views on the

¹¹³ Stephen Jay Gould, *Ontogeny and Phylogeny* (Cambridge, Mass.: Belknap Press, 1977), 90-91.

¹¹⁴ Marie Bonaparte, *Female Sexuality*. Quoted in Koedt. For a recent work on the surgical manipulation of the clitoris, see Sarah B. Rodriguez, *Female Circumcision and Clitoridectomy in the United States: A History of a Medical Treatment* (Rochester, NY: University of Rochester Press, 2014).

¹¹⁵ Richard C. Robertiello, “The ‘Clitoral versus Vaginal Orgasm’ Controversy and Some of Its Ramifications,” *The Journal of Sex Research* 6.4 (1970): 308.

¹¹⁶ Ellis, *Erotic Symbolism*, 129.

¹¹⁷ Robinson, *The Modernization of Sex*, 18.

matter are complex and changed over time.¹¹⁸ Freud's belief in a hermaphroditic, primal ancestor is not meant to support the bisexual nature of all human beings, but to assert that there the two distinct genders and should each desire their opposite in order to be complete. This follows the basic rules of attraction and repulsion. Sexual inversion, the popular term for homosexuality at the time, is therefore seen as an extreme sort of pathology. Not only a disturbance of the mind, but of basic physical laws. Freud would later envision homosexuality as a disorder with a phylogenetic basis in a time when women were the exclusive property of dominant males, and men formed into homosexual communities. He used the term "degeneracy" to describe same-sex relationships and argued that inverts have been arrested at a specific stage of psychosexual or phylogenetic development, or else they have reverted back to a more savage state of existence.

Ellis also employed the ur-hermaphroditic metaphor, although he drew very different conclusions about how this applied to sexuality. He resisted the concept that homosexuality was a disease, believing instead that it was a congenital trait with little to no possibility of being cured.¹¹⁹ Belief in a shared hermaphroditic constitution led to an understanding of masculinity and femininity functioning on a spectrum, perhaps dictated by the body's internal chemistry.¹²⁰ For Ellis, this ur-hermaphroditism provided a possible explanation for homosexuality. It could be explained by the fact that humans' remote aquatic ancestors did not possess any differentiation of sexual organs, and human beings recapitulate this stage of evolution as fetuses in the womb. From a hermaphroditic

¹¹⁸ For more, see Kenneth Lewes, *Psychoanalysis and Male Homosexuality* (Northvale, NJ: J. Aronson, 1995).

¹¹⁹ Robinson, *The Modernization of Sex*, 6.

¹²⁰ Robinson, *The Modernization of Sex*, 8.

fish, the developing embryo passes through a reptilian phase, and ultimately to a stage of genital development resembling apes.¹²¹ The clitoris is a pseudo-penis, and the genitals display lots of individual variation. Homosexuality, therefore, harkens back to a time before the male and female genital system diverged.

Moll's distinctions between the sexes are entirely descriptive. He uses anatomical data and studies from experimental psychology to prove that there is differentiation both physically and psychologically between the sexes, but he provides no theory as to why these differences exist. Similarly, he remarks that there occurs a period of undifferentiated sexual impulse in the child, where the love object may be either hetero or homosexual, but this is believed to extinguish past a certain age and no underlying explanation is given for why it emerges or disappears, but Moll simply describes it as a "perverse" and "congenital" mode of sexual sensibility.¹²²

While coming down rather hard on the question of inversion, Freud is more amenable to certain forms of sadism and masochism, the latter is considered to be nothing more than a perversion of the former: "masochism is nothing more than an extension of sadism turned round upon the subject's own self."¹²³ As was common among the sexologists, Freud extended the thrill of the wild animal's hunt and capture to the realm of sadism. It is only when sadism is pre-occupied with inflicting pain that it can be considered a perversion. For Freud, there was nothing wrong with a dominant or active attitude towards the sex object:

¹²¹ Ellis, *Erotic Symbolism*, 119.

¹²² Albert Moll, *The Sexual Life of the Child*, trans. Eden Paul (New York: Macmillan, 1912), 61-62. Originally published as, *Das Sexualleben des Kindes* (Berlin: Walther, 1909).

¹²³ Freud, *Three Essays*, 157.

The history of human civilization shows beyond any doubt that there is an intimate connection between cruelty and the sexual instinct. . . . According to some authorities this aggressive element of the sexual instinct is in reality a relic of cannibalistic desires—that is, it is a contribution derived from the apparatus for obtaining mastery, which is concerned with the satisfaction of the other and, ontogenetically, the older of the great instinctual needs.¹²⁴

Ellis also took a more relaxed stance on this sexual deviation. He rationalized sadomasochism through similar analogies to animal courtship.¹²⁵ Similarly, while the positive or negative ramifications of masturbation were intensely debated among psychoanalysts, Ellis was of the view it was quite benign. In fact, he uses anthropological evidence to suggest that manipulation of the penis from an early age actually contributes to its size and vigor.¹²⁶ Reich's views on masturbation were nuanced. Although he would promote it in his patients as a first step to achieving sexual health, and would also voice his disagreement with the idea that masturbation led to physical degeneracy, he did question its healthfulness. His primary concern was the disconnect between reality and fantasy in masturbation, in that masturbation contributed to the divorce of physical and psychological dimensions of sexual expression. His interest in the organic basis of sexual dysfunction also led him to posit that masturbation caused excessive stimulation of the nervous system.

More than their discussion of pathology, however, Freud's *Three Essays* are best remembered for their discussion of the various phases of psychosexual development: the oral, anal, and phallic stage. The genital stage emerged after puberty, and was the

¹²⁴ Freud, *Three Essays*, 158.

¹²⁵ Robinson, *The Modernization of Sex*, 22.

¹²⁶ Ellis, *Erotic Symbolism*, 123.

hallmark of adult sexuality. However, “The Phases of Development of the Sexual Organization” was not completed until the 1924 edition. The oral stage was added in 1915, and the phallic stage was added in 1923.¹²⁷

Freud’s theory of the phases of sexual development is the most unique aspect of his theory of childhood sexuality. Commenting on the *Three Essays*, Arnold Davidson remarks:

The idea that the sexual instinct is made up of components, that it so combines a multiplicity of erotogenic zones and aims, is a . . . radical break with the nineteenth-century medical conceptualization of the sexual instinct. Freud’s argument, his structure of concepts, leads to the claim that neither the erotogenic zone of the genitals nor the aim of copulation bear any privileged connection to the sexual instinct. . . . the sexual instinct and sexual aim are merely soldered together.¹²⁸

Freud is also famous for making the statement that all of the perversions of adult life are present in the infant, although perhaps in an attenuated or seed-like form.¹²⁹ In the words of Arlow, in Freud’s famous schema of infantile development

Sexuality was no longer confined to procreation or to the genitals, it was polymorphous and found outlet especially at the surface of the skin and mucous membranes: the mouth, the anus, and the urethra. Sexuality, or libido, was a sort of immutable energy that had its own evolution, both within the individual (ontogeny) and throughout the entire evolutionary history of living organisms [phylogeny]. It was also extremely responsive to the environment, and capable of adapting in Lamarckian ways.¹³⁰

This claim would be grossly misinterpreted by his critics, who took the concept of the polymorphously perverse infant and ran with it. The American psychologist and chess grandmaster Rueben Fine would later clarify Freud’s intentions: By saying that, “the

¹²⁷ Davidson, “Freud’s ‘Three Essays,’” 270.

¹²⁸ Davidson, “Freud’s ‘Three Essays,’” 270.

¹²⁹ Described as, “the germs of all the perversions,” Freud, “Three Essays,” 171.

¹³⁰ Arlow, “The Theory of Drives,” 230.

child is polymorphous perverse, Freud meant that all the activities that are carried out by the pervert and fantasied by the neurotic are normal to the child at some stage in childhood.”¹³¹ Factuality of this statement aside, Freud is actually pointing here to the concept of regression, degeneracy, or developmental arrest. That is to say that, “the sexuality of neurotics has remained in, or been brought back to, an infantile state.”¹³²

Freud finds in the infant the most natural expression of the sexual impulse.¹³³ His schema of psychosexual development made genital sexuality simply one of many outlets for the sexual impulse, and the last to develop.¹³⁴ (This would come to be a major problem for Reich, who saw all pregenital forms of sexuality as neurotic).¹³⁵ Libido itself came to have its own history, with childhood being a key locus of development. Although recapitulationist terminology would not be rigorously employed until around 1915, Freud was clearly imagining libido as having both an ancestral history and an individual history—a phylogeny and an ontogeny. According to Patricia Cotti, Senior Lecturer in Psychopathology and Psychoanalysis at the University of Strasbourg and author of a detailed essay on the development of libido theory, by 1911, this “historical development of the libido,” (*Entwicklungsgeschichte der Libido*), had grown “into a blatant theoretical

¹³¹ Reuben Fine, *The Development of Freud's Thought: From the Beginnings (1886-1900) through Id Psychology (1900-1914) to Ego Psychology (1914-1939)* (New York: Jason Aronson, 1973), 63.

¹³² Freud, “Three Essays,” 171.

¹³³ Norman O. Brown and Christopher Lasch, “Sexuality and Childhood,” *Life Against Death: The Psychoanalytic Meaning of History* (Middletown: Wesleyan University Press, 2012), 25-26

¹³⁴ In this, “there is first of all a critique of the genital function and an implied rejection of genital intercourse—‘free love’ and the orgasm—as a solution to the sexual problem.” Brown and Lasch, “Sexuality and Childhood,” 29.

¹³⁵ Reich, *The Function of the Orgasm*, 81.

feature” of Freud’s work.¹³⁶ With the Oedipus theory, Freud had introduced an important feature in the ontogenesis of libido, but he needed to couple it with a phylogenetic history in order to prove the universality of his ideas.

Ontogeny and Phylogeny: Freud’s “Phylogenetic Fantasy”

The third edition of Freud’s *Three Essays* added more than just a schema of childhood sexual development. It also introduced the concept of ontogeny and phylogeny into the psychoanalytic teachings on sexuality. Phylogenetic concepts provided psychoanalytical understandings of the mind with a unique and seemingly biological rationale.¹³⁷ In the preface to the 1915 revisions, Freud wrote:

Ontogenesis may be regarded as a recapitulation of phylogenesis, in so far as the latter has not been modified by more recent experience. The phylogenetic disposition can be seen at work behind the ontogenetic process. But disposition is ultimately the precipitate of earlier experience of the species to which the more recent experience of the individual, as the sum of the accidental factors, is super-added.¹³⁸

Popularized by Haeckel in the 1860s, the relationship between ontogeny and phylogeny is outlined in what he later came to call the biogenetic law, which states that ontogeny is caused by phylogeny and comprises a rapid recapitulation of the most important traits of an organism’s ancestors.¹³⁹ Historian of science Lynn Nyhart describes

¹³⁶ Cotti, “The History of the Libido’s Development,” 243.

¹³⁷ Stephen Jay Gould has written a critique of Freud’s misapplication of recapitulation theory. See, “Freud’s Phylogenetic Fantasy,” *Natural History* 96.12 (1987): 10-19.

¹³⁸ Freud, “Three Essays,” 130.

¹³⁹ Frederick D. Churchill, “Living With the Biogenetic Law,” in *From Embryology to Evo-Devo: A History of Developmental Evolution*, ed. Manfred D. Laubichler and Jane Maienschein (Cambridge, MA.: MIT Press, 2007), 41. For more on Haeckel’s life and thought: Robert J. Richards, *The Tragic Sense of Life: Ernst Haeckel and the Struggle over Evolutionary Thought* (Chicago: University of Chicago Press, 2008); also “Ernst Haeckel’s Scientific and Artistic Struggles” and “Haeckel’s Embryos” in *Was Hitler a Darwinian?: Disputed Questions in the History of Evolutionary Theory* (Chicago: University of Chicago

Haeckel's biogenetic law as follows: "The evolution of the animal kingdom was analogous to individual development not just because the laws of development were the same, but also because the animal kingdom itself was a form of individual."¹⁴⁰ Although the idea was dismissed within biological circles, it had a profound cultural impact and a lasting legacy in other disciplines. In his lengthy monograph on the subject, the evolutionary biologist and historian of science Stephen Jay Gould noted, "its influence as an import from evolutionary theory into other fields was exceeded only by natural selection itself during the nineteenth century."¹⁴¹ Freud would work with Ferenczi to develop a phylogenetic history of libido during World War I.

Of course, Freud was thinking about sexuality in evolutionary terms long before he articulated his phylogentic theories to Ferenczi. In fact, his career began in just this area. As Ursula Reid-Schrewe points out, little attention has been paid to Freud's earlier biological work, as it is considered to be from his "student days" and therefore of an entirely different character and quality than his psychoanalytic writings.¹⁴² She undermines this assumption by examining one of Freud's student works, his 1877 publication on the lobed organs of eels, and showing how it relates to his later psychoanalytic work.¹⁴³

Press, 2013); and Nick Hopwood, *Haeckel's Embryos: Images, Evolution, and Fraud* (Chicago: University of Chicago Press, 2015).

¹⁴⁰ Lynn K. Nyhart, "Descent and the Laws of Development," in *Biology Takes Form: Animal Morphology and the German University, 1800-1900* (Chicago: University of Chicago Press, 1995), 133.

¹⁴¹ Gould, *Ontogeny and Phylogeny*, 115.

¹⁴² "Freud's Début in the Sciences," in *Reading Freud's Reading*, ed. Sander L. Gilman, Jutta Birmele, Jay Geller, and Valerie D. Greenberg (New York: New York University Press, 1994), 3.

¹⁴³ For a more recent take on Freud and eels, see Martin Wieser, "From the EEL to the EGO: Psychoanalysis and the Remnants of Freud's Early Scientific Practice," *Journal of the History of the Behavioral Sciences* 49 (2013): 259–280.

Freud's work on eels was carried out at the Marine Zoological Station in Trieste, under the orders of his zoology professor, Carl Claus. As a Darwinist, Claus was especially interested in finding proof that the eel was a bisexual creature. This would provide good evidence for man's descent from a hermaphroditic ancestor. Freud was asked by Claus to discern whether or not the recent discovery of eel testicles by Simon Syrski was valid or not. Freud's publication failed to confirm or disconfirm Syrski's findings. Widely understood to be an inconclusive study, and perhaps evidence of Freud's lack of talent in biology, Reid-Schrewe argues that it is incorrect to assume that proving the existence of eel testes was something Freud even wanted to do.

Ideological loyalties kept in mind, it is easy to understand why Freud would argue that the lobed organs of the eel were simply immature ovaries, despite histological evidence to the contrary. Not only was Freud showing allegiance to his professor, he was also aligning himself with the Darwinism popular at the University of Vienna in the late nineteenth century. "In this regard, the eel article is a reflection of biographical circumstance as well as a resource which documents the scientific debate about the Darwinist ideas on the evolution of reproductive functions."¹⁴⁴ The article is purposefully ambiguous in order to avoid confrontation.

Despite the fact that Freud's early eel article is largely dismissed, by both his biographers and historians of today, interpreted as a sort of ironic fact that, of course, Freud's work always began with sexuality, Reid-Schrewe makes a convincing argument that we should interpret this piece, "not [as] an awkward, isolated incident in Freud's life, but as an essential part of the biological preparation which informed Freud's later insights

¹⁴⁴ Reid-Schrewe, "Freud's Début," 6.

into the psycho-biological mechanisms of human nature.”¹⁴⁵ Perhaps we must also understand it as an early example of Freud’s ability to ignore objective evidence, in this case the histological data that pointed towards the existence of both ovary and testicle in eels, in favor of theory.¹⁴⁶

Freud’s scientific debut, in which he is constantly, “swaying between hermaphroditism and the division of the sexes,” finds parallels in Freud’s later psychoanalytic descriptions of sexuality.¹⁴⁷ Freud was interested in applying the concept of phylogeny to psychoanalytic theory, and when obvious gaps in his logic were pointed out he found creative ways to explain them away. Lucille Ritvo notes, “Freud intuitively recognized that Lamarck’s animistic view of evolution was more appropriate than the Darwinian for psychological explanations.”¹⁴⁸ However, he only began to seriously engage with Lamarck after his phylogenetic theories had been firmly established.¹⁴⁹ For example, when questioned as to how a eunuch could pass down castration anxiety to his progeny, Freud suggested that those who witnessed castrations surely passed down their profound experience of anxiety to their children. As for homosexuality, perhaps the homosexuals were not rigidly bound to same-sex interactions but also mated with

¹⁴⁵ Reid-Schrewe, “Freud’s Début,” 7.

¹⁴⁶ It should be noted that some of Freud’s histologic work continues to receive praise today. See Eugenio Frixione, “Sigmund Freud’s Contribution to the History of the Neuronal Cytoskeleton,” *Journal of the History of the Neurosciences* 12 (2003): 12–24.

¹⁴⁷ Reid-Schwere, “Freud’s Début,” 10.

¹⁴⁸ Lucille B. Ritvo, “Darwin as the Source of Freud’s Neo-Lamarckianism,” *Journal of the American Psychoanalytic Association* 13 (1965): 503.

¹⁴⁹ Freud first mentions Lamarck in a letter to Ferenczi dated January 6, 1916. See, Sigmund Freud, *A Phylogenetic Fantasy: Overview of the Transference Neuroses*, ed. Ilse Grubrich-Simitis, trans. Axel Hoffer and Peter T. Hoffer (Cambridge, Mass.: Belknap University Press, 1987), 93.

women. When they did procreate, their homosexual inclinations were passed down to their ancestors.¹⁵⁰

Freud gained confidence in and refined his phylogenetic explanations during a period of intense communication and collaboration with Ferenczi described in the opening of this chapter.¹⁵¹ Together, during World War I, the two men worked out the phylogenetic underpinnings of psychoanalysis. In a 1914 essay, Ferenczi would detail his understanding of the use of ontogeny and phylogeny in psychoanalysis:

The deeper psycho-analysis penetrates into the knowledge of social-psychological productions (myths, fairy-tales, folk-lore) the stronger becomes the confirmation of the phylogenetic origin of symbols, which stand out in the mental life of every individual as a precipitate of the experiences of previous generations. Analysis has still to perform the task of separately investigating the phylogenesis and ontogenesis of symbolism, and then establishing their mutual relation.¹⁵²

Ferenczi would eventually come to be one of the most ardent supporters of Freud's recapitulation theory. After translating Freud's *Three Essays*, he became extremely interested in synthesizing biology and psychoanalysis into "bioanalysis," and he applied his ideas to collaboration with Freud, beginning in 1915, to compile a work of metapsychology.¹⁵³ In particular, he helped Freud with the final essay of the dozen intended to complete the volume. Seven of the twelve papers, including the final paper

¹⁵⁰ Freud, *A Phylogenetic Fantasy*, 80-81.

¹⁵¹ According to Ritvo, Ferenczi did not want to engage with Lamarckian ideas: "Darwin as the Source of Freud's Neo-Lamarckianism," 511.

¹⁵² "The Ontogenesis of the Interest in Money," *Sex in Psycho-analysis: Contributions to Psychoanalysis*, trans. Ernest Jones (New York: Richard Badger, 1916), 319. Originally published in the *International Zeitschrift für ärztliche Psychoanalyse*, 1914.

¹⁵³ For more on Freud's metapsychology, see: Patricia Kitcher and Kathleen V. Wilkes, "What Is Freud's Metapsychology?" *Proceedings of the Aristotelian Society, Supplementary Volumes* 62 (1988): 117-137. The authors note that metapsychology attracted Freud as a research ideal that he himself was quite skeptical of achieving. Although he believed psychoanalysis needed metapsychology as a guiding force, his works in this domain took the form of working hypotheses.

Freud had written with the assistance of Ferenczi, were considered lost for decades. In 1983, this last essay was discovered in a trunk belonging to Anna Freud. The trunk contained an early draft of the essay and otherwise was filled with documents written by Ferenczi.

In 1987 the draft was published as Freud's *Phylogenetic Fantasy*.¹⁵⁴ It is a short work, originally entitled "Overview of the Transference Neuroses," although this is something of a misnomer as the work deals with the sequential history of anxiety hysteria, conversion hysteria, obsessional neurosis, dementia praecox, paranoia, and finally melancholia-mania. The document recovered is quite sketchy. It attempts to develop a phylogenetic theory of the emergence of the neuroses. Certain neurotic behavior emerged at certain points in evolutionary history as a response to environmental challenges.

Freud's first hypothesis is that, "mankind, under the influence of the privations that the encroaching Ice Age imposed upon it, has become generally anxious."¹⁵⁵ At this point, Freud's *Inhibitions, Symptoms, and Anxiety* had not been published. Yet, we already see here a new formulation of modern-day anxiety. It is not simply the buildup of libido or some toxic substance in the body, but rather it is a form of regression to a prehistoric stage of development. Conversion hysteria developed in response to the conflict between the libidinal desire to procreate and the prohibitions the scarcity of the ice age imposed on man. This was an especially traumatic period for women, who Freud accused of being particularly repulsed by the necessary killing of newborns, due to

¹⁵⁴ Sigmund Freud, *A Phylogenetic Fantasy: Overview of the Transference Neuroses*, ed. Ilse Grubrich-Simitis, trans. Axel Hoffer and Peter T. Hoffer (Cambridge, MA: Belknap University Press, 1987).

¹⁵⁵ Freud, *A Phylogenetic Fantasy*, 13-14.

narcissistic love.¹⁵⁶ By contrast, the obsessional neuroses primarily afflicted men in their difficulty adapting to the formation of primal hordes.

The second generation that emerged after the ice ages and were born into the horde period of civilization in which a primal father dominated as godhead were subject to the newer neuroses. Dementia emerges from the tension between youthful sexuality of the father and fear of or actual self-castration. Freud makes the claim that for individuals suffering from dementia praecox, “self-castrations are not uncommon.”¹⁵⁷ This period is followed by a time of paranoia, as men banded together in homosexual brotherhood. Finally, melancholia-mania remains somewhat elusive. Unlike other disorders, Freud cannot determine with certainty when it emerged. He connects it with religious feeling, and mourning at the loss of the primal father in favor of the brotherhood of men who overpowered and killed him.

Ferenczi was responsible for pointing Freud to Lamarckianism in his critique of this essay. Lamarck’s ideas would become increasingly appealing to Freud and Ferenczi, long after the larger scientific community dismissed them.¹⁵⁸ As Ritvo observes, “Darwin’s own words and the vicissitudes of his theory during the major part of Freud’s life made it possible for Freud to use freely the neo-Lamarckian mechanisms of inheritance which appear anachronistic or even as an aberration to generations educated

¹⁵⁶ Freud, *A Phylogenetic Fantasy*, 15.

¹⁵⁷ Freud, *A Phylogenetic Fantasy*, 17.

¹⁵⁸ Eliza Slavet argues that Lamarck’s theories held scientific weight well into the 1930s, and that Freud’s refusal to abandon Lamarckian heredity represents a politically motivated stance on Jewish identity during the Nazi rise to power. See “Freud’s ‘Lamarckism’ and the Politics of Racial Science,” *Journal of the History of Biology* 41 (2008): 37–80.

in a later period of biological thought.”¹⁵⁹ However, it is fascinating that Freud, upon undertaking an investigation of Lamarck’s theories, was unwilling to make further public claims on the subject. Noticing that there were many Lamarckian psychologists, he feared too outspoken an affiliation with Lamarck would deprive psychoanalysis of its uniqueness.¹⁶⁰

Despite the rejection of the “Phylogenetic Fantasy” and the failure of the metapsychology project on a whole, Ferenczi was deeply influenced by the concepts he and Freud had been playing with during this time. He began to think about how he could apply phylogenetic concepts to develop a metapsychology of sexuality. He was especially interested in developing a fuller understanding of the psychosexual stages of development and what their successful evolution looked like. He began working on his own theory of genitality at this time, although he would hesitate to publish it for many years.

¹⁵⁹ Lucille B. Ritvo, “Darwin as the Source of Freud’s Neo-Lamarckianism,” *Journal of the American Psychoanalytic Association* 13 (1965): 513. It is interesting to note that while Freud and Ferenczi adopt heavily from Weismann, “It was Weismann who effectively challenged the prevailing idea of the inheritance of acquired characteristics, called at the time Neo-Lamarckianism.” See John C. Burnham, “The Medical Origins and Cultural Uses of Freud’s Instinctual Drive Theory,” *The Psychoanalytic Quarterly* 43 (1974): 199. Burnham notes: “[Freud’s] interest in maintaining the validity of the phylogenetic nature of inborn acquired characteristics was connected primarily with his concern that civilization and cognate repressive forces be understood to be phylogenetic,” p. 202. It seems likely that Haeckel’s theory of “plastidules,” small structures in the protoplasm that “acted as a kind of recording apparatus, receiving impulses from the milieu and storing them as active vibrations in its colloidal structures” was simply far more appealing to Freud and his concept of memory traces than the germ-plasm theory of Weissman against which it was opposed. See Robert Michael Brain, “Materialising the Medium: Ectoplasm and the Quest for Supra-normal Biology in *Fin-de-Siècle* Science and Art,” in *Vibratory Modernism*, ed. Anthony Enns and Shelley Trower (New York: Palgrave MacMillan, 2013), 115–144, here at p. 128.

¹⁶⁰ Freud, *A Phylogenetic Fantasy*, 94.

Ferenczi's *Thalassa*

Reich presented a paper “On Genitality” to the Vienna Psychoanalytic Association at a meeting in November, 1923.¹⁶¹ In it, he described the concept of “genital primacy,” saying that “patients who had reached the genital stage in childhood had a better prognosis than those who, having reached it, later regressed to an earlier mode of psychosexual functioning. The latter in turn had a better prognosis than those who as children had never reached the genital stage but had remained fixated at the anal or oral level.”¹⁶² Reich would introduce his concept of orgasmic potency the following year, at the 8th Congress of the International Psychoanalytic Association in Salzburg.

This same year also witnessed Ferenczi finally publishing his own monograph on genitality.¹⁶³ He had developed his sexual theories and the idea of genitality almost a decade earlier, during his wartime collaboration with Freud, but, despite Freud’s initial encouragement, he never published it. It is not clear whether it was his interaction with the young Reich, who was so fascinated by sexuality and eager to bring the orgasm into the realm of psychoanalysis, that inspired Ferenczi to finally publish his own thoughts on the subject. What is clear, however, is that Ferenczi had been thinking about and developing this subject before he ever met Reich. In his many letters to Freud, Ferenczi makes frequent allusions to the concepts that he would later publish in monograph form. As early as 1910, Ferenczi displayed both a pressing and lasting concern about the

¹⁶¹ Sharaf, *Fury on Earth*, 90.

¹⁶² Sharaf, *Fury on Earth*, 88.

¹⁶³ *Versuch einer Genitaltheorie* (Leipzig: Internationaler Psychoanalytischer Verlag, 1924).

meaning and function of genital sexuality.¹⁶⁴ By 1914, Ferenczi was working intensely on his main theoretical contribution to genitality.¹⁶⁵

The concept of a genital stage was proposed in Freud's *Three Essays* as occurring "around the age of four or five. During this period, masturbation, exhibitionism, and genital feelings toward the parent of the opposite sex began to develop."¹⁶⁶ Karl Abraham first used the term "genital character" to describe individuals who had successfully resolved their Oedipus complex.¹⁶⁷ However, this genital stage had not been placed within a larger theoretical framework of ontogeny and phylogeny, which is what Ferenczi attempted to do by publishing his *Versuch einer Genitaltheorie* (translated into English as *Thalassa*) in 1924.¹⁶⁸ The book is famous for advocating that a lifelong desire to return to the womb characterizes human sexuality in all of its developmental stages.

¹⁶⁴ Letter from Sándor Ferenczi to Sigmund Freud, August 10, 1910, In *The Correspondence of Sigmund Freud and Sándor Ferenczi Volume 1, 1908-1914* (Cambridge, MA: Belknap, 1993), 197-201. Interestingly enough, Ferenczi was also acquainted with the work of Friedrich Kraus, the Vienna-born internist theories of colloid chemistry and the "deep person" would heavily influence Reich's bioelectrical experiments (see chapter 3). Letter from Sándor Ferenczi to Sigmund Freud, November 12, 1913, in *The Correspondence of Sigmund Freud and Sándor Ferenczi Volume 1*, 521. Kraus was no stranger to the psychoanalytic community, and was interested in the sexual etiology of neurosis from an early date, although all (including Reich) would agree he had a rather shallow understanding of their concepts. Jung writes to Freud eagerly in 1911 about a collaboration with Kraus at the Charité medical clinic in Berlin. See: Sigmund Freud, *The Freud-Jung Letters: The Correspondence Between Sigmund Freud and C.G. Jung*, ed. William McGuire (Princeton: Princeton University Press, 1994), 117-18. Freud would later be asked to contribute to a volume edited by Kraus and Theodore Brugsch, but this was interrupted by the war and never materialized. See: *The Correspondence of Sigmund Freud and Sándor Ferenczi, Volume 1*, 520-21. On concerns about Kraus's incomplete appropriation of psychoanalytic ideas, see: Wilhelm Reich, Book Review: "Allgemeine und spezielle Pathologie der Person, klinische Syzygiologie" ("General and special pathology of the person. Clinical syzygiology" by Fr. Kraus), *Internationale Zeitschrift für Psychoanalyse*, 13.3 (1927): 338-339.

¹⁶⁵ Letter from Sándor Ferenczi to Sigmund Freud, May 13, 1914. *The Correspondence of Sigmund Freud and Sándor Ferenczi Volume 1*, 553-554.

¹⁶⁶ Sharaf, *Fury on Earth*, 86.

¹⁶⁷ See: Karl Abraham, "Character-formation on the Genital Level of Libido-development," in vol. 1 of *Selected Papers* (New York: Basic Books, 1953), 407-417.

¹⁶⁸ Sandor Ferenczi. *Thalassa: A Theory of Genitality*, trans. Henry Alden Bunker (Albany: Psychoanalytic Quarterly, 1938).

This represents the ontogenic meaning of genitality. The phylogenetic explanation was that all men developed from the fish *Amphioxus lanceolatus*, and during the sexual act they reproduced the sensation of a fish in the ocean. As Gould summarizes:

The fetus, in the womb of its symbolic ocean, . . . passes through all the ancestral stages from the primal amoeba to a fully formed human. Birth represents the colonization of the land by reptiles and amphibians, while (believe it or not) the latency period following youthful sexuality and before full maturation repeats the torpor induced by ice ages.¹⁶⁹

Thalassa was the result of almost a decade of thought on the subject. It was heavily reliant on the work he and Freud had done for the unpublished volume of metapsychology (as is clear from its reference to the ice ages noted above). So much so that Ilse Grubrich-Simitis refers to it as, “both the legacy of the abandoned Lamarck project and, in a certain sense, also the rejected ‘Phylogenetic Fantasy.’”¹⁷⁰ Indeed, Ferenczi was introduced to the possibility of a phylogenetic psychoanalysis during this correspondence with Freud, when he expressed to Freud his joy that his “*ontogenetic* fantasies so quickly received a phylogenetic sister.”¹⁷¹

In recounting the history of *Thalassa*, Gould makes the surprising claim that, “Ferenczi had the best biological training of all Freud’s associates.”¹⁷² In fact, Ferenczi writes of his own scientific training in 1915 as follows:

My equipment in the natural sciences did not in any wise [sic] exceed that of a physician who in his time has studied various branches of natural science with every diligence and out of a special fondness for them, but who for nearly twenty years has not been concerned with them to any

¹⁶⁹ Gould, “Freud’s Phylogenetic Fantasy,” 14.

¹⁷⁰ Ilse Grubrich-Simitis, “Metapsychology and Metabiology,” in Freud, *A Phylogenetic Fantasy*, 96.

¹⁷¹ Letter from Ferenczi to Freud on July 24th. Reprinted in Freud, *A Phylogenetic Fantasy*, 80. Emphasis added.

¹⁷² Gould, “Freud’s Phylogenetic Fantasy,” 14.

detailed extent. And yet my theory dealt with matters which were at the time the very center of biological discussion. I had at my disposal as works of reference only the fine Zoology of Hesse and Doflein and one work each of Lamarck, Darwin, Haeckel, Bölsche, Lloyd Morgan, Godlwesky, H. Hertwig, Piéron and Trömmner; whereas the results of modern biological investigation, notably those concerned with the mechanics of development, were almost wholly unavailable to me.¹⁷³

It is unclear how possession of almost a dozen of textbooks makes one an expert on the subject of biology, nor it is obvious why Ferenczi continued to develop his theories of genitality over the next decade without any attempt to improve his understanding of biology. The results are rather shocking to a modern audience, and it is somewhat baffling as to why Grubrich-Simitis makes the following claim:

one can still imagine future biologists' rediscovering *Thalassa* as an artistic and at the same time brilliantly abstruse anticipation of revolutionary biological concepts. Although these concepts are now only beginning to be developed, someday when they are properly elaborated, they may help to achieve a completely new theoretical level of the life processes; . . . If so, this would mean that Freud and Ferenczi, with their metapsychological-metabiological speculations, were even farther ahead of the biology of their time than, with psychoanalysis in the narrower sense, they were ahead of the psychology of their day.¹⁷⁴

Amphimixis is the most important concept Ferenczi puts forward in *Thalassa*. It refers to the uniting of all the anxiety of the body and its expulsion through the genital organ. Ferenczi came to develop this idea thinking about the causes of premature ejaculation, and its opposite, *impotentia ejaculandi*: when men are excessively concerned about losing semen and perform all aspects of the sex act except ejaculation.¹⁷⁵ Relying on Freud's description of the oral and anal phases of sexual development, which seemed

¹⁷³ Ferenczi, *Thalassa*, 1-2.

¹⁷⁴ Grubrich-Simitis, "Metapsychology and Metabiology," 96.

¹⁷⁵ Grubrich-Simitis, "Metapsychology and Metabiology," 6.

to be “harking back to early animal forms of life,” Ferenczi describes amphimixis as the successful achievement of genitality in which the anal and urethral drives have become balanced.¹⁷⁶ He credits Abraham with elucidating the connection between urethral genitality and a careless view of semen as an excretion on par with urine. Because some men display “character regressions” to the urethral phase of development, they devalue their sperm and ejaculate prematurely.¹⁷⁷ Ferenczi deduces that the opposite, an overvaluation of sperm, must therefore be related to a regression to an anal stage, where a desire to retain feces is prominent. Ferenczi’s amphimixis describes healthy sexuality, in which the balance of anal and urethral tendencies allow man to achieve ejaculation at an appropriate time.¹⁷⁸

Amphimixis is a term that Ferenczi borrowed from genetics. Popularized in an essay published by August Weismann in 1891, the term was used to refer very specifically to the fusion of a single egg and a single sperm and the subsequent mixing of their hereditary material.¹⁷⁹ Ferenczi appears to have adopted this term with little understanding of Weismann’s intended use. In *Thalassa*, he frequently refers to the germ plasm, but primarily as a seat of unpleasure and repressed instincts:

There is much that points to the fact that instinctual energies are unequally apportioned between soma and germ-plasm; it is as though the greater part of the instincts which are undisposed of were stored up in the germ-plasm, and as though therefore there emanated from the latter in special measure

¹⁷⁶ Ferenczi, *Thalassa*, 5-14.

¹⁷⁷ Ferenczi, *Thalassa*, 6.

¹⁷⁸ The term amphimixis was being bandied about as early as 1920, when Reich commented in his diary, “Human intercourse needs amphimixis.” Reich, *Passion of Youth*, 119.

¹⁷⁹ Frederick B. Churchill, “August Weismann Embraces the Protozoa,” *Journal of the History of Biology* 43 (2010): 769. For a recent biography, idem, *August Weismann: Development, Heredity, and Evolution* (Cambridge, MA: Harvard University Press, 2015).

the traumatic repetition compulsion which discharged a part of the unpleasure (*Unlust*) with each repetition, each coitus. One is tempted to ascribe to the self-castration tendencies which are manifested in the sex act to the striving to extrude from the body wholly or in part the sexual matter so productive of unpleasure.¹⁸⁰

The development of the penis itself can be explained by the fact that the germ plasm contains an extreme amount of primitive anxiety and displeasure, which organisms have attempted to thrust out of their body. Women are the weaker sex, unable to force their sex cells more externally.

For Ferenczi, sexuality at its core is a desire to return to a primitive, amoeboid state within the womb: “a condensed recapitulation of sexual development . . . taking place in each individual sex act.” The foreskin itself is described as a replica of the maternal womb, and erection represents a state of intolerable tension as the penis leaves its protective cloak. Sex becomes a sort of repetition compulsion, in which the individual attempts to discharge the trauma of birth in small amounts. At the same time, sex is a battle. Ejaculation is described as a complicated process in which men struggle with their anal desire to retain and their urethral need to give away: “the entire genital warfare rages about the issue of giving up or not a secretory product.”¹⁸¹ Since sperm is part of the self and is therefore identified with the ego, the painful psychodynamic struggle that is ejaculation is ultimately rewarding because it allows the ego, and therefore the self, to once again exist inside the womb. Sex is a form of male regression in which he temporarily reverts back to his most primitive biological form.

¹⁸⁰ Ferenczi, *Thalassa*, 40.

¹⁸¹ Ferenczi, *Thalassa*, 17.

For women, sex is almost entirely unpleasant. It seems likely that Ferenczi's sole text of Darwin's was *The Descent of Man*, because he writes of women as simply tolerating the sex act because females do not choose the most attractive males, but rather the least repulsive.¹⁸² Sex is generally assumed to be unpleasant for females of all species, because all libido is essentially masculine and it always desires to return to the womb. Since women can only provide the womb during the sex act, they can hardly be gratified by it. He writes: "one phase of the warfare between the sexes is here [in sex] repeated individually—a phase in which the woman comes off second best, since she cedes to man the privilege of penetrating the mother's body."¹⁸³ For Ferenczi, the existence of powerful males, the development of spines or claws to pin down females, and other evolutionary traits are all the result of the fact that women must be made to tolerate the sex act, sometimes forcibly.

Ferenczi writes at some length on the role of orgasm. In fact, he publishes an explanation of the function of orgasm that is remarkably similar to what Reich would champion as his most famous discovery. He sees the orgasm as the ultimate discharge of anxiety and unpleasure that is stored up in the body: "every element of anxiety is successfully eliminated in orgasm and the procreative act terminates with a feeling of complete satisfaction."¹⁸⁴ Nevertheless, for Ferenczi, the positive aspects of orgasm become rather lost under all of the phylogenetic proselytizing. Fitting into his larger schema, the orgasm is, for the most part, deprived of erotic sensation and reduced to "a

¹⁸² Ferenczi, *Thalassa*, 31. Darwin noted that in most species the female "with the rarest exception, is less eager than the male." See Charles Darwin, *The Descent of Man and Selection in Relation to Sex*, vol. 1 (New York: D. Appleton, 1872), 264.

¹⁸³ Ferenczi, *Thalassa*, 26.

¹⁸⁴ Ferenczi, *Thalassa*, 43.

recapitulation of the process of accomplishing that extensive adjustment which the change from foetal to the extrauterine mode of oxygen supply demands.”¹⁸⁵

Ferenczi’s attempt to provide a comprehensive phylogentic explanation in support of a psychoanalytic theory of sexuality, more specifically genitality, was a failure. The publication is a confusing and sometimes absurd mixture of biological concepts and psychological symbolism.¹⁸⁶ Ideas, such as human beings evolved from fish and also experienced a fish-like state of the existence in the womb where they breathe through gills are used as evidence that the penis itself must function as a fish that desires to return to water (the womb), and that man himself can become more fishlike by ejaculating inside of a woman. His interpretation of recapitulation theory led him to believe that, “the bioanalytic conception of developmental processes perceives everywhere at work only the wish or *desire for the restoration of earlier states of life and death*.”¹⁸⁷ The so-called “Thalassal regressive trend” represents an attempt made by the fish in man to return to its aquatic mode of existence before the drying up of the oceans. This surely is an acknowledgment of the existence of Freud’s death drive, a subject discussed at length in chapter 2.

Ferenczi’s *Thalassa* complicated sex, removing almost all of its pleasurable aspects and creating confusing phylogenetic parallels that Reich considered unscientific, and it was all but forgotten amidst the controversy that erupted shortly after the

¹⁸⁵ Ferenczi, *Thalassa*, 35.

¹⁸⁶ A 1940 reviewer remarks, “[Thalassa] is a work that many will consider displays most vividly some of Ferenczi’s most valuable and least valuable qualities. One cannot deny that it has the quality of originality and daring, but whether that of critical power is as prominent is very much open to question.” E. J., Book Review, “Thalassa,” *International Journal of Psycho-Analysis* 21 (1940): 100.

¹⁸⁷ Ferenczi, *Thalassa*. Emphasis original.

publication of Rank's *Trauma of Birth* (1924), which has been described as "focused less on the theoretical aspects of the 'primal trauma,' to which the body of the work is devoted, than on its implications for analytic process and technique."¹⁸⁸ Reich largely neglected the work as well, despite the fact that he and Ferenczi were on good terms, and the work certainly predicted much of Reich's later thought. One cannot doubt that Reich was aware of Ferenczi's work, and a further analysis of the relationship between the two men is a fruitful area of research for scholars of psychoanalysis in the future.¹⁸⁹

From Genitality to Orgastic Potency

Despite Abraham and Ferenczi's precedence, Reich would later boast, "I myself began to be a pioneer, about 1923, when I discovered the genitality problem in neurosis."¹⁹⁰ This idea is carried through in his 1924 piece, "On Genitality." Even more than his 1926 manuscript, *Die Funktion der Orgasmus* (published in English as *Genitality in the Theory and Therapy of Neuroses*), this essay marks a turning point in his career. Although the terminology of orgastic potency would not be found in print until "Further

¹⁸⁸ Peter T. Hoffer, "Ferenczi's Collaboration with Rank: On Paradigm Shift and the Origins of Complementarity in Psychoanalysis," *American Journal of Psychoanalysis* 68 (2008): 130. Rank believed it was not sexuality, but rather birth that was most meaningful for psychoanalysis: "...we...recognize in the birth trauma the ultimate biological basis of the psychical." See: Otto Rank, *The Trauma of Birth* (New York: Robert Brunner, 1952), xiii.

¹⁸⁹ Indeed, there are numerous parallels between the two men, from their beliefs about sexuality to their innovative therapeutic styles to their break with Freud. For more on the latter, see Martin S. Bergmann, "Reflections on the History of Psychoanalysis," *Journal of the American Psychoanalytic Association* 41 (1993): 929–955.

¹⁹⁰ Wilhelm Reich, *Reich Speaks of Freud* (New York: Farrar, Straus and Giroux, 1967), 101.

Remarks on the Therapeutic Significance of the Genital Libido,” published in 1925, genitality stood in as its substitute.¹⁹¹

The statements Reich made were bold. We find Reich first publicizing his often repeated claim that neurosis cannot exist without sexual dysfunction: “It is quite striking,” he writes, “that among the twenty-eight male and fourteen female neurotics I have treated, there was not one who did not manifest symptoms of impotence, frigidity, or sexual abstinence. A survey of several other analysts revealed similar findings.”¹⁹² He then goes on to argue that, “extensive improvement or remission of [neurotic] symptoms is possible without complete exposure of the unconscious.”¹⁹³ The analyst simply needs to get his patients to start enjoying sex again.

This new, simplified method of psychoanalysis is not justified by a larger metapsychology, but instead depends on energetics and the spatial location of libido within the body. Of his purported cures, Reich writes:

The favorable solution of these cases, despite insufficient analysis, speaks for the possibility of loosening, within the unconscious, the residual, originally fixed libido positions without conscious processing. It is as if the portion of anchored libido liberated in analysis had established itself in reality and paralyzed the indirect satisfaction of still-repressed libido by means of attainment of real satisfaction. It is essential only that liberated libido be strong enough and the remaining repressed libido weak enough to enable this paralyzation to take place.¹⁹⁴

¹⁹¹ Wilhelm Reich, “Weitere Bemerkungen über die therapeutische Bedeutung der Genitallibido.” *Internationale Zeitschrift für Psychoanalyse* 11 (1925): 297-317. Cited in Robert S. Corrington, *Wilhelm Reich: Psychoanalyst and Radical Naturalist* (New York: Farrar, Straus and Giroux, 2003), 45-6.

¹⁹² Reich, “On Genitality,” 158.

¹⁹³ Reich, “On Genitality,” 161.

¹⁹⁴ Reich, “On Genitality,” 164.

His method altogether eliminates the need to delve deeply into psychic structures or psychological questions, and it totally reorients the goals of the analyst. Dream work and talk therapy are no longer primary, the analyst must encourage the patient to go out into the world and have sex.¹⁹⁵ Genital libido was the key, and as long as enough of it could be freed it would restore the balance of the drives leading to a cure.

Ferenczi initially saw Reich as carrying on his own work. In a letter to Freud in April of 1924, he remarks that “Dr. Reich’s suggestions [presented at the eighth psychoanalytic congress in Salzburg in a lecture on “The Therapeutic Significance of Genital Libido”] also have many points of contact with the theory of genitality; certainly Reich is demonstrating himself to be an originally gifted therapist.”¹⁹⁶ Ferenczi continued to attend talks and lectures by Reich, generally exuding positivity.¹⁹⁷ He publicly agreed with Reich’s assertion, “that not only manifest cases of impotence but, so to speak, all cases of neurosis show some disturbance or other of the genital function,” however, he continued to link this to his theory of the amphimixis of anal and urethral activity.¹⁹⁸ Ferenczi would encourage Reich to use the term amphimixis in his own work. For

¹⁹⁵ This often began by freeing the patients’ sexual inhibitions by helping him masturbate without guilt. In fact, it was Reich’s interest in masturbatory practices that led him to become interested in genitality and orgasmic potency in the first place. See Reich, *The Function of the Orgasm*, 57.

¹⁹⁶ “Letter from Sandor Ferenczi to Sigmund Freud, April 26, 1924,” in vol. 3 of *The Correspondence of Sigmund Freud and Sandor Ferenczi* (Cambridge, Mass.: Belknap Press, 2000), 144.

¹⁹⁷ In 1925, however, he did remark that Reich was, “somewhat too fine in his differentiation [“On the Structure and Genesis of Hypochondriacal Neurasthenia”], on the other hand, not clear enough in his conception of the actual- and psychoneuroses.” “Letter from Sandor Ferenczi to Sigmund Freud, September 16, 1925,” in vol. 3 of *The Correspondence of Sigmund Freud and Sandor Ferenczi*, 228.

¹⁹⁸ Sandor Ferenczi, “Psycho-analysis of Sexual Habits,” *International Journal of Psychoanalysis* 6 (1925): 375.

example, in letter responding to Reich's work, Ferenczi concludes with a gentle nudge for credit:¹⁹⁹

Budapest, July 19, 1925

Dear Colleague,

I just read your beautiful work. I find it very stimulating and groundbreaking in many ways. The tendency to more accurately characterize the unclear groups of neurasthenia and hypochondria is, in all circumstances, laudable. Special mention and consideration should be paid to your idea of the pre-genitalization of the genitals, to which I shall surely pay attention. What I have seen of it until now, does not speak necessarily for the primary absence of the genital drive. What you say here about this approaches the view of the pre-analytic conception of a hereditary or congenital (probably anatomically justified) tendency to remain fixed at an inferior level. In principle this possibility is surely there. But your emphasis makes it possible to be prematurely pessimistic, especially considering the tendency of young psychoanalysts to gloss over unresolved technical problems. I hope that you will have success in your attempts to re-awaken interest for this sorely neglected topic. Personally, I would like now to mention to you that your so-called "couplings" and "liaisons" should be brought into a certain relationship with "amphimixis" (or eventually their difference from my concept should be emphasized). Again, I confirm that I consider your work to be valuable and promising.

With regards, yours sincerely,

S. Ferenczi²⁰⁰

Reich ultimately chose not to align his own ideas with Ferenczi's amphimixis. In 1926, Reich made a definitive statement of his rejection:

Ferenczi attempted to explain the process of friction and ejaculation as the result of an amphimixis of anal and urethral drive impulses. Supposedly, ejaculation is a urethral process, and the prolongation of the friction period through retention of semen is an anal one. . . . Ferenczi contends that an equalization of these two tendencies is necessary for normal ejaculative

¹⁹⁹ According to a note in the Wilhelm Reich Archives, Correspondence Box 5, the letter refers to the article "Über die chronische hypochondrische Neurasthenie mit genitaler Asthenie," *Internationale Zeitschrift für Psychoanalyse* 12 (1926): 25–39.

²⁰⁰ Wilhelm Reich Archives, Correspondence Box 2, Folder 16. Translation my own.

potency to develop. *In opposition to this, we must mention that ejaculation is entirely the result of a spinal reflex, which is set into motion through the sensory stimulus of friction.*²⁰¹

Reich was unable to tolerate the theory of amphimixis. Not only because it relied on phylogenetic reasoning, but also because it made use of the concept of partial drives. Reich believed that there was no such thing as partial instincts. He later recollected: “Although Freud had assumed a development of the sexual instinct from a pregenital to a genital stage, this view had become obscured in mechanistic conceptions. These are some of the contentions that were made: every erogenic zone (mouth, anus, eyes, skin, etc.) has a corresponding partial instinct, e.g., the pleasure of looking, the pleasure of being beaten, etc. Ferenczi, indeed, was of the opinion that genital sexuality was made up of pregenital qualities. My observations showed quite clearly that pregenital sexual impulses increased with impotence and decreased with potency.”²⁰² In other words, pregenital sexuality is neurotic. Genitality is not a combination or a balance of partial, pregenital drives, but something opposed to this and completely different.

Similarly, he rejected Ferenczi’s “phylogenetic parallel” which argued that the intrauterine situation itself was a replication of “the type of existence which characterized that aboriginal piscine period” when men were fish, and birth recapitulates the recession of the oceans that caused animals to adapt to a terrestrial existence.²⁰³ In fact, the intrauterine fantasy so prominent in *Thalassa* is thoroughly rejected by Reich. It is seen as the antithesis of sexual health. Of one client, he writes: “The patient fluctuates between

²⁰¹ Wilhelm Reich, *Genitality in the Theory and Therapy of Neurosis* (New York: Farrar, Straus and Giroux, 1980), 156. Emphasis mine.

²⁰² Reich, *The Function of the Orgasm*, 81.

²⁰³ Ferenczi, *Thalassa*, 45.

striving for genital satisfaction, which frightens him, and the intrauterine situation, which is to protect him from the dangers of sexual satisfaction.”²⁰⁴ The intrauterine situation comes up again in reference to blushing and excessive perspiration. Reich asks, “Does an unconscious desire to return to the womb perhaps produce the ‘erection’ at the skin’s surface? Certainly such cannot be the case. It is conceivable only that the vegetative excitation that produced the desire for coitus is not allowed to reach the genitals, due to psychic inhibitions or anxiety, and thus seizes upon the sweat glands.”²⁰⁵

Instead, Reich embraced a concept of sexuality that was more true to the original meaning of Weismann’s amphimixis and that reflected Moll’s idea of contractetation. For Reich, sex was both conjugation and rejuvenation, and successful merger with the object of libidinal interest was the most important aspect of the sex act.

The purpose of sex was the dissolution of ego boundaries and the temporary union of two organisms in a single, living system. Orgasm represented the achievement of this union. Orgastic potency does not imply frequent intercourse but rather the ability to satisfy the “psychic need for love.”²⁰⁶ There are some normative criteria that Reich emphasized throughout his career that characterize orgastic potency and make it healthy: sex is tender and the friction is not excessive in force or speed, there is a mutual and spontaneous surrender of the self, followed by a blurring of consciousness, and gratitude and relaxation (as opposed to disgust and excitement) follow the act.²⁰⁷

²⁰⁴ Reich, *Genitality*, 67.

²⁰⁵ Reich, *Genitality*, 79.

²⁰⁶ Reich, *Genitality*, 47.

²⁰⁷ Reich, *Genitality*, 27.

This led to a very different understanding of female sexuality. For Reich, sex was pleasant for both men and women, provided they were psychologically healthy. Reich did not endorse a concept of women as tolerant but ultimately unsatisfied participants in sex. Of his views on the opposite gender, although Reich does not argue for either a diminished or overactive sexual drive in women, a common practice in pre-feminist sexual science, he sees women as unique in that “the line between orgasmic capability and incapability is very sharply drawn,” whereas in the male it is often confused by orgasm’s closeness to seminal discharge.²⁰⁸

Women are privileged in that they are aware of their orgasms and can use their presence as a yardstick, what evolutionary biologists would later refer to as a self-communicative function.²⁰⁹ On the other hand, men may not even be aware that ejaculation and orgasm are separate functions, and therefore have little insight into the very existence of sexual dissatisfaction. Unfortunately, women are generally more repressed than men because of their upbringing: “In girls, any attempt to find a sexual partner is usually prevented by moral inhibitions, which join with inner inhibitions caused by infantile denial.”²¹⁰ Reich endorsed Freud’s idea of vaginal primacy. Following Freud’s developmental model, Reich identifies the vaginal orgasm as qualitative and quantitatively more healthful than a clitoral one: “Although a clitoral orgasm can relieve gross tensions, it usually occurs under such complex psychic conditions (as, for instance, real situation female, fantasy male) that it cannot replace the

²⁰⁸ Reich, *Genitality*, 19.

²⁰⁹ Daniel Rancour-Laferrriere, “Four Adaptive Aspects of the Female Orgasm,” *Journal of Social and Biological Structures* 6.4 (1983): 319-333.

²¹⁰ Reich, *Genitality*, 116.

economic function of vaginal orgasm. Proof of this is the clearly evident sexual stasis in women who experience only clitoral orgasms.”²¹¹ Frigidity is seen as common in women because of a double sexual standard or penis-envy: “the desire to be a man, which need not prevent satisfaction completely, may well have a disturbing effect on the course of excitation.”²¹²

The ability to surrender is based on genuine transference between a couple based on the ability to transfer the object of fantasy to the partner. This transference is made possible by a resemblance between the original object and the partner that makes unconscious fantasy superfluous:

if transference of sexual interests results merely from neurotic striving for the original object, despite the fact that the partner does not correspond basically with the fantasy object and the inner capacity for genuine transference is lacking, no illusion will eliminate the vague feeling of fraudulence in the relationship.²¹³

Genuine transference is not neurotic because there is no illusion that is maintained during intercourse only to be replaced by the partner when sexual activity ceases. Instead, the original object loses its power over the individual and “is re-created in the partner.”²¹⁴ This sense of being created anew is important because it does not imply a relocation of a fantasy object that retains its former power and modes of relations, but rather a transformation of the relationship between the individual and the object in which “characteristics contrary to those of the original object are recognized and tolerated.”²¹⁵

²¹¹ Reich, *Genitality*, 19.

²¹² Reich, *Genitality*, 31.

²¹³ Reich, *Genitality*, 32.

²¹⁴ Reich, *Genitality*, 33.

²¹⁵ Reich, *Genitality*, 33.

In other words, with each act of genuine transference the individual moves closer to reality. The importance of energetics becomes obvious here:

The more fantasy must be strained to reconcile the partner to the ideal, the weaker sexual pleasure will be in intensity. . . . The greater the fixation on the original object and the incapacity for genuine transference, the greater the expenditure of energy required to overcome the rejection of the real partner, and the sooner the reduction of sexual pleasure will lead to pathological disturbance.²¹⁶

We might then understand the danger of masturbation as implying a descent into fantasy activity: “intercourse with unloved partners is in every respect similar to masturbation; the psychic aims always remain unsatisfied.”²¹⁷

Orgastic potency was a hallmark of and equivalent to healthy genitality, in which libido was not expressed through oral, anal or other bodily zones, nor did it “retreat . . . from a genital position . . . to an intra-uterine fantasy.”²¹⁸ Actual anxiety is present in genitality because it demands an aggressive stance that threatens the ego, but this anxiety “disappears after sexual gratification.”²¹⁹ Neurotic anxiety, on the other hand, cannot be discharged because it represents a malfunction in the psychophysiological mechanism of orgasm, effectively preventing the release of dammed-up libido. This means that orgastic impotency represents the true source of all neuroses, and aggression anxiety and birth anxiety are mere manifestations of somatic libido congestion. As a result, Reich saw the end-goal of psychoanalysis as the achievement of orgastic potency. If the source of all neurosis lay in an inability to discharge actual anxiety through orgasm, restoring the

²¹⁶ Reich, *Genitality*, 33.

²¹⁷ Reich, *Genitality*, 46.

²¹⁸ Wilhelm Reich, “The Sources of Neurotic Anxiety: A Contribution to the Theory of Psychoanalytic Therapy,” *International Journal of Psychoanalysis* 7 (1926): 383.

²¹⁹ Reich, “The Sources of Neurotic Anxiety,” 386.

ability to enjoy sex and achieve discharge was the key to treating neurotic symptoms. This meant that by maintaining a healthy sex life one could prevent neurotic symptoms from ever forming. Orgasm could be a prophylaxis of neurosis.

Reich became enthralled with this idea, and his faith in the therapeutic power of the orgasm began to infiltrate his work and his teaching. Unfortunately, he failed to interest his mentor, Freud, who wrote to him “I have known for a long time that my formulation and conception of the actual neuroses was a superficial one . . . [However,] your whole conception of displaced genital libido is still not palatable to me.”²²⁰ A little over a year later, Reich would present Freud with a manuscript of *Die Funktion der Orgasmus* for his birthday in 1926. Freud purportedly rejected the manuscript, asking Reich, “So thick?”

A more nuanced reaction came in the form of a letter dated 9 July 1926, where Freud complimented Reich, “I find the work valuable, rich in observation and thought . . . But I also do not wish to conceal from you the fact that your work is too copious, is not clearly constructed, and hence is confusing. I believe it contains material for several concisely arranged works.”²²¹ Despite this encouraging correspondence, Reich experienced a life crisis in response to Freud’s perceived criticism and found himself at a sanatorium in Davos, recovering from the same tuberculosis that had now claimed both his father and his brother’s life. Ever the father figure, Freud communicated his concern about Reich’s financial inability to continue extended treatment at Davos on 8 February to a female physician, “Dr. M.M.O.,” requesting, “should you be in the position to send a

²²⁰ Freud to Reich, 7 June 1925. Wilhelm Reich Archives, Correspondence Box 2, Folder 5.

²²¹ Freud to Reich, 9 July 1926. Wilhelm Reich Archives, Correspondence Box 2, folder 5.

neurotic to Davos to begin or continue analytics treatment or if you know some patient in Davos, please don't forget Reich."²²²

As for the relationship between Reich and Ferenczi, it remained for the most part amicable, despite their theoretical disagreements. Sharaf observes that "Ferenczi . . . thought highly of Reich. On his trips to the United States, he recommended Reich as an analyst to Americans planning to study psychoanalysis in Vienna. As a result, a number of analytic candidates from the United States, including Walter Briebl, M. Ralph Kaufman, O. Spurgeon English, and John Murray, were analyzed by Reich or supervised by him during the 1920s."²²³ Ferenczi continued to praise and endorse Reich until 1928, despite any disagreement about genitality or the meaning of the orgasm. He even refers to "orgastic potency" in a 1930 essay.²²⁴

The general acceptance that Reich continued to receive as he advocated for his own theory of orgastic potency, which completely rejected recapitulationist speculation and reduced all of Freud's hard work elaborating the history and function of the libido to the simple experience of orgasm, suggests that there was relative freedom and flexibility within the psychoanalytic movement at this time. Reich's obsession with the orgasm and his willingness to discredit his senior analysts may have been irksome, but it was certainly tolerated. Indeed, this was a point in time where it seemed like almost everyone was breaking with Freud.

²²² Wilhelm Reich Archives, Correspondence, Box 2, folder 4.

²²³ Sharaf, *Fury on Earth*, 81.

²²⁴ "The Principle of Relaxation and Neocatharsis," *International Journal of Psychoanalysis* 11 (1930): 439.

The next chapter deals with Reich's radicalization and his subsequent political objections to psychoanalytic theory. It is Reich's turn towards Marxism in 1927, and his subsequent rejection of Freud's death drive, not his orgasm theory, that marks the major source of discontentment within the psychoanalytic community.

Chapter 2:
From Revolutionary Power of the Orgasm

Revolution = expansion of life
Reaction = suppression of life¹

Work at the Vienna Psychoanalytic Polyclinic

On 2 May 1922, the Vienna Psychoanalytic Polyclinic, called the “Ambulatorium,” was opened with the assistance of Eduard Hitschmann. According to Elizabeth Ann Danto, who has written a monograph on the subject, some innovations of the free clinics “included length-of-treatment guidelines, fractionary (time-limited) analysis, and, of course, free treatment.”² Reich began working for the Ambulatorium a few months after marrying his first wife, Annie Pink, becoming the assistant director in 1924.³ It was primarily through his work at the Ambulatorium that Reich became aware of the role of sexual repression in the formation of neurosis.⁴

Work at the clinic was highly influential for Reich. Through his involvement he was introduced to Clare Nathanssohn, a mind-body therapeutic worker, who Danto posits influenced Reich’s later orgone therapy.⁵ Perhaps his later interest in electrophysiology was spurred by the location of the clinic at the ambulance entrance to the Clinic for Heart Diseases in the Allgemeines Krankenhaus.⁶ This may be where Reich first learned of the

¹ Wilhelm Reich Archives, Personal Box 5a, 54.

² Elizabeth Ann Danto. *Freud’s Free Clinics: Psychoanalysis and Social Justice, 1918-1938* (New York: Columbia University Press, 2005), 3. See also, Arnold Richards, “Freud’s Free Clinics: A Tale of Two Continents,” *Psychoanalytic Review* 100.6 (2013): 819-38.

³ Christopher Turner, *Adventures in the Orgasmatron: How the Sexual Revolution Came to America* (New York: Farrar, Straus and Giroux, 2011), 59.

⁴ Christine Diercks, “The Vienna Psychoanalytic Polyclinic (‘Ambulatorium’): Wilhelm Reich and the Technical Seminar.” *Psychoanalysis and History* 4.1 (2002): 66-84.

⁵ Danto, *Freud’s Free Clinics*, 41.

⁶ Danto, *Freud’s Free Clinics*, 90. Reich describes the clinical setting in *The Function of the Orgasm* (New York: Farrar, Straus and Giroux, 1973) as follows: “We moved into a few rooms in the cardiac ward of

work of Friedrich Kraus, whose work he would review for the *Internationale Zeitschrift für Psychoanalyse* in 1927.⁷ Only physicians were allowed to practice within the hospital—patients were the only lay people granted permission inside the Ambulatorium.

Danto describes the atmosphere as follows:

The ambulance section of the Herzstation had rooms already equipped with soundproof doors, an arrangement compatible with the Ambulatorium's need for patient privacy and confidentiality. The four consulting rooms, which could be used only in the afternoon, were rented. A hall, of large conference room, was also made available and rented for evening meetings of the Ambulatorium staff.⁸

Space and treatment rooms were limited even when analysts treated some clinic patients in their home-based offices. Their shared medical consulting rooms now had to meet a dual set of needs, the psychoanalysts' need for privacy and the Herzstation cardiologists' need for tranquil space. . . . These were stark surgical offices where the couch was a metal examination table and the analytic patients had to climb up a movable step ladder to reach the table top, then lie down on the thin springless mattress. . . . their analyst sat angled behind the table on a simple bentwood chair without armrests.⁹

Staff members were made up of the second generation of psychoanalysts, “the young, politically aware analysts favored by Freud to oversee the growth of the psychoanalytic movement with their publications, clinics, and training institutes.”¹⁰ It

Kaufman and Meyer. Six months later, an injunction was issued against our continuation. And so it went, back and forth, because the medical authorities did not know what to make of it. Nor did it fit into the framework of their thinking,” 74.

⁷ In 1890, Kraus began work as an assistant at the Allgemeines Krankenhaus, later becoming an assistant professor at the University of Vienna. Isidore Singer and Edgar Mels, “Kraus, Friedrich,” *Jewish Encyclopedia: The Unedited Full-text of the 1906 Jewish Encyclopedia*, accessed 19 February 2016, <http://www.jewishencyclopedia.com/articles/9501-kraus-friedrich>. For Reich's book review: “Book Review: Allgemeine und spezielle Pathologie der Person, klinische Syzygiologie, by Fr. Kraus.” *International Zeitschrift für Psychoanalyse* 13.3 (1927): 338-339.

⁸ Danto, *Freud's Free Clinics*, 92.

⁹ Danto, *Freud's Free Clinics*, 99.

¹⁰ Danto, *Freud's Free Clinics*, 94.

became customary for analysts to pay for their training through work at the Ambulatorium, and patients were plentiful. Danto writes: “Eventually all analysts treated gratis at least one-fifth of their practice, an unspoken custom shared by even the most accomplished doctors in Vienna.”¹¹ Even Freud saw patients for free. A voucher (*Erlagschein*) system was developed in which analysts could be personally reimbursed in exchange for time spent treating one of these patients. Vouchers from Sigmund Freud, endorsed to the Vienna Ambulatorium from 1931–33, are available in the Archives of the Boston Psychoanalytic Society and Institute and reprinted in Danto’s book. She writes that these vouchers “looked like beautiful old silks . . . perhaps the surviving artifacts of the vanished civilization of Red Vienna.”¹²

Reich’s interest in sexuality blossomed during this period, as did his recognition within the psychoanalytic community. Reich was one of the brightest and most talented students. Danto praises: “Only twenty-two years old and barely graduated from medical school, the impassioned Wilhelm Reich assumed the position of first assistant chief to Eduard Hitschmann at the Ambulatorium in 1924.”¹³ His responsibilities, in this capacity, included, “interviewing and examining all prospective patients, sending off the ones he suspected of having a physical rather than a psychosomatic illness for X-rays and blood tests, and assigning the rest to an analyst.”¹⁴ He was also able to review his colleagues data, “and could incorporate in his [own] study information from the weekly written summaries his colleagues were required to submit to him . . . ; statistics were collected on

¹¹ Danto, *Freud’s Free Clinics*, 97.

¹² Danto, *Freud’s Free Clinics*, 98.

¹³ Danto, *Freud’s Free Clinics*, 137.

¹⁴ Turner, *Adventures in the Orgasmatron*, 67.

410 individuals, 72 of them Reich's own patients."¹⁵ It was during his service as deputy medical director (1924–30) that Reich became aware of what he considered to be the remarkably low success rate of psychoanalytic treatment. According to him, not only was access to psychoanalytic help economically contingent, but even if the existing social structure allowed the majority of its members to engage in individual therapy the expected success rate would be low.

As Reich's family grew (his first daughter, Eva, was born on 27 April 1924 and his second daughter, Lore, in 1928), so did his professional responsibilities.¹⁶ From 1924–30 he taught a seminar on technique for training analysts.¹⁷ As a leader among this second generation, Reich influenced countless analysts. Danto records: "The idea for the Technical Seminar, as it was to be called, first occurred when Freud suggested that his bright pupil Wilhelm Reich take a practical step toward systematizing clinical supervision at the Ambulatorium."¹⁸ As a teacher and seminar leader, Reich was a great success.¹⁹ He was highly regarded, perhaps beloved by Freud, who at this time still maintained control over the psychoanalytic community as a whole.

From 1927, Reich became increasingly pre-occupied with his own "sexual political" work, putting increasing strain on his relationship with Freud. He would christen his movement "Sex-pol." The Sex-pol movement began as a response to the

¹⁵ Turner, *Adventures in the Orgasmatron*, 79.

¹⁶ Turner, *Adventures in the Orgasmatron*, 83.

¹⁷ Lore Reich Rubin, "Wilhelm Reich and Anna Freud: His Expulsion from Psychoanalysis," *International Forum of Psychoanalysis* 12 (2003): 109.

¹⁸ Danto, *Freud's Free Clinics*, 100.

¹⁹ Ola Raknes, *Wilhelm Reich and Orgonomy: The Controversial Theory of Life Energy* (Baltimore: Pelican, 1970), 62.

needs of left-wing youth for answers to sexual questions. In 1928 he founded the Socialist Association for Sex-counseling and Sex-research for the working class in Vienna. Clinics operated out of vans and provided free advice about sexual matters, distributed pamphlets, and offered political talks by Reich. According to Danto, “Reich saw himself literally rushing to the rescue and divulged his plans to Freud despite the increasing tension in their relationship. Apparently, Freud more than encouraged Reich to move forward with this community work.”²⁰

Unfortunately, concerns arose when Reich began to devote increasing amounts of time to his Sex-pol project. It was simply not possible for him to manage so many responsibilities: private practice, Technical Seminar, work at the Ambulatorium, and sex counseling centers. The Ambulatorium was overwhelmed and began to turn away patients.²¹ By 1929, Reich had opened 6 Sex-pol clinics and was engaging the help of fellow analysts, including his own wife, Annie.²² According to Danto, as Reich’s commitment to communism deepened over the next few years, he switched to “a more flamboyant rhetoric that would eventually alienate some of his closest friends.”²³

Reich felt that education and the family were destructive to the establishment of a healthy, liberated genitality. The desire to return to the womb and other important aspects of Ferenczi’s genitality became merely symptoms of a failure to achieve independence.

²⁰ Danto, *Freud’s Free Clinics*, 198. It should be noted that sexual scientists generally felt a certain antagonism for capitalism. The World League for Sexual Reform, for example, devoted itself to the mission of “counteracting capitalism, alcoholism, and the dysgenic effects of war.” See Kevin S. Amidon, “Sex on the Brain: The Rise and Fall of German Sexual Science,” *World Languages and Cultures Publications* (2008), Iowa State University Digital Repository, <http://lib.dr.iastate.edu/repository/>.

²¹ Danto, *Freud’s Free Clinics*, 199.

²² Danto, *Freud’s Free Clinics*, 208.

²³ Danto, *Freud’s Free Clinics*, 226.

Reich also came to sharply disagree with Freud on many points, including: 1) the Oedipus complex because he believed that it was not a universal, phylogenetic heritage that caused difficulties in the parent child relationship but rather a sexually oppressive upbringing unique to capitalist (and proto-capitalist societies); 2) as a result he saw Freud's turn away from a sexual etiology of anxiety as a retreat from a known truth and a capitulation to a bourgeois moral order (for Reich, sexual repression could cause anxiety, but anxiety could never be the cause of sexual repression); 3) Freud's death drive (*Todestrieb*) came to be a major sticking point for Reich, who thought it displayed resignation and defeat in the face of both repressive social forces and the clinical challenges presented by the neuroses. (We might remark that in many ways he saw this resignation as characteristic of psychoanalysis as a whole, especially in the face of Austro-fascism.) To admit the death drive existed was to accept that there would never be a cure for mental illness.

As we shall see, Bernfeld was just one among many who became increasingly dismayed by Reich's publications. All of this political momentum would culminate in Reich's expulsion from the International Psychoanalytic Association in 1934.

The Turn to Communism: Sex-pol

Praised by historians as a "lasting contribution to Marxism,"²⁴ Reich's Sex-pol is also noteworthy for being one of the few aspects of his philosophy that enjoys

²⁴ Anson G. Rabinbach, "The Politicization of Wilhelm Reich: An Introduction to 'The Sexual Misery of the Working Masses and the Difficulties of Sexual Reform,'" *New German Critique* 1 (1973): 90.

widespread acceptance in the academic community.²⁵ Reich's political sentiments were also appreciated early on by many of his fellow psychoanalysts. There was a basic similarity between psychoanalysis and Marxism. Arnold Richardson notes that "psychoanalysis was a treatment, but it was also part of a larger social project. Vienna at that time was in the midst of a huge political experiment. . . . There was a socialist zeitgeist, and psychoanalysis was not immune."²⁶ The similarity between the works of Freud and those of Marx had been pointed out as early as March 1909, when Alfred Adler gave a lecture that connected the theory of class struggle to the psychoanalytic doctrine of drives.²⁷ Whether or not individual analysts were in full agreement with this statement, and Freud certainly was not, the goals of the two ideologies remained close at their core.²⁸ The connection between the two disciplines has been enumerated by many

²⁵ For example, Herbert Marcuse's *Eros and Civilization* (1955) was influenced by and heavily endorses Reich's sex political agenda. See: Turner, *Adventures in the Orgasmatron*, 394. Similarly, Reich's *The Mass Psychology of Fascism* (1933) influenced Eric Fromm's derivative but far better known *Escape From Freedom* (1941). In *Mass Psychology*, Reich "interpreted the basic personality of the German lower-middle classes as authoritarian characters, people who needed to replicate the domination of the home by means of the domination of state and politics." See: Norman Levine, "Wilhelm Reich: Culture as Power," *History of European Ideas* 5.3 (1984): 277. In the United States and Europe, many goals of Reich's Sex-pol were achieved – sexual politics were the motivating force behind the sexual revolution of 1960s America. See: David Bennett, "Sexual Revolutions: Towards a Brief History, from the Fall of Man to the Present" and Nick Totten, "Wilhelm Reich's Theory of Sexuality," in *Sexual Revolutions: Psychoanalysis, History and the Father*, ed. Gottfried Heuer (New York: Routledge, 2011). Other scholars remain quite critical. Notably, Howard Press refers to Reich's work as "the ultimate bourgeois reduction of organic life." See: "The Marxism and Anti-Marxism of Wilhelm Reich," *Telos* 9 (1971): 76.

²⁶ Arnold Richards, "Freud's Free Clinics: A Tale of Two Continents," *Psychoanalytic Review* 100.6 (2013): 822.

²⁷ David Pavón-Cuellar, "The Freudo-Marxist Tradition and the Critique of Psychotherapeutic Ideology," *Psychotherapy and Politics International* 12.3 (2014): 211. Psychoanalysis and Marxism are presented in a recent volume as the two systems of thought that define the twentieth century, see Warwick Anderson, Deborah Jenson, and Richard C. Keller, eds. *Unconscious Dominions: Psychoanalysis, Colonial Trauma, and Global Sovereignities* (Durham, NC: Duke University Press, 2011), 113.

²⁸ "Freud saw the erotic needs of individual sexuality as being in tension with the claims of society and the state. He viewed sexual love as having no place among the social emotions, explicitly presenting the self-sufficient dyad of two people in love as an anti-group constellation." Peter Loewenberg, "Sexual Morality and the Clinical Situation," in *Rediscovering History: Culture, Politics, and the Psyche*, ed. Michael S. Roth (Stanford: Stanford University Press, 1994), 65.

scholars, and continues to be a pertinent issue today. Páramo-Ortega comments on the similar goals of the two ideologies: “In the case of Marxism . . . to transform radically all the relations where man is humiliated, enslaved, abandoned, and/or debased. The psychoanalytical counterpart would be to increase the capacity to work and love through a conscience that is as free as possible from individual and social determinants.”²⁹

Richards points out, however, that “Austro-Marxists . . . were not communists, however—they were seeking a middle ground between social democracy and communism . . . and this fact ultimately gave rise to political differences within the psychoanalytic community.” Sharaf remarks that ideologically speaking, “Reich’s central difference with Freud was his Marx-like belief that man is naturally good unless social conditions make him otherwise.”³⁰

In order to understand the essence of Reich’s political work, it is necessary to return to the moment he identifies as the most important in his intellectual and political development: when police shot and killed dozens of workers protesting in Schattendorf on 15 July 1927.³¹ This event is important because it shaped the form that the Reich’s political beliefs would take until the end of his life. To summarize briefly, on 30 January 1927 members of the Christian Socialist³² paramilitary (the *Heimwehr*) opened fire on an

²⁹ Raúl Páramo-Ortega, “Hinging Concepts: Between Marxism and Psychoanalysis.” *Psychotherapy and Politics International* 12.3 (2014): 198.

³⁰ Richards, “Freud’s Free Clinics,” 823.

³¹ Myron Sharaf, *Fury on Earth: A Biography of Wilhelm Reich* (New York: De Capo Press, 1994), 124. He lists eighty-nine people dead and over a thousand wounded. Rabinbach gives eighty-five dead and hundreds injured, 91. David Clay Large presents an excellent overview of this “Bloody Friday” in *Between Two Fires: Europe’s Path in the 1930s* (New York: Norton, 1990), 65–74. Other witnesses to the events described it as “mass psychosis,” 69.

³² Although this group is referred to as Christian Socialists in the published English translations of Reich’s work, a more accurate rendering would be “Christian Socials,” as they did not represent socialist values.

unarmed group of Social Democrats. Although there were casualties, the accused were acquitted on July 14, sparking a riot that culminated in the burning of the Palace of Justice the following day. The mob activity developed into an armed uprising, but the Social Democrats ordered their own militia (the *Schutzband*) to return to the barracks and avoid confrontation. In the eyes of many spectators, including Reich, the SDAP had passed up an obvious opportunity for armed insurrection, reneging on their revolutionary promises. They had also failed to protect the people they purported to represent.

The senseless violence was shocking. In his recollections, Reich describes the scene as follows:

I saw no capitalists on the street, only thousands and thousands of workers in and out of uniform, women, children, physicians, and spectators. The indelible impression remained that *people were warring here with their own kind*. . . . Was this class conflict? Within the same class? In a city administered by Socialists? Here for the first time those misgivings arose concerning the irrationalism of politics in general.³³

Reich identified oppressive class ideology as the source of the emotional irrationalism he witnessed in Schattendorf. Already a member of the SDAP, in spite of his skepticism about the effectiveness of party politics, Reich began promoting his own sex-economic agenda within their ranks.³⁴ Shortly after this incident, he also joined the Communist Party of Austria (KPÖ). His ideas, like the need for good housing, were common at the time and a top priority of the new Viennese government.³⁵

(Thank you to Philip Bennett for first pointing this out.) In fact, the translation Christian Social is often used in academic writing. See, for example, Large, *Between Two Fires*, 62.

³³ Wilhelm Reich, *People in Trouble* (New York: Farrar, Straus and Giroux, 1976), 91. Originally published in 1953 as *People in Trouble (The Emotional Plague of Mankind, Vol. II)*. Emphasis original.

³⁴ See *People in Trouble*, 30–31.

³⁵ Kimberly DeFazio discusses the housing question in “Red Vienna, Class, and the Common,” in *Marxism and Urban Culture*, ed. Benjamin Fraser (New York: Lexington, 2014), 159–87.

This growing recognition of the importance of private everyday life to politics shaped the policies of the SDAP between 1920 and 1934, allowing sexuality to play a key role in revolutionary activism. As Helmut Gruber put it in 1987, “at the core of the workers’ private sphere, lie the emotional resources that have made it possible for them to express their selfhood at the workplace and to respond to the most oppressive aspects of wage labor.”³⁶ Following this logic, improvements in workers’ private lives will lead to an increase in the amount emotional energy available for cultural struggle.

According to Reich, “we recognize the root of spiritual mass illness [*seelischen Massenerkrankung*] when we re-examine the question of the social organization of sexual life.”³⁷ Reich’s Sex-pol project was part of a larger effort to address the sexual problems that plagued the masses and to provide the working class, especially youth, with sexual counseling and psychoanalysis.³⁸ Although Reich’s clinics became an important source of information on working class culture and appear to have been relatively popular, they were not endorsed by the SDAP. As historians have noted, socialist parties throughout Europe tended to be far less radical than is often assumed. Even though the topic of sexual enlightenment became the focus of a second *Kulturkampf* against the Catholic Church, the SDAP programs targeting children and youth that became the main focus of countercultural activities were ideologically quite similar to those held by the opposition.³⁹

³⁶ Helmut Gruber, “Sexuality in ‘Red Vienna’: Socialist Party Conceptions and Programs and Working Class Life, 1920-34,” *International Labor and Working-Class History* 31 (1987): 37.

³⁷ Wilhelm Reich, *Die Sexualität im Kulturkampf: Zur sozialistischen Umstrukturierung des Menschen* (Copenhagen: Sexpol-Verlag, 1936), viii.

³⁸ Karl Fallend, *Wilhelm Reich in Wien: Psychoanalyse und Politik* (Wein: Salzburg, 1988), 115.

³⁹ Gruber, “Sexuality in ‘Red Vienna,’” 48.

Roderick P. Neuman sums up the socialist position best in his description of the German SDAP:

in spite of their attacks on traditional sexual morality and marriage they in fact shared many of the most widespread and repressive sexual misconceptions of their time and . . . they helped to spread these misconceptions through their writings, thereby encouraging their supporters to find an answer to the sexual question in the sublimation of the sexual drive and in that eminently bourgeois institution, monogamous marriage.⁴⁰

Encouraging premarital chastity and the sublimation of adolescent sexuality were key goals of SDAP youth initiatives, and it was a widely accepted fact that the proletariat was *lacking* in sexual repression.⁴¹ Indeed, the party preferred the theories of the sexually conservative Julius Tandler (1839–1936) to the sexual politics of Reich, who argued that the workingman was in desperate need of sexual liberation. Tandler published on the prevention of moral and sexual decay, and he opened his own Marriage Consultation Clinic in 1922. Unlike Reich, Tandler did not favor freedom of sexual expression, nor did he believe in providing contraceptives to the working class. He emphasized a top-down, controlled reform of sexuality that would take place through the manipulation of living conditions. His clinic closed in 1927 due to lack of clients.⁴²

Just as the party refused to support the clinics Reich founded shortly after Tandler's failed experiment (and most likely modeled on the more successful clinics operating in Berlin at that time), so too did the party refuse to endorse his views on

⁴⁰ R.P. Neuman, "The Sexual Question and Social Democracy in Imperial Germany," *Journal of Social History* 7.3 (1974): 272.

⁴¹ J. Robert Wegs, "Youth Culture, Sex, and Marriage," in *Growing Up Working Class: Continuity and Change Among Viennese Youth, 1890-1938* (University Park: Pennsylvania State University Press, 1989), 117-138.

⁴² Gruber, "Sexuality in 'Red Vienna,'" 41.

sexual politics. While Reich's ultimate goal was the destruction of the patriarchal family and the sexual liberation of youth through education and access to prophylactics, Sex-pol's official platform explicitly targeted heterosexual couples and was not unlike other European sex reform movements such as the World League for Sexual Reform (of which Reich was a member and lecturer), making it rather difficult to comprehend the SDAP's vehement opposition.

The primary tasks of Sex-pol are enumerated by Eustace Chesser as:

- (1) Better housing for the masses.
- (2) Abolition of laws against abortion and homosexuality.
- (3) Reform of marriage and divorce laws.
- (4) Free birth control advice and contraception.
- (5) Health protection for mothers and children.
- (6) Nurseries in factories and other working centres.
- (7) Abolition of laws prohibiting sex education.
- (8) Home leave for prisoners.⁴³

Reich's membership in the Social Democratic party would prove to be short lived—early on he joined a pro-Communist splinter faction called the *Komitee Revolutionärer Sozialdemokraten* and began publishing a newspaper critiquing the party line, leading to his expulsion on 8 January 1930.⁴⁴ The following year, the German Communist Party (KPD) “agreed to underwrite his sex-political organization.”⁴⁵ Only two years later, the tides had turned. In 1931, Reich circulated a manuscript for youth that dealt with sexual matters. It was well-received and passed on to the Moscow Youth Executive Committee of the Comintern for printing, with a working title of “Sexual Vitality: A Right of Youth” (*Sexuelle Lebensfreude – ein Recht der Jugend*). Reich ended

⁴³ Eustace Chesser, *Reich and Sexual Freedom* (London: Vision Press, 1972), 11.

⁴⁴ Rabinbach, “The Politicization of Wilhelm Reich,” 95.

⁴⁵ Danto, *Freud's Free Clinics*, 225.

up self-publishing the work in June of 1932 as “The Sexual Struggle of Youth” (*Der sexuelle Kampf der Jugend*) after the official publication of his book had been “successfully sabotaged behind the scenes.” The KPD banned (*geächtet*) the book, despite positive reviews. The situation quickly escalated, and the communist youth groups splintered into factions. A new youth group was established at the KPD conference in mid-October of 1932, and they undertook a public criticism of Reich. Reich was dismissed from his post as a sexual political leader (*Reichsleiter*) in December of 1932, in what was most likely a party expulsion procedure. An “anti-Reich” resolution, which declared Reich’s writings to be “completely un-Marxist” passed on 29 January 1933 with 39 votes to 32. A new resolution was passed a few weeks later against “sex organizations.”⁴⁶

After his migration to Berlin in 1930, Reich began to focus even more intensely on the issue of adolescent sexuality. He argued: “Young people have more than a simple right to ‘information,’ they have a full right to their sexuality.”⁴⁷ Unfortunately, “parents suppress the sexuality of small children and adolescents, not knowing that they are doing so at the behest of authoritarian, mechanized society.”⁴⁸ Suppression of sexuality was a form of social control. “In reality, only one attitude and only one kind of social and moral arrangement is threatened by the elucidation of the function of life, namely the authoritarian dictatorial regime of every kind which seeks through compulsive morality and compulsive work to destroy the spontaneous decency and natural self-regulation of

⁴⁶ This information comes from the German publication by Andreas Peglau, *Unpolitische Wissenschaft? Wilhelm Reich und die Psychoanalyse im Nationalsozialismus* (Giessen: Psychosozial-Verlag, 2013).

⁴⁷ Wilhelm Reich, *The Sexual Struggle of Youth* (London: Socialist Reproduction, 1972), 10.

⁴⁸ Reich, *The Function of the Orgasm*, 198.

the vital energies.”⁴⁹ The publication of *Der sexuelle Kampf der Jugend* by Reich’s own press in 1932 was an attempt to make questions of sexuality accessible to the masses, providing them with the necessary information to come to their own conclusions and make their own steps towards revolution. Although the publication received favorable reviews from the *Red Fan* and the *Viennese Red Flag*, as well as *Berlin am Morgen*, it did not sit well with many high level party members and the book was removed from party bookstores.⁵⁰ Although ostensibly Reich’s work was criticized for suggesting that an idealized proletariat suffered from sexual stasis, Reich shares the opinion of later historians that, like the SDAP, the primary reason the Communists avoided the youth crisis was because issues of sexuality were too emotionally charged.⁵¹

Reich is said to have seen “sexual failure . . . as a consequence of capitalist social corruption . . . [He was] a utopian who [saw] nature as gentle, harmonious, rhythmic, orgasmic.”⁵² His sexual-political ideology necessitates some sort of state intervention in the early stages of what he later termed “the biosexual revolution of mankind.”⁵³ Reich preferred his political message to be transmitted through education not party politics (a vestige of socially alienated life). During a sexual revolution, the content of sexual education would no longer be decided by parents, but would be carried

⁴⁹ Reich, *The Function of the Orgasm*, 11.

⁵⁰ A notice about the removal was published in the December 5, 1932 issue of *Red Sport*, leading to protest. Fritz Bischoff and Rudolf Schneider were thought to be behind the primary forces acting against Reich behind the scenes. See Peglau, *Unpolitische Wissenschaft?*

⁵¹ Gruber, “Sexuality in ‘Red Vienna,’” 44.

⁵² Daniel Fuchs, “Wilhelm Reich,” *The Limits of Ferocity: Sexual Aggression and Modern Literary Rebellion* (Durham: Duke University Press, 2011), 40.

⁵³ Wilhelm Reich, “The Silent Observer.” Republished in: *Orgonomic Functionalism 2* (Rangeley: The Wilhelm Reich Infant Trust Fund, 1990), 33.

out according to sex-economic principles. This is because the family is the very source of sexual repression.⁵⁴ Although authoritative intervention would be necessary at the earliest stage, Reich felt that over-identification with the nation or with a political ideology was evidence of emotional illness. He hoped that by developing new educational methods that targeted children, especially infants, it would be possible to create a society populated with individuals capable of self-government and cooperative work, eventually eliminating the need for political parties or nation-states. This is the meaning of the constant reference to infants and to the children of the future in Reich's publications.⁵⁵ Figure 2.1, below, illustrates Reich's view of the impact of society on the character structure of human beings.

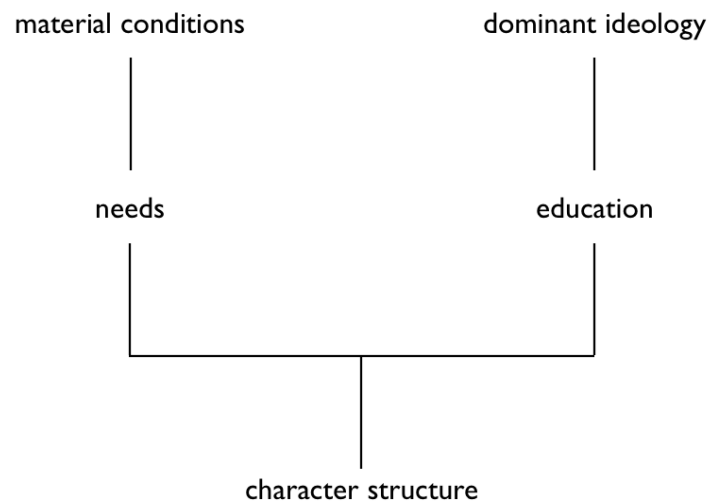


Figure 2.1: Mapping the sexual economy and its influence on the character structure of human beings. (Diagram created by author).

⁵⁴ Freud was not in disagreement about the fact that the family caused neuroses. As quoted in Patricia Cotti, "Sexuality and Psychoanalytic Aggrandisement: Freud's 1908 Theory of Culture," *History of Psychiatry* 22 (2010): 62–63: "A neurotic wife who is unsatisfied by her husband is, as a mother, over-tender and over-anxious towards her child, on to whom she transfers her need of love; and she awakens it to sexual precocity. The bad relations between its parents moreover, excite its emotional life and cause it to feel love and hatred to an intense degree while it is still at a very tender age. (*SE*, 9: 202)"

⁵⁵ See, for example: Wilhelm Reich, *Children of the Future: On the Prevention of Sexual Pathology* (New York: Farrar, Straus and Giroux, 1967).

Reich was one of several pioneers who advocated free sexuality for Viennese youth, rejecting the notion that abstinence was necessary for cultural achievement. He believed that genital rights were human rights; it made little sense to him that certain individuals in society had access to condoms or abortion and others did not. Although his focus on adolescent sexuality branded him radical enough to warrant dismissal from the SDAP and the Communist Party, and eventually from the International Psychoanalytic Association (IPV), Reich's ideas were firmly situated in his social milieu.

Vienna had long been a major center for sexological research and as Britta McEwen notes:

Whereas *fin-de-siecle* Viennese sexology had sought to classify and heal individuals as a medical science, sexual knowledge in the interwar years was employed to heal the social body: the truncated, diseased, and impoverished population of the newly-created Republic of Austria. This shift refocused sexual knowledge away from sexological taxonomies of aberrant sexual behaviours and towards advising heterosexual, reproductive couples, whom numerous social reform movements targeted as central to the regeneration of society.⁵⁶

Although Reich originally admired the Soviet Union and based his original Sex-pol platform on the Soviet model, in the failure of the October Revolution he found confirmation of his belief that sexual education must accompany (if not precede) a communist revolution in order to provide the masses with the psychological character necessary to enjoy liberation. A sexually oppressive education during adolescence anchored the negative character traits associated with pleasure anxiety

⁵⁶ Britta McEwen, "Purity Redefined: Catholic Attitudes Towards Children's Sex Education in Austria, 1920-36," in *Shaping Sexual Knowledge: A Cultural History of Sex Education in Twentieth Century Europe*, ed. Lutz D.H. Sauerteig and Roger Davidson (New York: Routledge, 2009), 161.

(authoritarianism, lack of productivity) so deeply in the human organism that the ability to take responsibility for one's actions and the appreciation of freedom became all but impossible. "Sexual suppression has the function of making man amenable to authority, just as the castration of stallions and bulls has the function of producing willing draft animals."⁵⁷ Thus, in a revolution the "material barriers to freedom might be removed but the emotional bonds remained."⁵⁸ In other words, the population fails to psychologically adapt to a new material reality.

In order to ensure the success of a political revolution, it is necessary to prepare the people psychologically and physiologically. This is only possible by providing them with the knowledge necessary to make informed sexual choices, supplying prophylactics and abortion to adults and minors, and creating private spaces in which to copulate. Sex education became an essential aspect of revolution, because "the human being will react in all other life situations just as he has learned or was forced to react in his childhood or puberty to his sexual urges."⁵⁹ If the masses are unaware of their sexual needs they will waste energy in unproductive work (analogous to, for example, unrequited love) and enact their individual sexual struggles in the political realm,

⁵⁷ Reich, *The Function of the Orgasm*, 224.

⁵⁸ Chesser, *Reich and Sexual Freedom*, 21.

⁵⁹ Wilhelm Reich, "The Evasiveness of Homo Normalis." Republished in: *Orgonomic Functionalism 3* (Rangeley: The Wilhelm Reich Infant Trust Fund, 1991), 79.

leading to reactionary phenomena.⁶⁰ A good example of this concept is the political sex scandal.⁶¹

As Mark Schechner notes, “Sex, for Reich, *was* politics, and the contentious language of his manifestos, with its military metaphors of blocks and breakthroughs, made his system sound less like a retreat from the blows of history than a regrouping for a war of liberation . . .”⁶² Sex-pol is based in the conviction that sexuality (libido) *itself* is productive life-energy.⁶³ Authoritative institutions have a vested interest in restricting sexuality because “sexual repression uses up much bioenergy which otherwise would manifest itself intellectually and emotionally in a rational manner.”⁶⁴ Perhaps less controversial today, assertions like this helped cement Reich’s expulsion from the IPV in 1934.⁶⁵ After all, Freud argued that the sublimation of instinct was necessary for cultural development: evolution was a civilizing process and it was the energy generated by repressing the primary drives that fueled great achievements.⁶⁶

⁶⁰ Wilhelm Reich, *The Invasion of Compulsory Sex-Morality* (New York: Farrar, Straus and Giroux, 1971), 19.

⁶¹ Interestingly, what Reich proposes here is something he would be accused of by later historians: that the individual makes political choices and develops political ideology based on everyday social life. See: Siegfried and Johannes Nicolas Zepf, “Wilhelm Reich – ein blinder Seher?; Wilhelm Reich – A Blind Seer? A Late Addendum to his 100 Anniversary,” *Forum Der Psychoanalyse* 26.1 (2010): 71-86.

⁶² Mark Schechner, “From Socialism to Therapy, II: Wilhelm Reich,” in *After the Revolution: Studies in the Contemporary Jewish American Imagination* (Bloomington: Indiana University Press, 1987), 93. Emphasis original.

⁶³ Reich, *Die Sexualität im Kulturkampf*, ix.

⁶⁴ Reich, *People in Trouble*, 165.

⁶⁵ Wilhelm Reich, “Der Ausschluss Wilhelm Reichs aus der Internationalen Psychoanalytischen Vereinigung,” *Zeitschrift für politische Psychologie und Sexualökonomie* (1935): 2.

⁶⁶ Sigmund Freud, *Civilization and its Discontents* (1930).

Of course, Reich saw himself as the staunchest promoter of true psychoanalytic values. Rycroft reminds us that “Reich conceived himself to be defending Freud’s original revolutionary insights against a loss of nerve and hope on Freud’s part.”⁶⁷ He identified several problems with Freud’s theory, most notably that human beings do not function mechanically and libidinal energy does not operate as a type of fuel that if consumed in sexual pursuits is no longer available for cultural sublimation.⁶⁸ He argued that sexual satisfaction and cultural achievement could be compatible. Libidinal energy oscillates between productive work and sexual release and the force of libidinal energy increases with sexual satisfaction so that a healthy sex life will actually increase the speed of oscillation. To Reich, the belief that one had to delay gratification in order to be successful in life was as scientifically inaccurate as the idea that masturbation was sinful. The most productive men could also be the most sexual men if they were able to overcome the pleasure anxiety ingrained in their character during a sexually repressive upbringing. More important, the masses could awaken their productive work potential by establishing healthy sex life. This would enable them to overcome their current alienation.

Adopting heavily from Engels’s description of the patriarchal family in *Der Ursprung der Familie, des Privateigentums und des Staats* (1884, translated into English as *The Origin of the Family, Private Property, and the State*), Reich understood the nuclear family to be an oppressive ideological construct. In *The Origin of the*

⁶⁷ Charles Rycroft, *Wilhelm Reich*, 2nd ed. (New York: Viking Press, 1971), 31.

⁶⁸ “Ideally, capitalists would like to see laborers become almost machinelike. Anything that interferes with maximizing production, such as emotional or erotic feeling, is an impediment to efficient production.” Steven Seidman, *The Social Construction of Sexuality*, 3rd ed. (New York: W.W. Norton, 2015), 14.

Family, Engels describes the downfall of maternal law as one of humanity's most radical revolutions—effectively turning women into commodities, slaves of men deprived of all dignity.⁶⁹ The patriarchal family required the total obedience of the wife, and it called for monogamy (at least on the woman's part). A parallel is drawn here between labor and sexuality—women are alienated from their natural sexuality, and from the barbaric organization of the matriarchal polyandrous/polygamous sexual economy described by Engels and reinforced by ethnographic work like Malinowski's *Sexual and Repression in Savage Society* (1927). In the male dominated monogamous family, men and women became enemies; their conflict presents itself as a basic antithesis that civilized society is yet unable to overcome. Just as labor is alienated under capitalism, so is sexuality alienated under the patriarchal family. Woman has become the private property of man.

Marx commented the similarities between sexuality and labor on as well, while retaining optimism for change—for a restoration of a more natural form of social relations.⁷⁰ For both Marx and Engels, and subsequently for Reich, only a sexually affirmative stance was compatible with historical materialism. As Klotz notes, “those who debase sexual pleasure will also deny the role of human production in determining the course of history.”⁷¹ Reich seized on the sexual aspect of Marxism, seeing it as a

⁶⁹ Friedrich Engels, *The Origin of the Family, Private Property, and the State* (New York: International Publishers, 1942).

⁷⁰ Karl Marx, *Economic and Philosophic Manuscripts of 1844*, ed. D.J. Struik. (New York: International Publishers, 1964).

⁷¹ Marcia Klotz, “Alienation, Labor, and Sexuality in Marx's 1844 Manuscripts,” *Rethinking Marxism* 18.3 (2006): 408.

precursor to revolution. The sexual revolution must come first because it is only in a sex-positive society that the transformation of labor can take root.

. . . the Marxists never tired of telling me that the sexual etiology of psychic illness was a bourgeois whim, that it was “only material distress” which produced neuroses, . . . As if sexual distress were not a “material distress”! It is not “material distress” in the sense of Marxian economy that produces neuroses. Rather it is the neuroses of these people that ruins their ability to do something sensible about their distress, to assert themselves more effectively, to stand up to the competition of the labor market, to come to an understanding with others who are in a similar social situation, to keep their heads clear for rational thinking.⁷²

Reich viewed the family as the primary enforcer of sex negation, and it was through a repressive sexual upbringing that the ruling classes perpetuated their rule over society. Irrational attachment to the patriarchal family and the idealization of chastity before marriage and lifelong monogamy were particularly pernicious forms of false consciousness promoted by the dominant class in order to create anxiety in the masses. This is because, “governments can do with populations what they please only as long as people keep struggling constantly, unconsciously, and hopelessly, with these most personal [sexual] problems which touch the core of their lives.”⁷³

Reich believed that sexual frustration emerged from the ideology of lifelong monogamy because it places sexuality and economics into direct conflict. Marriage enables an individual to possess a husband or wife, but the very act of possession ignores the fact that sex with one partner over an extended duration of time becomes monotonous and even intolerable. The myth of lifelong monogamy also promoted dependence, rendered partners fearful of rejection, and led to a superficial division of

⁷² Reich, *The Function of the Orgasm*, 78.

⁷³ Wilhelm Reich, *The Sexual Revolution: Towards a Self-governing Character Structure* (New York: Farrar, Straus and Giroux, 1969), 194-5.

women into those to be fucked and those to be loved. After reading Malinowski's work on the Trobriand Islanders, Reich identified the emergence of a dowry as the moment when sex became a commodity and women became forms of private property.⁷⁴ It is only by destroying the institution of marriage that sexuality can be liberated from economic interests, but this necessitates financial independence for both spouses as well as equal access to childcare—things Reich considered impossible without social revolution.

Reich's position is best explained through his own writing:

The meaning and purpose of all contemporary, i.e., bourgeois and sexually repressive education, is the preparation for life-long monogamy . . . In accordance with their importance as cornerstones of the bourgeois order, marriage and the family are energetically defended both by actual legislation as well as by active and passive hindrance and proscription of erring sexual drives. Both institutions are rooted deeply in our social order—economically by the interests of inheritance, socially by the necessity of protecting the wife and children, and politically by the unique function of the family as the most important conveyor of the ideological influence of the ruling classes. However, both presuppose an abnormally high degree of sexual repression; and precisely this sexual repression is the decisive factor in the production of neuroses, the mass manufacture of impotence and frigidity, and, in the final analysis, even perversions.⁷⁵

To provide an example of the sort of loveless marriages and perverse sexuality Reich based his ideas off of, it is useful to look at what his patients said. In the preserved correspondence, there are a series of letters from one Virginia Safford, perhaps a former analysand introduced to Reich by Ferenczi or by A. A. Brill.⁷⁶ Safford was friendly with

⁷⁴ Malinowski remained one of Reich's only close academic associates during this period. He thought highly of Reich, and the two spent time together in England. See: Sharaf, *Fury on Earth*, 198.

⁷⁵ Wilhelm Reich, "The Sexual Misery of the Working Masses and the Difficulties of Sexual Reform," *New German Critique* 1 (1973): 105-106.

⁷⁶ Her letters are composed on a stationery with the header "Dr. Herman A. Klein, 50 So. Wabash Ave, Room 1615, Chicago, Ill."

Annie Reich, who appears to have been communicating with her about husband in 1927.

The discussions between Safford and Reich about Annie reveal the incredible strain present in the relationship at that time, with Annie presenting as extremely lonely and preoccupied.

In one letter, dated 18 August 1927, Safford tells Reich about American life. She notes the difficulty in making generalizations, remarking that nowadays “What my mother would condemn, my neighbor's mother could praise.” She continues:

. . . A friend of mine, with whom I went to college married some three years ago. The husband, a lovable brainless 100% American, is a bond salesman. He, by the way, also graduated from college. Ruth, the wife, considers her self vastly more intelligent than her husband, Bill. Maybe she is, but she is also vastly less pleasant. She learned all kinds of things at school, such as the number of vitamins and calories each meal should contain, the superiority of her kind of woman over other women and all men, because her kind lacks sensuality (the desire for intercourse). Men, being naturally inferior to women, seem to need such gratification, but only very low down women desire such a thing. She is very thankful that she is not one of these, but she sleeps every night in the same bed with her husband and when he comes home from a stag party (men only) fairly drunk and takes his wife for a woman, by mistake, how he is repulsed! One morning, Ruth told me that Bill had had intercourse with her that night but that she hadn't. I thought she was joking - but she was perfectly serious. She went on to tell me how disgusting men are. He came up against her and tried to kiss her and she felt a poisonous substance coming into her mouth and it was all she could do to keep herself from spitting it on him and thus killing him. This from a quiet nerved, more or less normal appearing woman.

. . . And a young doctor told me of a picnic to which he was invited. All of the people there were married except himself and a girl, who amused herself by playing with one of the husbands, sitting on his lap, etc. When this man's wife's attention was called to it, she announced that she didn't care, because she didn't believe he could “do anything if he wanted to,” and to prove it she walked over to her husband and examined him before everyone.⁷⁷

⁷⁷ Wilhelm Reich Archives. Correspondence Box 28.

From our current perspective, lifelong monogamy may sound naïve, but certainly not sinister. To Reich, such a non-critical attitude is to be interpreted as a sign of how sick society has become. Sex-negative attitudes have modified the human character structure to such an extent that negative social phenomenon like adolescent angst, prostitution, and loveless marriage seem not only tolerable but immutable facts of life – “that’s just the way things are.” The reassuring mantra that “that’s just the way things are” leads to lethargy on a mass scale.

Reich saw in the libido theory the possibility of awakening the masses from their fitful slumber; Fuchs notes, “he was subverting psychoanalysis to the aim of revolution, something that Freud would never do.”⁷⁸ A Marxist revolution demanded long struggle and intense commitment, but it promised to eliminate the very sexual misery that made life under capitalism so oppressive. Harris and Brock assert that, “Reich was expelled for claiming that psychoanalysis necessarily led to socialism, for saying that distortions of Freud accommodated fascism, and for founding a journal and a movement to promote these ideas.”⁷⁹ However, many of Reich’s fellow analysts were also engaged in so-called revolutionary activity, and the existence of the psychoanalytic free clinics represented Freud’s own significant commitment to social causes.

What was unique about Reich was that he particularly opposed to the relatively late psychoanalytic concept of the death drive, which he felt rationalized suffering as an

⁷⁸ Fuchs, “Wilhelm Reich,” 40.

⁷⁹ Benjamin Harris and Adrian Brock, “Freudian Psychopolitics: The Rivalry of Wilhelm Reich and Otto Fenichel, 1930-1935,” *Bulletin of the History of Medicine* 66.4 (1992): 602.

intrinsic part of the human nature.⁸⁰ To Reich, the emphasis on the immutability of human being's self-destructive nature concealed the true nature of social and sexual suffering, creating a negative feedback loop in which the masses had become deeply entrenched. Although Reich's attempt to harness psychoanalysis for revolutionary purposes may have been upsetting to non-Communist members of the IPV, Reich began to experience serious backlash only when he became an outspoken critic of Freud's concept of the death drive.

The Death Drive

What exactly is the death drive (*Todestrieb*) or "death instinct," also called Thanatos or the "Nirvana Principle," that Reich became so vocally opposed to? The concept itself is not much in vogue within the psychoanalytic community, and it was largely neglected at the time of its formulation.⁸¹ Described primarily in "Beyond the Pleasure Principle," a work favorably evaluated as, "a veritable metaphysical reflection

⁸⁰ The death drive could also be used to account for aggression: ". . . aggression would seem to fit naturally within the compass of the death instinct, given its end in destruction. . . . were the death instinct we are born with to operate unimpeded, we would simply expire. But on account of the life instincts that also operate within, a portion of the death instinct is deflected outward in the form of aggression; thus we destroy something instead of simply expiring." Susan Sugarman, *What Freud Really Meant: A Chronological Reconstruction of his Theory of Mind* (Cambridge: Cambridge University Press, 2016), 139.

⁸¹ Hanna Segal's essay in support of the concept notes, "the death instinct is often considered as a purely biological speculation, and very few psychoanalysts consider it useful in clinical work." See: "On the Clinical Usefulness of the Concept of Death Instinct," *International Journal of Psychoanalysis* 74 (1993): 60. J.C. Flugel remarks, "the death instinct has proved the most provocative and embarrassing to both his [Freud's] own disciples and to psychologists at large." See, "The Death Instinct, Homeostasis and Allied Concepts: Some Problems and Implications," *International Journal of Psychoanalysis* 34S (1953): 43. Frank notes that, "after 1945 the death drive hypothesis is largely rejected or ignored, which continued a development that was already taking shape before World War II," Claudia Frank, "On the Reception of the Concept of the Death Drive in Germany: Expressing and Resisting an 'Evil Principle'?" *International Journal of Psychoanalysis* 96 (2015): 96. Finally, "Most of Freud's followers found the Death Instinct theory traumatizingly bleak and rejected it, disavowed it, and left themselves unable to explain aggression," Elisabeth Young-Bruehl and Murray M. Schwartz, "Why Psychoanalysis Has No History." *American Imago* 69 (2012): 141.

upon the ontological limits of vital mobility”⁸² and more critically as, “the least plausible, the most inscrutable and speculative of all Freud’s major theoretical contributions,”⁸³ the death drive emerges as a way to deal with the compulsion to repeat painful or traumatic events, as well as Freud’s dissatisfaction with the application of libido theory to sadism and masochism.⁸⁴ The result was a work that reduced all psychology to the “manifestations of ‘cosmic’ forces inherent in every living thing.”⁸⁵

Freud’s daughter Sophie died in 1920, and biographers have construed her death as intimately connected to the concept of a death drive.⁸⁶ However, Freud had written the first draft of “Beyond the Pleasure Principle” in 1919, while he was dealing with concepts like the uncanny (*unheimlich*) and war neuroses. In other words, he was fascinated not so much by death itself, but with repetition. The essay is a rather confused attempt to explain the “mysterious masochistic trends of the ego” through biological analogy.⁸⁷ In the words of one critic: “he makes one detour after another, starts with explanations about the economic aspects of pleasure-unpleasure relations, begins the second chapter with ‘severe mechanical concussions, railway disasters’ and subsequently tries to develop his considerations on the basis of single-cell

⁸² Paul Moyaert, “The Death Drive and the Nucleus of the Ego: An Introduction to Freudian Metaphysics,” *Southern Journal of Philosophy* 51 (2013): 96.

⁸³ Daniel E. Greenberg, “Narcissism in Freud’s Later Theory: An Interpretation and Reformulation of ‘Beyond the Pleasure Principle,’” *International Journal of Psychoanalysis* 71 (1990): 271.

⁸⁴ Ronald E. Shor, “A Survey of Representative Literature on Freud’s Death-Instinct Hypothesis,” *Journal of Humanistic Psychology* (1961): 74.

⁸⁵ Greenberg, “Narcissism in Freud’s Later Theory,” 271.

⁸⁶ May, “Freud’s ‘Beyond the Pleasure Principle’: The End of Psychoanalysis or Its New Beginning?” *International Forum of Psychoanalysis* 22.4 (2013): 709.

⁸⁷ Sigmund Freud, “Beyond the Pleasure Principle,” in *The Standard Edition of the Complete Psychological Works of Sigmund Freud*, Volume 18 (1920), 14.

organisms.”⁸⁸ In particular Freud looks back to the basic forms of life, arguing that the organic emerged from non-living substances and that there is a dichotomy between the desire to return to non-living matter and propagation of the species through sex, as can be observed in protists. In the fourth section of the essay, Freud rather imaginatively envisions a sort of living brain floating through space. The brain-organism must let a part of itself die in order to form a shield against the many external stimuli that bombard it. Unfortunately, this noble shield, which through its death has preserved the organism, is quite unable to deal with the feelings of pleasure and unpleasure that arise from within the organism. It therefore deals with all strong internal emotions by projecting them outside and always seeks to obtain a peaceful, stimulus free equilibrium. Here, Freud fancies he has discovered

a universal attribute of instincts and perhaps of organic life in general which has not hitherto been clearly recognized or at least not explicitly stressed. *It seems then, that an instinct [Trieb] is an urge inherent in organic life to restore an earlier state of things* which the living entity has been obliged to abandon under the pressure of external disturbing forces; that is, it is a kind of organic elasticity, or, to put it another way, the expression of the inertia inherent [Trägheit] in organic life.⁸⁹

This leads him to believe that there are, in fact, “two kinds of instincts: those which seek to lead what is living to death, and others, the sexual instincts, which are perpetually attempting and achieving a renewal of life.”⁹⁰ He looks to protist biology to discover whether or not this hypothesis can be validated in nature, and finds conflicting opinions about the nature of life and death itself, as well as confusion regarding whether

⁸⁸ Frank, “On the Reception of the Concept of the Death Drive in Germany,” 427.

⁸⁹ Freud, “Beyond the Pleasure Principle,” 36. Emphasis original.

⁹⁰ Freud, “Beyond the Pleasure Principle,” 46.

multicellular organisms are inherently different from the unicellular. Ultimately, he concludes that it is the libido, the sexual drive, that binds a multicellular organism together, and therefore it deserves to be called Eros. Still ambiguous, the death drive appears to be historically prior, a fundamental drive in multicellular organisms that causes them to desire to disintegrate and return to the state of non-living matter.

Freud himself was quite uncertain of the validity of his principle, noting towards the end of his essay: “It may be asked whether and how far I am myself convinced of the truth of the hypotheses that have been set out in these pages. My answer would be that I am not convinced myself and that I do not seek to persuade other people to believe in them.”⁹¹ The death drive remains a controversial subject among psychoanalysts, with some endorsing the concept and others continuing to see it as playing a role in the death of psychoanalysis.⁹² As practicing analyst Ulrike May remarks on “Beyond the Pleasure Principle”:

[Some] see it as the beginning of the end of psychoanalysis. They believe that, in this essay, Freud had begun to realize that the role of sexuality was not as central as he had thought, and that he erroneously attributed the daemonic nature of the sexual to the death instinct. . . . Attitudes towards

⁹¹ Freud, “Beyond the Pleasure Principle,” 59.

⁹² For a recent publication that employs the concept of the death drive as a useful explanatory schema, see: Phil Mollon, “Revisiting ‘Analysis Terminable and Interminable’ – Expressions of Death Instinct by Patients and Analyst,” *Psychoanalytic Inquiry* 34 (2014): 28-38. Mollon somewhat misunderstands the theory of *Todestrieb*, however, and translates it simply as “destructiveness.” Segal’s article correctly apprehends the concept, “On the Clinical Usefulness of the Concept of Death Instinct,” 55-61. One might also see the verbose dissertation: Tracey Lee Hess, “Consciousness and Quantum Physics: Freud’s Death Instinct and the Phenomenology of Corbin’s Mundus Imaginalis Manifested as Complex Fractal in Epilepsy,” PhD diss., (Pacifica Graduate Institute, 2004). The idea of the death drive appears to hold some weight in Asian literary and film studies as well, especially in Korean and Chinese journals. Similar English language publications include: Erich D. Freiburger, “In the Beginning was the Act: Basic Instinct as the Cinematic Image of Freud’s Death Drive,” *Literature and Psychology* 46.4 (2000): 1-25; and Marion Minerbo, “Two Faces of Thanatos: Broken Flowers (2005) and *Ai no corrida* (1976),” *International Journal of Psychoanalysis* 88.3 (2007): 777-790.

the death instinct do not seem to be tied to particular schools of psychoanalysis.⁹³

Looking back with regret, Reich himself commented:

The adherents of the death instinct—who grew in numbers as well as dignity, because now they could talk of “Thanatos” instead of sexuality—ascribed the neurotic self-damaging tendency of a sick organism to a biological primary instinct of the living substance. From this, psychoanalysis has never recovered.⁹⁴

Nevertheless, it took Reich some time to arrive at his hatred of “Beyond the Pleasure Principle,” a work which he cited without criticism in 1922.⁹⁵

Freud was in close correspondence with Ferenczi about the death drive, just as he was during the development of his theory of ontogeny and phylogeny. Interestingly, the death drive relies on phylogenetic reasoning for its justification. Shor details:

Freud predicated a phylogentic basis to the death-instinct: a universal biological quality and thus an unalterable part of life. Since the inorganic state of matter precedes the organic, and since instincts attempt to reinstate earlier conditions, there is an instinct to reinstate the inorganic precondition. It is manifested in the repetition compulsion, the compulsion to reinstate former stages of development irrespective of their pleasure or pain.⁹⁶

Freud saw repetition as harking back to something “more elementary than the pleasure principle and . . . the forces ascribed to it must be, so to speak, more instinctual than the instinctual drives.”⁹⁷ In other words, the repetition compulsion represented the

⁹³ May, “Freud’s ‘Beyond the Pleasure Principle,’” 208.

⁹⁴ Wilhelm Reich, *Reich Speaks of Freud* (New York: Farrar, Straus and Giroux, 1967), 250.

⁹⁵ Robert S. Corrington, *Wilhelm Reich: Psychoanalyst and Radical Naturalist* (New York: Farrar, Straus and Giroux, 2003), 33. Reich himself notes, “I nonetheless continued to use the term ‘death instinct’ in my publications in order not to have to ‘break from the ranks,’” *The Function of the Orgasm*, 157.

⁹⁶ Shor, “A Survey of Representative Literature,” 75.

⁹⁷ May, Freud’s ‘Beyond the Pleasure Principle,’ 710.

most primal of all instincts. It went beyond the desire for pleasure and represented the primordial state of all life in inorganic, and therefore inert, substances. According to Segal, “Freud describes the death instinct as a biological drive to return to the inorganic—the organism reacting to any disturbance to the status quo. . . . He postulated that the life instinct aims at combining elements into bigger units . . . The death instinct aims at destructuralization, dissolution, death.”⁹⁸ It puts humans on a long evolutionary scale, in which all life emerged spontaneously from nonliving substances. Just as Ferenczi argued humans all want to return to a unicellular state achieved at conception, Freud argues that organisms all desire to return to an inert state prior to life. In this schema, May notes, “the repetition of the traumatic situation parallels the urge of all living things to return to the anorganic state or death, or, one might also say, to self-destruction.”⁹⁹

In another interesting connection to his earlier correspondence with Ferenczi, Freud refers to the biologist Augustus Weismann several times in “Beyond the Pleasure Principle.” It was Weismann who coined the term *amphimixis*, which Ferenczi adopted (and distorted) to provide a scientific justification for his theory of genitality. It may have been Freud who interested Ferenczi in the work of Weismann. Freud wrote to Ferenczi in 1919 about Weismann’s suggestion that germ cells, or “germ-plasm,” were immortal.¹⁰⁰ As was typical of psychoanalysis at this time, Freud selectively adopted the theories and

⁹⁸ Segal, “On the Clinical Usefulness of the Concept of Death Instinct,” 55.

⁹⁹ May, Freud’s “Beyond the Pleasure Principle,” 711.

¹⁰⁰ May, Freud’s “Beyond the Pleasure Principle,” 211. Although Ferenczi initially encouraged the development of the death drive theory, he became increasingly critical of the concept, eventually abandoning it completely. See: José Jiménez Avello, “Metapsychology in Ferenczi: Death Instinct or Death Passion?” *International Forum for Psychoanalysis* 7 (1998): 229.

terminology of Weismann, without a deep understanding of their biological implications.¹⁰¹ Freud applied the theory of a mortal soma and an immortal germ plasm as proof of a dichotomy between life and death ever present in all organisms. As May points out, Freud was hard-pressed to make this theory fit in with the rest of his psychoanalytic work, not least because it suggested that life emerged from inanimate, and therefore asexual matter—this simply could not be reconciled with the idea that sexual instincts are primary.¹⁰²

If the death drive could not be justified on biological grounds, it could at least be made to fit into the Fechnerian model of the psyche, in which “some kind of tendency to stability—if at times only approximate or relative—is regarded . . . as the fundamental unifying law.”¹⁰³ It was not Freud, but Bernfeld, who made the greatest attempt to correlate the death drive with the second law of thermodynamics. Leon Saul writes, “Freud’s concept states that there is in human beings and probably in all living things, a drive or tendency toward their own death, toward the re-establishment of a ‘Nirvana’ state, a condition of equilibrium, a return, a regression by the organism, which chemically is an organic colloid, to inorganic matter.”¹⁰⁴ The concept of equilibrium is key here. “The tendency to lose heat, to run down, to equilibrium, to stability, to *irreversibility*, is

¹⁰¹ One author remarks: “For a long time he [Freud] sought to put his psychological findings on some ‘firm basis in physiology.’ . . . The great change in his thinking, as has been shown, came about with his self-analysis, and henceforth he always regarded his system as a pure psychology without a clear-cut physiological basis, though from time to time he again tried to find such a basis, always unsuccessfully.” See: Reuben Fine, *The Development of Freud’s Thought: From the Beginnings (1886-1900) through Id Psychology (1900-1914) to Ego Psychology (1914-1939)* (New York: Jason Aronson, 1973), 85.

¹⁰² May, “Freud’s ‘Beyond the Pleasure Principle,’” 212.

¹⁰³ L.S. Penrose, “Freud’s Theory of Instinct and Other Psycho-Biological Theories,” *International Journal of Psychoanalysis* 12 (1931): 90.

¹⁰⁴ Leon J. Saul, “Freud’s Death Instinct and the Second Law of Thermodynamics,” *International Journal of Psychoanalysis* 39 (1958): 323.

expressed in the concept of entropy.”¹⁰⁵ The death instinct provides stability to the organism, allowing for a complete reduction in tension. It results in homeostasis in accordance with Fechner’s stability principle.

The German physicist Rudolph Clausius coined the word entropy in 1865 to describe “the capacity factor for unavailable energy,” and formulated into the simple statement, “The entropy of the universe tends towards a maximum.”¹⁰⁶ In other words, natural systems tend towards randomness. The laws of thermodynamics were applied to answer all sorts of questions throughout the nineteenth century, from the biological to the religious. This also sparked an effort to prove that “nervous force” functioned according to the principles of energy conservation, “and is perfectly correlated and mutually convertible with electricity, heat, light, magnetism, motion, and chemical affinity.”¹⁰⁷

Entropy fit in with a hydraulic model of the organism as a closed system that needed to discharge energy in response to changes in equilibrium provoked by outside stimulation. It also provided the concept of the death drive with a veneer of purely scientific rationality. Interestingly enough, Buzin writes that those who opposed psychoanalysis in Soviet Russian would pick up on, “the contradictions in Freud’s theory with that between the hydrodynamic concept of mind and thermodynamic concepts.”¹⁰⁸

The idea of a drive towards self-destruction was especially repugnant.

¹⁰⁵ Saul, “Freud’s Death Instinct,” 323. Emphasis original.

¹⁰⁶ Erwin N. Hiebert, “The Uses and Abuses of Thermodynamics in Religion,” *Daedalus* 95.4 (1996): 1051.

¹⁰⁷ Hiebert, “The Uses and Abuses of Thermodynamics in Religion,” 1053.

¹⁰⁸ V.N. Buzin, “Psychoanalysis in the Soviet Union: On the History of a Defeat,” *Russian Social Science Review* 36.6 (1995): 67. For more on this topic: Martin A. Miller, “Freudian Theory under Bolshevik Rule: The Theoretical Controversy during the 1920s,” *Slavic Review* 44.4 (1985): 625-646.

Bernfeld's Experiment

Siegfried Bernfeld, who, like Reich, married a former patient, was an active socialist and a well-regarded analyst.¹⁰⁹ In 1926, Bernfeld joined the Berlin Poliklinik, the first psychoanalytic free-clinic, upon which the Ambulatorium had been modeled.¹¹⁰ In many ways more able than Reich to combine Marxism and psychoanalysis, Danto writes, "Bernfeld could explain the exact nature of a bridge between psychoanalysis and dialectical materialism that even Fenichel and Reich, who visited the Soviet Union on study tours for that purpose, were unable to build."¹¹¹ After Reich moved from Vienna to Berlin in 1930, Freud personally recommended him as an analyst that could help Reich disentangle his own neurosis from politics.¹¹²

In 1930, Bernfeld engaged the assistance of the Moscow engineer and medical student Sergei Feitelberg (1905-1967) in order to determine whether, with the introduction of the death drive, "Freud has overstepped the boundaries of psychoanalysis, . . . to decide whether in his speculation he is misusing an analogy which takes us nowhere or whether he has introduced into biology and psychology a new natural scientific theory."¹¹³ Bernfeld's experiments relied on thermodynamic principles,

¹⁰⁹ Sharaf, *Fury on Earth*, 108.

¹¹⁰ Danto, *Freud's Free Clinics*, 177.

¹¹¹ Danto, *Freud's Free Clinics*, 178.

¹¹² Sharaf, *Fury on Earth*, 155.

¹¹³ Siegfried Bernfeld and Sergei Feitelberg, "The Principle of Entropy and the Death Instinct," *International Journal of Psychoanalysis* 12 (1931): 62.

particularly the law of entropy, which he equated with “thermal death,” in order to carry out his analysis.¹¹⁴

Two years prior to their publication on “The Principle of Entropy and the Death Instinct” in the *International Journal of Psychoanalysis*, the two men had published an article on “The Principle of le Chatelier and the Instinct of Self-Preservation,” in *Imago*. This was the beginning of Bernfeld’s attempt, quickly abandoned, to establish an experimental-scientific basis for psychoanalysis through “libidometry.”¹¹⁵ It was followed, a year later, by two additional studies published in the same journal. In 1930, all three articles were published together with their work on entropy in a small pamphlet entitled *Energie und Trieb: psychoanalytische Studien zur Psychopathologie* and put out by the International Psychoanalytic Press. Reich possessed a copy of this in his personal library, and had underlined several passages dealing with the relationship of collective cellular energy to the functioning of the person.¹¹⁶

Little is known about Sergei Feitelberg, beyond his later employment at Mt. Sinai and his interest in reconciling thermodynamics with psychology.¹¹⁷ A group portrait of

¹¹⁴ Bernfeld and Feitelberg, “The Principle of Entropy,” 65.

¹¹⁵ Leopold Bellak and Rudolf Ekstein call their work the most notable of such attempts, referring to a 1934 publication on their psychophysiological work. See, “The Extension of Basic Scientific Laws to Psychoanalysis and Psychology,” *Psychoanalytic Review* 33 (1946): 309.

¹¹⁶ *Personal Library of Wilhelm Reich* (Rangeley, ME: Wilhelm Reich Infant Trust, 2012), 99. I looked through Reich’s notes during the summer of 2012 when I was granted access to his Personal Library at the Wilhelm Reich Museum in Rangeley, ME. Reich underlined several passages like the following, “Personal energy has a functional dependence on cell energy. The more the cells have energy that they can give away, the more filled they are, the more powerful is the apparatus. The weaker they are, the emptier, the weaker the person.” *Energie und Trieb: Psychoanalytische Studien zur Psychophysiologie* (Vienna: Internationaler Psychoanalytischer Verlag: 1930), 20. According to their schema, the psychic energy that drives the personality emerges whenever a quantity of stimulus overwhelms the capacity of the cells. They developed a formula: Psychic energy is a function of Umwelt energy and Cellular energy, or $E_p = f(E_r, E_c)$.

¹¹⁷ Online searches turn up very little about the mysterious Feitelberg. According to one site, he collaborated with Karl Hartl, a member of the Austrian Revolutionary Socialists, to write nonfiction works for children. See, Reinhard Müller, “Die Arbeitslosen von Marienthal,” *Archiv für die Geschichte der*

Feitelberg relaxing with several analysts, including Reich and Bernfeld, exists in a private collection (figure 2.2). In addition to collaborating with Bernfeld, Feitelberg worked on other psychoanalytic publications with Hans Lampl, issuing an article on “Factors in Psychoanalytic Therapy” in 1935, and two pieces on the effect of heat on psychic states in 1935 and 1939.¹¹⁸ Hans was the husband of “the most influential Dutch psychoanalyst after the Second World War,” Jeanne Lampl-de Groot.¹¹⁹ She and Hans moved from Austria to the Netherlands in 1938, but it is possible that the 1939 work with Feitelberg was composed prior to their departure. Bernfeld had also collaborated with Lampl, as well as the physicist Franz Urbach, but had given up any work on libidometry as futile by 1935.¹²⁰

Bernfeld and Feitelberg’s article begins by stating the controversy the idea of the death drive has caused within psychoanalytic circles, and re-iterating the idea that Eros and Thanatos comprise “the most universal behavior of living substance . . . natural forces, but not instincts in the narrower sense of the word.”¹²¹ The attempt to rationalize the death drive according to physical principles is rather weak. Building off of two previous papers, the human body is divided into two systems.¹²²

Soziologie in Österreich, last updated May 2012, last accessed June 25, 2015, <http://agso.uni-graz.at/marienthal/>.

¹¹⁸ These works are included in Papers of Grete Lehner Bibring 1929-1977. Bibring was a good friend and early love interest of Reich.

¹¹⁹ Eddy de Klerk and Harry Stroeken, “The Dutch Psychoanalytic Movement and the IPA,” *100 Years of the IPA: The Centenary History of the International Psychoanalytical Association, 1910–2010: Evolution and Change*, ed. Peter Loewenberg and Nellie L. Thompon (London: Karnac Books, 2011), 134.

¹²⁰ Jim Martin, *Wilhelm Reich and the Cold War* (Fort Bragg: Flatland Books, 2000), 46.

¹²¹ Bernfeld and Feitelberg, “The Principle of Entropy,” 61.

¹²² Psychic or personal energy of system P, the central apparatus, is put into the following more universal formula: “Energy of the Universe = Umwelt + Personal Energy + Cellular Energy.” Or, to put it differently,



Figure 2.2: Group portrait: Pepa Kramer, Mädi Olden, Wilhelm Reich (top left); Siegfried Bernfeld, Richard Kramer, Sergei Feitelberg, Elisabeth Neumann, 1925. Copyright IMAGNO/Sigm. Freud Priv. Stiftung.

System P represents the central apparatus, approximately the central nervous system.¹²³ System C represents the cells that comprise the rest of the body. This is based off of the neater division of a unicellular organism into nucleus (P) and cytoplasm (C). Following the principle of entropy, they argue, “that all physical processes in any isolated

the Energy of the Universe – Umwelt = Personal Energy + Cellular Energy. The difference between universe and umwelt is expressed in the tautological equation as the energy content of the ‘person system.’” Differentiating for a constant universal energy, they arrive at the ground formula: $d \text{ Personal Energy} = d \text{ Umwelt Energy}$. *Energie und Trieb*, 22-23.

¹²³ One reviewer notes, “the ‘central apparatus’ would appear to be identical with the central nervous system, and in all actual examples is so used, [but] the authors state that this identification is only tentative and approximate, that the energy of the ganglion cells need not be wholly individualized and that the central apparatus may include for instance the endocrine system.” See, William J. Spring, “A Critical Consideration of Bernfeld and Feitelberg’s Theory of Psychic Energy,” *Psychoanalytic Quarterly* 3 (1934): 446-7.

system have a definite trend, namely towards the equalization of the different intensities [*Intensität*] of the system's energies."¹²⁴ This is referred to as the entropy law or the tendency to entropy. The death instinct, for them, is the entropy principle transferred into the organic realm. It is the equalization of systems P and C within a single organism.

Within a living organism, there can never be a balance between the central nervous system and the cells of the body because there is always psychical activity occurring in system P. "Libido directed towards the outer world, all the activities of self-preservation and many of those of the instinct of destruction, fulfil [sic] the dynamic function of lessening the difference of intensity in system P—lowering its potential. That is to say, they increase the entropy of that system."¹²⁵ By increasing the entropy of system P, there is the experience of pleasure (and eventually the state of sleep can be reached). Pain occurs when the potential of system P is raised. According to Bernfeld and Feitelberg's logic, this would necessitate a reduction in the entropy of system P. What exactly this means is a whole different question, not adequately answered. According to the authors: "Pain is associated with conditions in which the potential [of system C] is low, as we assume it to be in fatigue before sleep. . . . When the potential is high, the individual's behavior is characterized by a readiness to turn towards objects and desire them libidinally."¹²⁶

Although this description of system potentials may not provide much insight into either the concept of entropy or the death drive, Bernfeld's socialist leanings come

¹²⁴ Bernfeld and Feitelberg, "The Principle of Entropy," 64.

¹²⁵ Bernfeld and Feitelberg, "The Principle of Entropy," 71.

¹²⁶ Bernfeld and Feitelberg, "The Principle of Entropy," 72.

through when he continues to discuss the question of why pain must exist, in spite of the pleasure principle and the organism's desire to move towards entropy, or repose. His conclusion is as follows:

The reason why human life is accompanied by so much pain, in spite of the pleasure principle and the physical tendency to entropy which this safeguards, must be sought in the conditions of the dual system which, given a certain distribution of energy, may lead to temporary malfunctioning. That this possibility is, in fact, so abundantly realized is due to all the social and psychological conditions and complications of natural processes, upon which psychoanalysis throws all the light we need. There are historical influences (ontogenetic and phylogenetic detours, and others imposed upon the individual by the conditions of his social station, which have now become historical) forbidding us many of those activities that would lead to a pleasurable equalizing of tensions. In a word, the restrictions of instinct which reality and the super-ego impose on the system P are the cause of the painful states so remarkably common and persistent.¹²⁷

The death instinct is made distinct from the destructive instinct, and it is also separated from its supposed opposite, Eros. "Eros is not a mode of behaviour of systems in general; it belongs specifically to organic systems."¹²⁸ The destructive instinct and Eros deserve the title of instincts, whereas the death drive, as entropy, captures something that goes far beyond the instincts and becomes a basic principle of all matter, a "general behaviour of natural systems."¹²⁹

Thomas Szasz makes an excellent point regarding the application of entropy to psychoanalysis, noting: "mathematics can function as a tool in physics and in astronomy without the identity of these sciences suffering thereby. Psychology cannot so use

¹²⁷ Bernfeld and Feitelberg, "The Principle of Entropy," 73.

¹²⁸ Bernfeld and Feitelberg, "The Principle of Entropy," 78.

¹²⁹ Bernfeld and Feitelberg, "The Principle of Entropy," 80.

mathematics without altering its own identity.”¹³⁰ Bernfeld and Feitelberg’s article was also criticized by Reginald Kapp: “Kapp’s reasoning is that entropy, represented in its simplified form, is a certain quantity of heat divided by temperature; hence if this formula does not appear in psychology, it can have no application to the death instinct.”¹³¹ In the critique, Kapp argues that there is an essential difference between energy, as it expressed in psychological terms, and the energy dealt with by physics. “That is to say, one must believe that power in physics has something in common with mental power, force with personality, that energy and libido mean much the same thing, that the laws of physics are governed by impulses and wishes of nature as those of psychology by the impulses and wishes of individuals.”¹³² When put in such terms, it is obvious that the physical and psychological are not the same. In the words of another critic, “no physicist would dream of there being anything in common between these two conceptions of energy.”¹³³ However, Bernfeld’s study of entropy was only one of many to confuse these ideas and was part of a larger project to prove the existence of libido according to physical laws.¹³⁴

¹³⁰ Thomas S. Szasz, “Is the Concept of Entropy Relevant to Psychology and Psychiatry?” *Psychiatry* 19 (1956): 199.

¹³¹ Saul, “Freud’s Death Instinct,” 324.

¹³² Reginald O. Kapp. “Comments on Bernfeld and Feitelberg’s ‘The Principle of Entropy and the Death Instinct,’” *International Journal of Psychoanalysis* 12 (1931): 83.

¹³³ Penrose, “Freud’s Theory of Instinct,” 91.

¹³⁴ It is also worth noting that Freud reverses the common scientific understanding of free energy as kinetic energy. In “Beyond the Pleasure Principle,” he refers to kinetic energy as bound energy, and calls potential energy free energy. Bernfeld and Feitelberg follow his usage, thereby making their work largely unintelligible to a non-psychoanalytic audience. See Penrose, “Freud’s Theory of Instinct,” 92.

Reich would undoubtedly commit some of these same errors in his bioelectrical experiment.¹³⁵

From photographic evidence, it is obvious that Bernfeld and Feitelberg were on a familiar basis with Reich as early as 1925. We can only speculate how much influence the men had on each other.¹³⁶ Statements such as, “we would freely admit that a constant starvation of the erotic life . . . may have a very injurious effect upon the power of system P,” suggest that in some ways the men were thinking along similar lines.¹³⁷ Bernfeld and Feitelberg also did experimental work involving the skin and responses to weights placed upon it.¹³⁸ It is notable, however, that Reich would completely ignore the role of the central nervous system in his later experimental work, focusing instead on the vegetative (autonomic) nervous system as the organismic core. Additionally, Reich would have disagreed with the employment of entropy or “heat death” as a scientific entity, and would also have disagreed with Bernfeld’s assertion that the destruction instinct is ontogenetically earliest, and through it the infant discovers the pleasure of the erotogenic zones.¹³⁹ Reich had a very different understanding of destructive drives, one that would

¹³⁵ It is worth noting that Bernfeld’s project was picked up again in 1941, in a confusing article that once again attempts to prove through rough biological and natural laws that the death instinct does exist. See, George B. Wilbur, “Some Problems Presented by Freud’s Life-Death Instinct Theory.” *American Imago* 2 (1951): 209-265. Reich’s later experiments attempting to measure changes in temperature inside and outside of an orgone accumulator box would also mirror some of the mistakes that Bernfeld and Feitelberg were criticized for in their attempt to prove libido existed by recording temperature differences between the “central apparatus” and the rest of the body. Notably, Reich had highlighted a passage in their work that placed special emphasis on their conclusion that this temperature difference increased in a state of rest, and decreased during work. *Energie und Trieb*, 69.

¹³⁶ In his notebook for the bioelectrical experiments, Reich does list “Bernfeld and Feitelberg” as a precedent in relation to his electrical theory of sexuality. See OI Box 6, folder 6.

¹³⁷ Bernfeld and Feitelberg, “The Principle of Entropy,” 74.

¹³⁸ Siegfried Bernfeld and Sergei Feitelberg, “Deformation, Unterschiedsschwelle und Reizarbeit bei Druckreizen. Mit 14 Figuren im Text,” *Archiv für die Gesamte Psychologie* 83.1 (1932): 197–260.

enter him into a public confrontation with Bernfeld, and the psychoanalytic establishment as a whole.

Dialectical Materialism and the Rejection of Entropy

Sharaf contends that Reich had a nuanced understanding of both Marxism and the death drive, and accusations that his rejection of the latter were based in his communist sympathies is altogether false. He argues that the “concept of the death instinct clashed with Reich’s more positive view of clinical theory,” but was not based in any political or ideological allegiance to Marxism.¹⁴⁰ Sharaf elaborates, “Some have even gone so far as to say that Reich believed the death instinct was a ‘product of capitalism.’ He believed nothing so idiotic.”¹⁴¹ This claim seems difficult to justify. Marxism had a profound impact on Reich’s intellectual development, especially the principles of dialectical materialism. The fact that Reich’s rejection of the death drive came rather suddenly, after previous indifference, supports the fact that his communist awakening played a role in his rejection of the concept.¹⁴² Furthermore, whether or not Reich himself professed to be politically motivated, his rejection of the death drive was most certainly understood by his psychoanalytic colleagues, and by Freud, to be a political maneuver.

Reich emphasized his belief that psychoanalysis and Marxism are two of the most profound intellectual theories in existence in his essay *Dialectical Materialism and*

¹³⁹ Bernfeld and Feitelberg, “The Principle of Entropy,” 76.

¹⁴⁰ Sharaf, *Fury on Earth*, 180.

¹⁴¹ Sharaf, *Fury on Earth*, 183.

¹⁴² See: Corrington, *Wilhelm Reich*.

Psychoanalysis (1929).¹⁴³ Indeed, it was the addition of Marxism to psychoanalytic theory that enabled Reich to find a more effective way of modifying the unhealthy character structure of his psychoanalytic patients by allowing for the discovery of the “the way in which society regulates, promotes, or hinders gratification of the sexual needs.”¹⁴⁴

The 1929 essay attempts to reconcile psychoanalysis with Marxism, two viewpoints often considered to be incompatible at the time (this is despite the significant number of practicing psychoanalysts, within Vienna alone, who had communist leanings). In the essay, Reich cites Bernfeld, in particular, as an exemplary psychoanalyst who has worked to integrate Marxist theories. It may seem all the more ironic that despite their personal and academic similarities, the two men would publicly clash over Reich’s politics in 1932, but the reasons will be clarified shortly. Reich critiques psychoanalysis on two points: unlike Marxism it does not function as a coherent world philosophy, and it focuses on the individual rather than on the masses.¹⁴⁵ Historian Janek Wasserman notes: “He [Reich] maintained that Freudianism was not a comprehensive worldview, since it lacked a sociological, economic, or political theory. To make full use of its findings required situating psychoanalysis within a Marxist worldview and practice.”¹⁴⁶ However, Reich negates the Marxist denial of the material reality of psychological activity by

¹⁴³ Wilhelm Reich, “Dialectical Materialism and Psychoanalysis,” *Studies on the Left* 6.4 (1966): 5-45. This was the basis for a talk Reich gave at the Communist Academy, “an answer to the opponents of psychoanalysis and practically the last publication of its supporters.” See, Buzin, 70.

¹⁴⁴ Reich, *People in Trouble*, 153. Emphasis original.

¹⁴⁵ Reich, “Dialectical Materialism and Psychoanalysis,” 6.

¹⁴⁶ Wasserman, *Black Vienna: The Radical Right in the Red City, 1918-1938* (Ithaca: Cornell University Press, 2014), 173.

suggesting that, if this is the case, “one should not speak of class consciousness, revolutionary will, religious ideology, etc., but should wait until chemistry has supplied the necessary formulae for the physical processes concerned, or until the science of reflexes has discovered the appropriate reflexes.”¹⁴⁷ He also asserts the revolutionary character of psychoanalysis, in that Freud identifies sexuality as existing at birth.¹⁴⁸

In adopting a dialectical materialist viewpoint, Reich did more than examine the sociological impact of civilization on man. He also became increasingly enthralled with the application of dialectical materialism to scientific theories. Dialectical materialism is based in a belief that, “the world is in an endless process of movement, regeneration, the demise of the old and the birth of the new. . . . [It] views the internal contradictions inherent in objects and phenomena as the source of motion and development.”¹⁴⁹

Although Haldane has argued that, “what Marxism calls materialism is something a good deal less mechanical than the materialism of the French eighteenth-century philosophers,” it rests on a belief that there is a real, measurable external reality that behaves according to specific laws.¹⁵⁰ In the case of dialectical materialism, these laws are captured in three principles: the principle of the unity of opposites, the passage of quantity into quality, and the negation of the negation.¹⁵¹ There is also a clear historical trajectory, embedded in “the idea of development, of the transition from the lower to the

¹⁴⁷ Reich, “Dialectical Materialism and Psychoanalysis,” 11.

¹⁴⁸ Reich, “Dialectical Materialism and Psychoanalysis,” 13.

¹⁴⁹ V.G. Afansayev, *Dialectical Materialism*. (New York: International Publishers, 1987), 11.

¹⁵⁰ John Burdon Sanderson Haldane, *The Marxist Philosophy and the Sciences* (New York: Books for Libraries Press, 1969), 19.

¹⁵¹ Haldane, *The Marxist Philosophy and the Sciences*, 24-28.

higher, from the simple to the complex.”¹⁵² For Reich, dialectical materialism served as a bridge between philosophical qualities and natural scientific quantities—it provided the basis for a scientific psychoanalysis.¹⁵³

A key to understanding the disagreement Reich had with the death drive can be found in the belief of the absoluteness of motion, and the idea that, “rest is *relative*, and must not be understood as some kind of dead, inert state.”¹⁵⁴ Matter simply cannot exist in a state of immobility, and therefore dialectical materialism contests the concept of entropy, especially the idea of “heat balance” or a “heat death” of the universe as absolute nonsense—a capitalist idea propagated to instill fear and hopelessness in the masses.¹⁵⁵ This may have motivated Reich’s assertion that the difference between genius and insanity lies in the issue of whether one believes in the end of the world.¹⁵⁶ Entropy was also seen as being incompatible with Marxism because it seemed to negate the possible perfectibility of the human condition.¹⁵⁷ The idea of the death drive was also upsetting because it suggested that society was not the source of human problems.¹⁵⁸ Finally, the idea of a finite universe was incompatible with Engels’s positivist dialectical materialism;

¹⁵² Afansayev, *Dialectical Materialism*, 18. Reich’s understanding of dialectical materialism included several additional provisions, including: nothing is good or bad but simply necessary. See, Reich, “Dialectical Materialism and Psychoanalysis,” 23-25.

¹⁵³ Reich, *The Function of the Orgasm*, 91.

¹⁵⁴ Afansayev, *Dialectical Materialism*, 35. Emphasis original.

¹⁵⁵ Afansayev, *Dialectical Materialism*, 37.

¹⁵⁶ Reich considered belief in the end of the world to be a major indicator of psychic disturbance: “The fantasy of the schizophrenic that doomsday is at hand is the harbinger of psychic breakdown,” *The Function of the Orgasm*, 40.

¹⁵⁷ Elliot H. Lieb and Jakob Yngvason, “A Fresh Look at Entropy and the Second Law of Thermodynamics,” *Physics Today* 53.32 (2000): 32; Hyman Frankel, “Marxism and Physics: A New Look,” *Science and Society* 55.3 (1991): 345.

¹⁵⁸ Rubin Reich, “Wilhelm Reich and Anna Freud,” 111.

Lenin endorsed Engels's theory of an infinite "*perpetuum mobile*" universe in 1908, and it became incorporated into the official philosophy of communist countries.¹⁵⁹

The death drive, therefore, raised particular problems for dialectical materialism because it did not correspond to accepted Marxist tenets.¹⁶⁰ If it was not for its association with entropy, it might be possible to argue that the death drive functions within dialectical materialism, which follows the premise that, "everything that comes into being already carries the seed of its own decay."¹⁶¹ Reich pointed out that the juxtaposition of Eros and Thanatos, of the pleasure principle and the death instinct, of assimilation and dissimulation comprise a "wholly dialectical view of development."¹⁶² Yet he was unable to find justification for the material basis of the death drive, and he rejected the analogy to organic processes of decay. Reich concludes that the death drive is not a drive, but it is rather the complication of an unsatisfied drive. It is the product of dammed up libido, not a function of libido itself. Reich wrote: "The destructive instinct, in my view, is a later, secondary formation of the organism, determined by the conditions under which the self-preservation and sexual instincts are satisfied."¹⁶³

¹⁵⁹ Helge Kragh, "The Universe, the Cold War, and Dialectical Materialism," Manuscript submitted to *Centaurus* (2012): 5-6.

¹⁶⁰ The relationship between entropy and Marxism is nuanced. As one study notes, "Although Marx never uses the terms 'thermodynamics' or 'entropy' in *Capital*, he describes both the use of natural resources and human labour in the capitalist system as essentially entropic." See, Sarah C. Alexander, *Victorian Literature and the Physics of the Imponderable* (New York: Routledge, 2015), 99. Nevertheless, it is clear that "Engels was hesitant to accept the entropy law because it pointed to a cosmology that was at odds with the eternally recurrent universe of dialectical materialism," 98. The topic of entropy and heat death are discussed in Friedrich Engels, *Dialectics of Nature* (New York: International Publishers, 1940).

¹⁶¹ Reich, "Dialectical Materialism and Psychoanalysis," 24.

¹⁶² Reich, "Dialectical Materialism and Psychoanalysis," 14.

¹⁶³ Reich, "Dialectical Materialism and Psychoanalysis," 15.

Reich posited a new principle to replace the dialectic of Eros-Thanatos: the pleasure-unpleasure principle. This fit more neatly with the principles of dialectical materialism. While the death drive refers to the inherent desire of the organism to achieve a state of rest, Reich's "pleasure-unpleasure" dichotomy was always a form of movement in reaction to an external stimulus. Pleasure represents attraction and unpleasure repulsion. Unpleasure is not a state of rest, but a movement and change in reaction to an external excitation. The physiological movement Reich associated with these two states was tension and relaxation. This idea would be developed into the four-beat "orgasm formula" that Reich later attempted to prove through his bioelectrical experiment.

Tension and relaxation are dialectical concepts or processes. This fact is best seen in the sexual instinct. Tension of a sexual urge increases desire; at the same time it reduces tension (i.e. reduces itself) by satisfaction through irritation, so that it is simultaneously tension and relaxation. But tension also prepares for the coming of relaxation, just as, for instance, the winding of a clock prepares for its running down. Conversely, relaxation is connected with maximum tension—e.g., in the sexual act or in the denouement of an exciting play—but is also the basis for the renewal of tension.¹⁶⁴

Reich would maintain that it was not Marxism that caused him to criticize the death drive, "For the record let me note that I criticized the doctrine of the death instinct at a time when I knew nothing about Marxism except that it existed . . . It was not Marxism that caused me to criticize the empirically unproven hypotheses leading to horrendous conclusions (death instinct and repetition compulsion), but it was analytic empiricism that brought me to Marxism."¹⁶⁵ Nevertheless, it is easy to see how the concept of entropy would be disturbing to Reich, who held a utopian vision of a

¹⁶⁴ Reich, "Dialectical Materialism and Psychoanalysis," 28.

¹⁶⁵ Reich, *Reich Speaks of Freud*, 157.

perfectable human nature. It should be noted that the Marxists were not the only ones to butt heads with the concept of entropy. “Many philosophers and social critics, including the large majority of socialist thinkers, found it unbearable that life and activity in the universe should one day cease to exist,” Kragh notes.¹⁶⁶ The Gestalt school of psychology also considered the idea to be unacceptable: “the enemy of Gestalt was not the ‘machine,’ so much as *Chaos*, i.e. the pure non-order of the universal ‘thermal death,’ as envisaged and inexorably predicted by the second law of thermodynamics.”¹⁶⁷ One of the most enduring international legacies of German interwar holism, Gestalt psychology saw the second law of thermodynamics as providing a cold, sterile, and ultimately meaningless vision of apocalypse worth fighting against.¹⁶⁸ In other words, regardless of political affiliation, “to revolutionary minds,” including Reich’s, “entropy seemed opposite to revolution.”¹⁶⁹

Reich on Masochism

Reich’s article on masochism—originally published in 1932 in the *International Journal of Psychoanalysis* as “Der masochistische Charakter. Eine sexualökonomische Widerlegung des Todestriebes und des Wiederholungszwanges” (“The Masochistic Character: A Sex-economic Refutation of the Death Drive and the Repetition

¹⁶⁶ Kragh, “The Universe, the Cold War, and Dialectical Materialism,” 5.

¹⁶⁷ C.E. Ferrario and L. Coris, “Vitalism and Teleology in Kurt Goldstein’s Organismic Approach,” in *Vitalism and the Scientific Image in Post-Enlightenment Life Science, 1800-2010* (Dordrecht: Springer, 2013), 211. Emphasis original.

¹⁶⁸ Anne Harrington, *Reenchanted Science: Holism in German Culture from Wilhelm II to Hitler* (Princeton: Princeton University Press, 1999), 105.

¹⁶⁹ Helge Kragh, *Entropic Creation: Religious Contexts of Thermodynamics and Cosmology* (Abingdon: Ashgate, 2013), 223.

Compulsion”)—stands out to his followers as important because the negative response to its publication seems to demonstrate the psychoanalytic community’s deceptiveness and its inability to deal with the issue of the orgasm in a rational way. For example, Sharaf writes: “In his article on masochism, Reich’s argument was presented on strictly theoretical and clinical grounds and should have been answered in the same way.”¹⁷⁰ He acts as if the article is completely devoid of any ideological commitments to Marxism, and simply a neat presentation of clinical and theoretical facts. He is aghast that the article was meant to be printed with a disclaimer that pointed out its political nature.

There is certainly enough political in the tone of the article that many analysts felt uncomfortable. Additionally, some interpreted the 1929 publication of Reich’s notes from a study tour in the Soviet Union as an indication of his adoption of the Stalinist personality cult.¹⁷¹ In an excellent article on the subject, Reich scholar Philip W. Bennet and historian of psychoanalysis Galina Hristeva note that Reich’s writings and activities after his trip: “show a Reich who is a dedicated Communist, one willing to ignore Stalin’s increasingly authoritarian control, one willing to justify the party line and forfeit, at least publically, whatever doubts or reservations he had about Soviet machinations.”¹⁷² Ferenczi, who had been one of Reich’s allies among the older cohort, had, by January of 1932, come to believe that “intervention [in the Reich’s publications are] not only justified but absolutely necessary to establish our [Psychoanalytical] nonpartisanship. . . .

¹⁷⁰ Sharaf, *Fury on Earth*, 183.

¹⁷¹ This is the position taken by Karl Fallend. For the original article: Wilhelm Reich, “Die Stellung der Psychoanalyse in der Sowjetunion. Notizen einer Studienreise in Rußland,” *Die Psychoanalytische Bewegung* 1 (1929): 358–368. Published in English as “Psychoanalysis in the Soviet Union (1929),” in *Sex-Pol: Essays 1929–1934*, ed. Lee Baxandall (New York: Verso, 2012), 77–88.

¹⁷² Galina Hristeva and Philip W. Bennett, “Wilhelm Reich in Soviet Russia: Psychoanalysis, Marxism, and the Stalinist Reaction,” *International Forum of Psychoanalysis* (2016): 8.

I am quite willing to express my opinion, alone or in concert with the Central Committee.”¹⁷³ Less than a week later, in his final communication on the matter, Ferenczi determined that Reich’s articles were too partisan to continue to be published in the *International Journal*. Rather than retreat from publishing the already accepted essay, it was suggested that the article be published with a warning that it is derived from affiliation with a political party and distinctly non-scientific in character.¹⁷⁴ Although Reich would come to despise Fenichel, he was among those who defended Reich’s right to have his article published, and as a result, he was ultimately removed from editorship of the journal.¹⁷⁵

The idea of publishing a disclaimer was eventually disbanded, and instead, Bernfeld was asked to write a response to accompany the article. Bernfeld was perhaps chosen to refute this article because of his scientific attempt to prove the death drive a few years earlier. Bernfeld was also a well-respected socialist, and he had penned an article on “Socialism and Psychoanalysis” from which Reich borrowed heavily for his own “Dialectical Materialism and Psychoanalysis,” without giving Bernfeld his due credit.¹⁷⁶ This would have been an excellent opportunity for Bernfeld to publicly respond to Reich’s work on dialectical materialism, and he took it.

¹⁷³ “Letter from Sandor Ferenczi to Sigmund Freud, January 21, 1932,” vol. 3 of *The Correspondence of Sigmund Freud and Sandor Ferenczi* (Cambridge, Mass.: Belknap Press, 2000), 425.

¹⁷⁴ “Letter from Sandor Ferenczi to Sigmund Freud, January 26, 1932,” vol. 3 of *The Correspondence of Sigmund Freud and Sandor Ferenczi*, 427.

¹⁷⁵ Turner, *Adventures in the Orgasmatron*, 139.

¹⁷⁶ Philip Bennett, *From Communism to Work Democracy: The Evolution of Wilhelm Reich’s Social and Political Thought*, (New York: Verso, forthcoming).

Bernfeld had long been an acquaintance of Reich who, like many other analysts, grew increasingly distant and disgruntled by Reich after his political radicalization in 1927. His response, entitled “The Communist Discussion of Psychoanalysis,” will be reviewed after a discussion of the contents of Reich’s article. Suffice it to say, his focus on the Marxist elements of Reich’s work hackles Reich’s supporters even today. In the third edition of *Character Analysis*, in which the article is reprinted, an editor’s preface states:

[Bernfeld’s] reply had nothing to do with the problem of masochism, however. Instead, it dealt with and sharply rejected Wilhelm Reich’s contributions to Marxian sociology. In other words, since Wilhelm Reich’s clinical arguments were incontestable, the attempt was made to weaken his theory of masochism by ascribing it to emotionally tinged political motives. The attempt was a total failure.¹⁷⁷

Reich’s essay on masochism includes as evidence a case study of a man who was for the most part sexually impotent and suffered from a debilitating loss of energy brought about by his strange method of masturbation, in which he would grab and squeeze his penis for hours on end while fantasizing about being beaten, “until finally, completely exhausted, he would yield to an ejaculation in which the semen did not spurt out rhythmically but merely flowed out.”¹⁷⁸ The man is not simply someone who enjoys sexually masochistic acts, as we might imagine today, but a wholly distraught character who suffers from depression and all sorts of emotional difficulties brought about by his complaining, passive-aggressive nature. What Reich comes to learn through his analysis of the patient, in which he engages in rather unorthodox practices like mimicry (“I

¹⁷⁷ Wilhelm Reich, “The Masochistic Character,” *Character Analysis*, 3rd ed., trans. Vincent R. Carfagno (New York: Farrar, Straus and Giroux, 1972), 226.

¹⁷⁸ Reich, “The Masochistic Character,” 238.

imitated his appearance. I began to speak to him in childish language; I also lay on the floor and kicked and screamed the same way he did”),¹⁷⁹ is that the patient is not repeating unpleasurable experiences, but he is repeatedly attempting to experience pleasure and subsequently thwarting it through his own maladaptive behavior.

In justifying this assertion, Reich looks to both physiological and social examples.

In the physiological realm, he finds that:

inner tension is determined by the restriction of the flow of blood. The strong flow of blood through the body periphery, on the other hand, relieves inner tension and, consequently, the physiological basis of anxiety. From the physiological point of view, the fear-resolving effect of the orgasm is essentially based upon this process, which represents a remarkable change in the blood circulation with peripheral vessel dilation and discharge of tension in the center (splanchnic vessels). . . . the peripheral vasodilation, which relieves the inner tension and anxiety, represents the erogenic basis of the masochistic character. His later endeavor to avoid the loss of contact is merely the psychic duplication of a physiological process of innervation.¹⁸⁰

This connects the theory of masochism back to Reich’s assertion that orgasmic impotency is the foundation of all neurotic behavior. In this case, the masochistic character is unable to achieve orgasm in the usual way, which, according to Reich, is through sensual union with a partner into whom one can psychologically “melt.” In the case of this particular individual, the orgasmic disturbance is traced to the castration complex: melting, for this patient, meant a skinning of the penis. Therefore, whenever the patient approached a physiologically healthy orgasm he would retreat from the sensation in order to prevent the melting feeling and subsequent experience of peripheral vasodilation, thus fulfilling his childish psychological need to preserve his penis. The

¹⁷⁹ Reich, “The Masochistic Character,” 244.

¹⁸⁰ Reich, “The Masochistic Character,” 248.

masochist desires to be beaten, however, because this sort of harsh skin contact also serves to provide vasodilation at the surface of the body. Therefore, the experience of being beaten and the desire to repeat it is not at all an example of a desire for pain—it represents a desire for pleasure, a desire for the peripheral vasodilation the body so desperately seeks but is unable to achieve in any other manner due to anxiety.¹⁸¹ Thus, Reich is able to reiterate his beloved hobbyhorse: “the conflict between sexual desire and fear of punishment is central in every neurosis.”¹⁸²

In an attempt to link this to his earlier work, and also to more acceptable theories, Reich draws on genitality to support his argument. Remarkably, he even points to Ferenczi’s concept of *amphimixis*, drawing attention to the important role of anal and urethral anxiety in the formation of the underlying disturbances that create the masochistic character.¹⁸³ He does not, of course, credit Ferenczi for these ideas or use the term *amphimixis*, perhaps because genitality has come to mean something entirely different for him.¹⁸⁴ It is not simply the inability of an individual to balance urethral and anal impulses and channel them through the genitals, it is now a larger dysfunction of the organism to achieve a natural ability to experience tension and to regulate the affective

¹⁸¹ As a student of Reich’s would later put it, “There is no real unconscious desire to die. The seeming desire to die is actually a desire for relief.” *Some Questions and Answers about Orgone Therapy: An Interview with Chester M. Raphael, M.D.* (Rangeley, ME: Wilhelm Reich Museum, 1977), 22. Another notes: “The masochist is really asking for *decompression*, not pain, but is willing to suffer the pain if only the unbearable tension can be abated.” Elsworth F. Baker, *Man in the Trap: The Causes of Blocked Sexual Energy* (New York: MacMillan, 1967), 132. Emphasis original.

¹⁸² Reich, “The Masochistic Character,” 256.

¹⁸³ Reich, “The Masochistic Character,” 258.

¹⁸⁴ “Genitality . . . is normally or abnormally a function of the whole organism. It follows that the sexual orgasm, which became the keystone of Reich’s theory and therapy . . . is a function not of the genital *per se*, but of the whole organism.” Press, “The Marxism and Anti-Marxism of Wilhelm Reich,” 74. Emphasis original.

cycle of pleasure-displeasure. For this Reich blames “the ‘cultural’ educational procedures” and the “patriarchal and familial upbringing” of children.¹⁸⁵

Here is where we see the political aspect of Reich’s work come to the forefront. Improper familial education becomes the source of complications in the progression from an infantile pregenitality to a healthy adult sexuality. Whereas Freud saw repression as inhibiting the pregenital impulses, Reich saw it as distorting the proper development of sexuality and thereby distorting the genital impulse.¹⁸⁶ Once a bad upbringing or a restrictive education had intervened and essentially ruined a child’s ability to achieve normal, healthy sexuality and the so-called genital character, it was inevitable that said person would end up suffering from some sort of psychological disturbance. Here entered Reich’s communist agenda, to save children from “the miasma which is part and parcel of the patriarchal system of education.”¹⁸⁷ In praise, one writer later summed up: “The irrational and the pathological in social life could most fundamentally be understood as family.”¹⁸⁸

It was family, a socially constructed family that served the prevailing economic system, that led to orgasmic impotence. The family prevented orgasm through sex-repressive attitudes and education. As Sharaf, who is so adamant to disavow this essay of any political leanings, states, “what he did hope was that the sex-affirmative direction of

¹⁸⁵ Reich “The Masochistic Character,” 258, 259.

¹⁸⁶ Press, “The Marxism and Anti-Marxism of Wilhelm Reich,” 73; Philippe Van Haute and Tomas Geyskens, *Confusion of Tongues: The Primacy of Sexuality in Freud, Ferenczi, and Laplanche* (New York: Other Press, 2004), 21-22.

¹⁸⁷ Reich, “The Masochistic Character,” 249.

¹⁸⁸ Erik Gronseth, “The Significance of Wilhelm Reich’s Work for the Study of the Child and the Family,” *Journal of Comparative Family Studies* 13.2 (1982): 145.

the Soviet Union in the 1920s would eventually lead to the prevention of neuroses, and with it, of a primary masochism and sadism . . . Reich believed that a consistent sexual affirmation was incompatible with capitalism, or, for that matter, with feudalism.”¹⁸⁹

This is clearly a political agenda. Reich is arguing, quite vitriolically at times, that psychoanalysis is working in the wrong direction. In one particularly scathing accusation of the psychoanalytic establishment, Reich accuses analysts of failing patients because, “we divide our attention very poorly when we allot 98 percent of it to analytic embellishments and scarcely 2 percent of it to the gross injuries inflicted upon children *by the parents*.”¹⁹⁰ The death drive was just another excuse or embellishment, another way to avoid confronting the social forces corrupting the education of youth. Speaking to the ethical implications of Reich’s work, Zweig writes:

the orthodox Freudian school, following Freud’s speculations . . . did not see the failure of many patients to get well as due, among other things, to their continuing to be crushed by existing social-political institutions and practices, as well as by existing exogenous moral codes . . . The uncured individual is written off as having a Death Instinct and a biologically (=unchangeably) given fundamental masochism—for both Reich finds no clinical evidence.¹⁹¹

While Reich may have never come right out and say that Freud is making excuses for the capitalists, he had long suspected such. And for many of his contemporary analysts, and for critics today, this disavowal of Freud was naïve and motivated by political radicalization. One scholar notes:

¹⁸⁹ Sharaf, *Fury on Earth*, 183.

¹⁹⁰ Reich, “The Masochistic Character,” 259. Emphasis original. Note that Reich is not referring here to any sort of seduction or actual abuse on the part of the parents, but rather the educational transmission of sex-negative attitudes from parent to child.

¹⁹¹ M.B. Zweig, “Wilhelm Reich’s Theory: Ethical Implications,” *American Imago* 28 (1971): 272-3.

Freud's great discovery was the sexual etiology of mental illness and disturbance, and he held, following Charcot, that anxiety and neurosis were caused by sexual failure. In *The Ego and the Id*, Freud reverses this, saying that it is anxiety and neurosis that cause sexual failure. Thus Freud undercuts libido theory and establishes the centrality of the ego in its mediating function between superego and id. For Reich this is a fatal compromise, a sellout to the powers of repression. . . . [However,] As everyone but Reich knows, his view was ironic and tragic. Freud was working to define a stoic concept of character.¹⁹²

Others make similar observations about Reich's criticism of Freud and the pride he takes in being a rebel:

Reich's revolutionary equations always began with the private, sexual self and flowed outward toward the public, political self. . . . it happily cancelled the tragic conflict of self and civilization that Freud took to be irreducible. . . . In his later years, Reich would complain—or was it a boast?—that *Civilizations* [sic] and *its Discontents* was written in response to one of his, Reich's, lectures in Freud's home in 1929: "I was the one who was 'unbehaglich in der Kultur.'"¹⁹³

The idea of the death drive clashed both with Reich's own belief in the importance of orgasm, and the idea that sexual dysfunction was the only explanation for all neurotic conflict, and with his commitment to revolutionary Marxism.¹⁹⁴ The death drive was nothing but a complication of inhibited orgasm.¹⁹⁵ Freud certainly could not have been comfortable with Reich's blatant criticism that, "a repetition compulsion *beyond* the pleasure principle does not exist; the corresponding phenomena can be

¹⁹² Fuchs, "Wilhelm Reich," 42.

¹⁹³ Mark Shechner, "From Socialism to Therapy II: Wilhelm Reich," *After the Revolution: Studies in the Contemporary Jewish American Imagination* (Bloomington: Indiana University Press, 1987), 96.

¹⁹⁴ As Sharaf notes, during this period he forced his daughters to attend a communist school, which they despised.

¹⁹⁵ "There is no primary destructiveness for Reich. . . . The death instinct is really the product of neurosis. Reich reduces the death instinct, in the sense of longing for dissolution or nothingness, to unconscious longing for orgasmic release of tension." Fuchs, "Wilhelm Reich," 49.

explained *within* the framework of the pleasure principle”¹⁹⁶ or “hypotheses such as those criticized here [the death drive] are very often an indication of a premature capitulation to the problems of psychoanalytic practice.”¹⁹⁷ Reich, the disciple, is now criticizing the very founder of psychoanalysis as unable to deal with the complexities of his own method and boasting that he has unlocked the key to treating and even preventing all neuroses through the orgasm!

Despite the fact that his outspoken criticism of Freud and his disparaging attitude toward existing family structures ultimately resulted in his dismissal from psychoanalysis and eventually the widespread discrediting of his work as the product of schizophrenia, in 1954 Reich felt confident enough to assert that, “to believe in a primary masochism, in a wish to punish yourself, in a desire to die—no! no! . . . Yet, out of that grew the horrible misuse of Thanatos. I succeeded in destroying that.”¹⁹⁸

Later in life, and especially following his expulsion and censorship by the communists (all of his writings were banned in the USSR between 1934–37),¹⁹⁹ Reich would profess that he was not in fact aligned with a political party and that his expulsion from psychoanalysis was due entirely to the inability of his fellow practitioners to come to terms with their own impaired genitality. In a 1954 interview, Reich recalled, “I was regarded very highly from 1920 up to about 1925 to 1926. And then I felt that animosity. I had touched upon something painful—genitality. They didn’t like it. They didn’t want

¹⁹⁶ Reich, “The Masochistic Character,” 263. Emphasis original.

¹⁹⁷ Reich, “The Masochistic Character,” 269.

¹⁹⁸ Reich, *Reich Speaks of Freud*, 72. Rumors of schizophrenia began as early as 1931, when Sandor Rado (who Reich saw briefly for analysis) told Annie that he was psychotic. Rado would spread this rumor in America as well.

¹⁹⁹ Reich, *Reich Speaks of Freud*, 135.

it.”²⁰⁰ At the time, to those involved, it appeared that it was more Reich’s political leanings, and less his interest in sexuality, that was responsible for the expulsion. The final break with Freud derived not so much from the focus on orgasm, which Freud had publicly derided him for before, but from the perception that Reich’s politically motivated desire to disrupt the traditional family system was a threat to psychoanalysis as a whole.²⁰¹

Bernfeld’s Reply

There are numerous similarities that can be drawn between the careers of Reich and Bernfeld, and indeed at one time the two collaborated together. “Reich, who had little initial concern for politics, became more engaged as a result of his training with Bernfeld [at the Viennese Psychoanalytic Union].”²⁰² However, Bernfeld had apparently shown dislike for Reich as early as 1921.²⁰³ There was further disturbance between the two men beginning in 1923, when Reich was passed over for the position of second secretary in favor of Bernfeld. The following year, the second position was eliminated. The justification was given that there needed to be one lay analyst in the position. (Notably, Reich would frequently speak out against lay analysts).²⁰⁴ Bernfeld became vice-director

²⁰⁰ Reich, *Reich Speaks of Freud*, 15.

²⁰¹ Turner, *Adventures in the Orgasmatron*, 122.

²⁰² Wasserman, *Black Vienna*, 167.

²⁰³ In a diary entry from 17 January, 1921, Reich writes “Bernfeld . . . spoke poorly of me; what does he know about me, and where did he get his information?” See, Reich, *Passion of Youth*, 154.

²⁰⁴ Reich, *Reich Speaks of Freud*, 148-149.

of the Vienna Psychoanalytic Society's Training Institute, established in 1925, with Helene Deutsch serving as director and Anna Freud as secretary.²⁰⁵

Bernfeld was a good choice to review Reich's work because he was a very knowledgeable socialist, and he too was in favor of an alternative to the patriarchal family; a Zionist, Bernfeld believed *kibbutz* life was best for children.²⁰⁶ Bernfeld had his own Kinderheim Baumgarten, a progressive, anti-authoritarian school for World War I orphans.²⁰⁷ Like Reich, Bernfeld was considered to be a promising analyst from a young age. Freud had so much faith in him that he felt that Bernfeld could forego training analysis just as Reich had.²⁰⁸

Personal disagreements aside, Bernfeld may have welcomed the opportunity to publicly criticize what he considered to be another failure of communism. He had divorced from his wife, an ardent communist, in 1926 and she moved to Russia, leaving their two children behind.²⁰⁹ In 1932, when asked to write his critique of Reich's article on masochism, Bernfeld was completing his first and only analysis, with Hanns Sachs. At

²⁰⁵ The training institute was established in order to gently relieve Hitschmann of some of his duties. Freud wrote, "It is not a secret among us that Dr Hitschmann has not been nearly as good intellectually and has developed character traits that are not desirable. . ." See Ernst Falzeder, ed. *The Complete Correspondence of Sigmund Freud and Karl Abraham, 1907–1925* (New York: Karnac, 2002), 529. Perhaps the establishment of the Training Institute was also in part an effort to deprive Reich of some of his influence over the younger generation of analysts, whom he was seen as indoctrinating with too exclusive a focus on orgasm theory. Freud expressed concern that Reich was focusing too much on the orgasm in his technical seminars in a letter from Freud to Wilhelm Reich, 27 July 1927, Wilhelm Reich Archives, Correspondence Box 2, folder 5.

²⁰⁶ Daniel Benevise, "Siegfried Bernfeld and the Spirit of Psychoanalysis," *American Psychoanalytic Association* 100th Annual Meeting, San Francisco, June 8, 2011.

²⁰⁷ Martin Allen Miller, *Freud and the Bolsheviks: Psychoanalysis in Imperial Russia and the Soviet Union* (New Haven: Yale University Press, 1998), 64.

²⁰⁸ Benevise, "Siegfried Bernfeld," 4.

²⁰⁹ Benevise, "Siegfried Bernfeld," 5.

this point, he rarely interacted with Austro-Marxists, pursuing his own clinical questions instead.²¹⁰

He was also travelling back and forth from Germany to Vienna in order to lecture on the treatment of adolescents. Danto summarizes the differences between the two men: “Unlike Reich, Bernfeld rejected the idea of an overarching sexual narrative. No sexual action is universally harmful or helpful because each individual is a personal amalgam of early childhood history, individual personality, and social environment. Reich and Bernfeld also differed on their views of family life. Whereas Reich thought of the family as an insidious microcosm of patriarch and bourgeois capitalism, Bernfeld was generally more forgiving.”²¹¹

Bernfeld’s, “The Communist Discussion of Psychoanalysis and Reich’s ‘Refutation of the Death Drive,’” was a scathing critique that even made personal attacks against Reich.²¹² The title of his essay makes it clear that he is speaking out against Reich’s entire political agenda, with the death drive being a particular sticking point. In this sense, followers of Reich are correct in asserting that the essay was not merely an

²¹⁰ Wasserman, *Black Vienna*, 180.

²¹¹ Danto, *Freud’s Free Clinics*, 245.

²¹² Siegfried Bernfeld, “Die kommunistische Diskussion um die Psychoanalyse und Reichs ‘Widerlegung der Todestriebhypothese,’” *Internationale Zeitschrift für Psychoanalyse* 18.3 (1932): 352-385. It is easy to see, in the rhetorical questions posed near the end of Bernfeld’s essay very personal digs at Reich. He asks, for example, if Reich has the right “to mimic the barricade fighters, the men of the calloused fist?” This is a double-dig. Barricade fighters refers to the Schutzband, the Social Democrat’s militia. Reich’s moment of radicalization, according to him, occurred on July 15, 1927. The Schutzband passed up an obvious opportunity for armed insurrection and failed to protect the people they purported to represent. In other words, they were revolutionary in name only. The reference to the calloused fist is likely a double-entendre. The term “schwieiligen” also means horny. Reich is famous for his lifelong struggle with psoriasis, and his skin condition was often commented on by his peers. Bernfeld is making a very sharp jab here, suggesting that Reich is a comfortable member of the bourgeois who only imitates a revolutionary and claims allegiance to the working class not based on any sort of deep understanding, but due to the fact that he also has calloused hands.

argument against Reich's theory of masochism. Nevertheless, Benevise asserts that "with Bernfeld's refutation, Reich became increasingly marginalized by the psychoanalytic establishment."²¹³ Galina and Bennett go so far as to declare, "it is safe to say that this article of Reich's [and Bernfeld's attack on Reich in his rejoinder] was the first step along the path that eventually led to Reich's expulsion from the International Psychoanalytic Association in 1934."²¹⁴ Although the essay did not in fact deal with many of the points made in Reich's paper on masochism, this is beside the point. Reich was an analyst of some repute and those involved in the debate and the readership of the journal all knew what the real issue was.

The essay strongly critiques Reich as having very little understanding of historical fact, and even less grasp of sociological methods.²¹⁵ Reich would later assert that the concept of sociology simply was not developed at this time, that there was little understanding of what the term sociology even meant, but this is not apparent in Bernfeld.²¹⁶ Bernfeld argues that neuroses have an existence that far proceeds the existence of capitalism or bourgeois moralism, and similarly psychoanalysis. He also questions how applicable any psychoanalytic concepts could ever be for dealing with anything beyond the individual. In one of the few English treatments of the article, Russell Jacoby writes:

²¹³ Benevise, "Siegfried Bernfeld," 7. Although never translated in English, Bernfeld's essay is held in high regard as an example of the effort to combine psychoanalysis and Marxism. It was republished in a collection of essays. See, *Psychoanalyse und Marxismus: Dokumentation e. Kontroverse* (Frankfurt am Main: Suhrkamp, 1970).

²¹⁴ Hristeva and Bennett, "Wilhelm Reich in Soviet Russia," 9.

²¹⁵ Bernfeld, "Die kommunistische Diskussion um die Psychoanalyse," 357.

²¹⁶ See, *Reich Speaks of Freud*. Reich claims that he was never "political." He was doing sociological work, but there was no understanding of what sociology, as distinct from politics, was in the 1930s.

Bernfeld noted two things in passing that could suggest future differences between Reich and a critical psychology: Reich's 1) narrow materialism, and 2) positive notion of health. According to Bernfeld, Reich wanted to "purge psychoanalysis of 'metaphysical hypotheses' and restrict it to the clinical in the narrowest sense of the word." Further, Reich pursued a "vague ideal of sexual health: full genitality, orgiastic [sic] potency, etc."²¹⁷

Bernfeld's critique suggests that there was significant reticence about approaching the orgasm as a scientific phenomenon divorced from its psychological and phenomenological expression. Orgasm had become something more than a function of the organism; there was something special and even sacred about it. And Reich's work was violating that sacredness.

Within his psychoanalytic critique, Bernfeld purposefully avoids dealing with Reich's clinical work, dismissing it simply by stating, "probably it contains, as the clinical work of Reich always does, some things that are right, some things that are stimulating, and some things that are exaggerated and incorrect."²¹⁸ Of the active techniques Reich described in his essay, such as imitating his patient's outbursts, Bernfeld is entirely dismissive. He feels that any communication obtained from the patient in such an active therapy, where "Reich himself rolls around screaming on the floor with the patient," are surely untrustworthy.²¹⁹ He finds Reich's terminology—for example, the physico-chemical "tension-relaxation apparatus" (*Spannungs-*

²¹⁷ Russell Jacoby, *Social Amnesia: A Critique of Contemporary Psychology* (New Brunswick: Transaction, 1997), 93. Note that Jacoby incorrectly calls orgastic potency "orgiastic potency." I thank Philip Bennett for pointing out that this is the same term the Mildred Brady would use to denounce Reich's theory as promoting sexual licentiousness. See, "The Strange Case of Wilhelm Reich," *Bulletin of the Menninger Clinic* 12.2 (1948): 61.

²¹⁸ Bernfeld, "Die kommunistische Diskussion um die Psychoanalyse," 380.

²¹⁹ Bernfeld, "Die kommunistische Diskussion um die Psychoanalyse," 380.

Entspannungs-Apparatur) on which Reich's orgasm theory depended—to be nothing but incomprehensible gibberish.

In his final assessment of whether Reich's communist leanings have colored his views and methods, Bernfeld is especially critical. He finds Reich's writing peppered with allusions to the “patriarchal-family” when he could simply say education. He finds the term sex-economic altogether out of congruence with a more simple term like sociological. Especially disturbing to Bernfeld, and for good reason, is Reich's accusation that psychoanalysts are doing nothing but frittering away time with all of their dream analysis and case studies, when they should be out attacking the family system. By attacking non-communist scientists as sycophants, Bernfeld suggests that Reich himself is perhaps orgasmically important. He declares that Reich's work is certainly not Marxist, even if it attempts to cloak itself in a veil of communism. Reich is accused of misunderstanding both Marxism and Freudian psychoanalysis, of belonging to the ranks of the like of Charles E. Maylan, who attempted to write a psychoanalytic biography of Freud without any psychoanalytic experience. Bernfeld accuses Reich of being a wild psychoanalyst and a wild sociologist.²²⁰ He declares him instead a philosopher of an atheistic sexual-ethical bent.

Reich published a short reply to Bernfeld's critique, which is translated in full below:

It is in the interest of objective discussion to put up for serious debate the questions that I raised in my work “The Masochistic Character.” It is extremely regrettable that an analyst who has no interest in and no experience with such clinical problems has taken criticism with my work. I leave it to the reader of both essays to decide whether my critic does justice to the questions I have raised; I also leave it to the reader to assess

²²⁰ Bernfeld, “Die kommunistische Diskussion um die Psychoanalyse,” 381.

the form and tone of his criticism. Based on my many years of writing about the disputes between Marxism and psychoanalysis, the present situation included, I can only consider the shift of the clinical question about the death drive into the political as an avoidance of my specific questions, which tells us nothing about my opponent's position on the death drive. A response to the "critique" of my Marxist work delivered by Bernfeld is pointless, and it wouldn't belong in this journal because it would disorient most readers with its handling of Marxist questions. There are a series of publications that will familiarize the reader with my scientific position on the application of psychoanalysis to sociological questions. The reader of Bernfeld's article, without knowledge of these publications, is in no position to draw conclusions. In any case, the publications do not avoid, but give, admittedly all too gradually and only sequentially, an answer to the question of whether I ever reject the sociological application of psychoanalysis, of whether I negate only a certain type of application, and which method I actually believe in and apply. With regard to my present work on the death drive, it is to be hoped that a staid critic will be found who is not affectively marred by political vacillation. Certain circumstances, not difficult to guess, forbid me at this point to discuss the position from which Bernfeld wrote, and which determined the character of his shortcomings and his underhandedness. These too cannot be avoided.²²¹

While the above criticism may seem to be rather shallow, and it certainly takes the same type of jibes as Bernfeld's own article, it is often repeated by supporters of Reich. Bernfeld simply ignored the clinical aspects of Reich's work and made digs about his left-wing leanings instead. It may be true that Bernfeld almost entirely dismissed Reich's clinical evidence, primarily because he disdained the way in which Reich conducted his analytical sessions, but a recent article in the *International Journal of Psychoanalysis* points out that Reich himself, although, "he begins [his article on masochism] by emphasizing that the 'theoretical and speculative' trend still lacks any

²²¹ Wilhelm Reich, "Abschließende Bemerkung zu 'Gegenkritik' Bernfelds," *Internationale Zeitschrift für Psychoanalyse* 18.3 (1932): 386-387. Reich is likely referring to the circumstances of Bernfeld's wife abandoning him and his children to move to Russia. Translation my own.

firm basis . . . he goes on to argue not clinically at all but ‘theoretically.’”²²² Reich appears to have had a complicated relationship with the case-study, although they ultimately remain his primary form of evidence prior to the bioelectrical experiments.²²³ Reich certainly did put forward an interesting theory of masochism in his article, but the extent to which it was derived only from an interpretation of the clinical material presented is questionable. Also, the vitriolic turn against Freud’s death drive is unavoidably present, and it makes sense that Bernfeld would pick up on this aspect of Reich’s work, which was quickly becoming an irritating problem for fellow analysts.

Reich’s Expulsion from the International Psychoanalytic Association

Reich recalls his expulsion from the International Psychoanalytic Association, which occurred at the 13th-annual International Psychoanalytic Congress in Lucerne, Switzerland in 1934, as, “so grotesque as to appear incredible to the outsider.”²²⁴ One biographer describes Reich’s ousting as, “a public castration ritual that was, unfortunately, drawn out too long.”²²⁵ According to later recollections, “The administration of the Association had no grounds on which to object to Wilhelm Reich’s scientific and clinical views. On the contrary, over a period of many years, members of the Association, in great numbers, considered his work (theory of genitality and character-analysis) as the consistent development of Freud’s originally revolutionary theory. There were, then, no

²²² Claudia Frank, “On the Reception of the Concept of the Death Drive in Germany: Expressing and Resisting an ‘Evil Principle’?” *International Journal of Psychoanalysis* 96 (2015): 429.

²²³ Reich would pronounce later in life that “correct clinical observation can never lead one astray,” *The Function of the Orgasm*, 53.

²²⁴ Reich, *Reich Speaks of Freud*, 255.

²²⁵ Corrington, *Wilhelm Reich*, 66.

solid grounds for his expulsion.”²²⁶ Responsibility is attributed to Max Eitington, who had secretly negotiated for Reich’s expulsion from the German Psychoanalytic Association a year earlier. However, it is Paul Federn who perhaps had the most explicit anti-Reichian agenda, making several moves to eliminate Reich from positions of power within the psychoanalytic association and frequently complaining of his dislike of Reich.²²⁷

In a document prepared many years after the event, Reich chronicles his “Struggle with Psychoanalysis” as beginning in 1923 when he emphasized the role of genital drives and began to talk about orgasmic potency. He notes, “my struggle [Mein Kampf] since then, first my lack of understanding of the rejection, then acceptance.”²²⁸ From this time, he began to “trim” psychoanalytic theory, eventually arriving at the death drive. This is followed by disbelief in the work of his colleagues.²²⁹ There are several areas in which Reich later sees himself as coming into conflict with the psychoanalytic association: the etiology of neurosis, therapy, drive theory (physiology), and sociological applications.

In reality, many factors contributed to Reich’s expulsion from the psychoanalytic community. Reich’s youngest daughter, Lore, contends that it was Anna Freud who was primarily responsible for having Reich removed, having plotted with Ernst Jones.²³⁰ In

²²⁶ Reich, *Reich Speaks of Freud*, 256.

²²⁷ Sharaf, *Fury on Earth*, 184.

²²⁸ Wilhelm Reich Archives, OI Box 2, (folders 4-9).

²²⁹ Interestingly, on a section pointing out “the failures of the Freudian school,” Reich is able to come up with criticisms of Stekel, Adler, Jung, and Rank, but leaves the space following Ferenczi’s name blank. Nevertheless, he concludes that “all of them were stopped by the barrier of genitality.”

²³⁰ Lore Rubin Reich, “Wilhelm Reich and Anna Freud: His Expulsion from Psychoanalysis,” *International Forum of Psychoanalysis* 12 (2003): 109-117.

his biography of Freud, Jones would later assert that Reich had resigned willingly from the IPV. (There seems to have been legitimate confusion about whether Reich had resigned. In a letter written by Reich in November of 1933, he recollects: “When Dr. Federn introduced the motion that I resign from the IPV in order not to compromise it, I proposed that I was willing to suspend my sociological-analytic publications for one year, provided that the leadership of the IPV took an official stand with regard to my clinical and sociological concepts. I never denied my ‘political’ activity as such; I merely suggested a pause.”²³¹) Lore recalls how traumatic the incident was for Reich, “he went what my friends call ‘ballistic.’ He was totally enraged and fought with my mother [Annie] also when the children were around.”²³² By this point Reich was already experience many frustrations in life, having fled Berlin on 3 March 1933 to escape from the *Sturmabteilung*. He briefly relocated to Copenhagen, staying with his lover Elsa Lindenberg while Annie and the children remained in Vienna with her parents. He would later move to Malmö, Sweden. When his visa expired, he was forced to live illegally in Denmark under a pseudonym. At the Lucerne conference, Reich camped out on the lake while the other analysts stayed in hotels. It was undoubtedly a time of high stress.

German historians have suggested that Reich was expelled because of his anti-Nazi stance and not his communist leanings: Reich’s views, expressed in works like *The Mass Psychology of Fascism* (1933), endangered the existence of the German Psychoanalytic Society, and in order to avoid a ban on psychoanalysis by the Nazis,

²³¹ Wilhelm Reich Archives, Correspondence Box 5, Reich to Hartmann, 14 November 1933.

²³² Rubin Reich, “Wilhelm Reich and Anna Freud,” 112.

Reich was expelled.²³³ This view is supported by other authors who observe that after the consolidation of National Socialism and Austrofascism psychoanalysis could only survive by presenting itself as an apolitical science, completely divorced from anything that could be considered radical.²³⁴ The following incident is telling of how hostile the climate had become:

On 10 May 1933, the books of four psychoanalysts, together with about 400 other authors, were burned in Berlin. These books, by Sigmund Freud, Anna Freud, Siegfried Bernfeld, and Wilhelm Reich, were declared as belonging to Freud's school and accused of 'un-German' spirit with the following words accompanying the burning: '*Gegen die seelenzerfasernde Überschätzung des Trieblebens*' ('Against the soul-destroying overvaluation of instinctual life.').²³⁵

Some scholars have gone so far as to claim that Reich's expulsion marks the un-embodiment of psychoanalysis, a point at which the physical body became completely obsolete and focus was paid exclusively to mental processes.²³⁶ In this framework, Reich

²³³ Karl Fallend, *Der "Fall" Wilhelm Reich: Beiträge zum Verhältnis von Psychoanalyse und Politik* (Giessen: Psychosozial-Verlag, 2002); Bernd Nitzschke, "Psychoanalyse im Nationalsozialismus: Aktuelle Konsequenzen einer historischen Kontroverse: der 'Fall' Wilhelm Reich," *Psychotherapie, Psychosomatik, medizinische Psychologie* 49 (1999): 131 and "Psychoanalysis and National Socialism," *International Forum of Psychoanalysis* 12 (2003): 98-108; and Peglau, *Unpolitische Wissenschaft?* For more on psychoanalysts during the Nazi period, see: Geoffrey Cocks, "Repressing, Remembering, Working Through: German Psychiatry, Psychotherapy, Psychoanalysis, and the 'Missed Resistance' in the Third Reich," in *Resistance Against the Third Reich, 1933–1990*, ed. Michael Geyer and John W. Boyer (Chicago: University of Chicago Press: 1994), 312-324. Peter Loewenberg notes that "Reich was the first to point to the relationship of sexual repression to fascism. While insisting that fascism is a worldwide problem arising from the social repression of natural sexuality, he also traced its specific German etiology to the authoritarian family." In "Psychohistorical Perspectives on Modern German History," *The Journal of Modern History* 47.2 (1975): 230.

²³⁴ James E. Goggin and Eileen Brockman Goggin, *Death of a "Jewish Science": Psychoanalysis in the Third Reich* (West Lafayette: Purdue University Press, 2001), 60; J. Reichmayr and E. Mühlleitner, "Psychoanalysis in Austria after 1933/34," *International Forum of Psychoanalysis* 12 (2003): 119.

²³⁵ Gordana Jovanovic, "Psychoanalysis, Marxism: Once and Again," *Psychotherapy and Politics International* 13.2 (2015): 135-6.

²³⁶ Courtenay Young, "The History and Development of Body-Psychotherapy: The American Legacy of Reich," *Body, Movement and Dance in Psychotherapy* 3.1 (2008): 5-18.

could no longer be tolerated because his existence marked the presence of something undesirable and base within the psychoanalytic establishment itself.

In short, the story of the 1934 Lucerne conference and Reich's expulsion is as follows: A group of leftist psychoanalysts, including Reich, were in communication through a series of *Rundbriefe* circulated under the organization of Otto Fenichel. Disagreement arose as to what position the communist psychoanalysts would present at the conference. Reich and Fenichel also disagreed about their positions vis-à-vis the freedom of speech for psychoanalysts who belonged to the National Socialist party, with Reich feeling that they did not deserve a voice. According to Harris and Brock, "Fenichel responded in a twenty-three page Rundbrief, sent out a week before the IPV's Lucerne meeting. He defended the platform's call for freedom of psychoanalytic expression, and accused Reich of abandoning practical objectives for abstract principles and slogans."²³⁷

Fenichel also refused to rally the recipients of the *Rundbriefe* or to put up any sort of formal protest against a burgeoning conspiracy against Reich.²³⁸ The German Psychoanalytic Society had declared a month prior to the conference that they would not print Reich's name as one of their members. At the conference, Reich discovered he had in fact been purged from the group an entire year prior, and the IPV recognized this expulsion. Reich retained hope that he could become a member of the Norwegian

²³⁷ Harris and Brock, "Freudian Psychopolitics," 600.

²³⁸ According to one historian, the Fenichel/Reich group split because Reich was so forceful in having everyone follow his own ideas, especially his orgasm theory. The *Rundbriefe* was carried out for nearly twelve years, with letters being circulated roughly once a month to six analysts comprising the Marxist opposition. For more on Fenichel and his *Rundbreife*, see: Russell Jacoby, "The Secret Freudians and Their *Rundbriefe*," in *The Repression of Psychoanalysis: Otto Fenichel and the Political Freudians* (New York: Basic Books, 1983), 76-97. Fenichel actually believed that it was a marker of good health if one was "able to tolerate some dissatisfaction in sexual desire without disturbance." See Goggin and Goggin, *Death of a Jewish Science*, 63.

Psychoanalytic Society, but they were told they would not be recognized as official members of the IPV if they allowed Reich to join their ranks. During a hearing held by a high-level subcommittee of the IPV, “Reich stated that he understood his exclusion if opposition to the death instinct concept and Freud’s theory of culture were incompatible with membership. At the same time, he considered himself the legitimate developer of natural-scientific psychoanalysis and, from that viewpoint, could not concur with the exclusion.”²³⁹ Despite this wording, the IPV declared Reich had willingly resigned, and Fenichel supported this pronouncement.²⁴⁰ This was an act that Reich would never forgive.

Reich spent the summer after the Lucerne conference in Copenhagen. Afterwards, he immigrated to Norway with Elsa, where he founded a new group for himself and began focusing increasingly on the physiological. Reich had been invited to Oslo by Norway’s first professor of psychology, Harald K. Schjelderup:

In February 1933, Hitler was appointed *Reichskansler*. By April, the *Gleichschaltung* laws were passed, requiring all professional organizations to be *judenfrei*. As most of the members of the German Psychoanalytic Society were Jewish, a mass emigration of psychoanalysts took place, first from Germany and later from central Europe. It was in this climate that Schjelderup invited a group of German Jewish psychoanalysts to Oslo during Easter 1934 to discuss the idea of immigrating to Norway. The meeting took place at Schjelderup’s Department of Psychology at the University of Oslo and among those present were Otto Fenichel, Wilhelm and Annie Reich, George Gerö, Edith Gyömrö (Gluck), Lotte Liebeck (later Bernstein), Stefi Pedersen, Edith Jacobsen, and Nic Waal.²⁴¹

²³⁹ Sharaf, *Fury on Earth*, 187.

²⁴⁰ Harris and Brock, “Freudian Psychopolitics,” 602.

²⁴¹ Jon Sletvold, *The Embodied Analyst: From Freud to Reich to Relationality* (New York: Routledge, 2014).

Once there, he and Fenichel continued to butt heads over the allegiance of Norwegian psychoanalysts, and eventually Reich was expelled from the Rundbriefe group as well. On 15 December 1934, Reich would note in his journal: “Broke with Fenichel—that coward.”²⁴² Fenichel, who was residing in Oslo, was unhappy that Reich chose to move there as well. A letter from Lotte Liebeck, a German psychoanalyst and student of Reich’s, reads: “Otto [Fenichel] is in a very dreadful situation. . . . I heard that he was not very pleased with your going to Oslo, and that he evidently felt threatened by you in his whole way of being and living, probably for a long time now. *I think that he experiences something in you which ruins his whole life.*”²⁴³ Reich would eventually gain the allegiance of many young Norwegian psychoanalysts, further upsetting Fenichel and eventually driving him from the country. Anoes declares, “Fenichel was far less charismatic than Reich and failed to gain the support of the younger generation. It is said that he left Norway as a frustrated and bitter man.”²⁴⁴ Reich’s sojourn in Norway would be a time of profound insights but also deep sadness, as he had divorced from Annie in 1933, and she refused to let his two children visit him in Oslo.

²⁴² Wilhelm Reich Archives, Personal Box 5a. Fenichel was no fan of Reich’s either.

²⁴³ Wilhelm Reich Archives, Correspondence Box 5, letter dated 27 November 1934.

²⁴⁴ Randolph Anoes, “The Development of Psychoanalysis in Norway: An Historical Overview,” *Scandinavian Psychoanalytical Review* 3 (1980): 69.

Chapter 3:
The Orgasm as a Basic Life Function

During years leading up to World War II there was an explosion of interest in bodily therapy that engaged psychoanalysts, psychiatrists, physiotherapists, and dancers.¹ Reich became immersed in the potentials of bodywork while he was living in Germany and carrying on an affair with the communist dancer Elsa Lindenberg. Lindenberg would follow Reich to Norway and establish her own highly influential school of dance therapy there.² At the same time that Reich was carrying out his early experimental work, he was also developing his technique of “vegetotherapy.” An active form of therapy in which the therapist uses massage, vocalizations, and even actively antagonizes the patient in order to elicit an emotional reaction and activate the orgasm reflex.

Reich discovered the orgasm reflex in 1935, and it became the cornerstone of his character analytic vegetotherapy. It is based in the idea that sexual energy can be bound in muscular tension forming a “character armor” that binds the individual’s personality. The orgasm entailed involuntary contractions of the genital musculature, but this same spontaneous pulsatory movement could be experienced in any muscle or organ.³ When human beings were sexually repressed, various organs in their body lost their motility, their ability to pulse according to the orgasm formula, and became blocked. Through all sorts of means, including physical and emotional manipulation, the orgasm reflex could be elicited, and with each successful occurrence it freed the body a bit from the shackles of its inflexible parts. Reich thought that during orgasm there is a wave movement that passes through the body, originating from the vegetative center of the organism located in

¹ Michael Coster Heller, “The Golden Age of Body Psychotherapy in Oslo,” *Body, Movement and Dance in Psychotherapy* 2.2 (2007): 2.

² Heller, “The Golden Age of Body Psychotherapy in Oslo,” 12.

³ Eventually, Reich would find this to be a cosmic force: “All of us are merely a specially organized electric machine which is correlated with the energy of the cosmos.” See Reich, *The Function of the Orgasm*, 42.

the abdominal region.⁴ This wave can be blocked by the muscular armor, becoming unable to reach the genitals to elicit the necessary pelvic motions implicated in orgasm. In the orgasm reflex, the pelvis is pushed forward and moves in a free, undulating rhythm—the antithesis of the *arc de cercle* so characteristic of hysteric attacks.⁵

By dissolving muscular tensions, Reich was freeing the body to experience the orgasm reflex, what he considered to be the most natural and health-giving expression of organic life. Although he called this form of therapy vegetotherapy, “‘orgasmotherapy’ would have been a much better, indeed more correct term, for this medical technique.”⁶

The process is described by British analyst Charles Rycroft below:

vegetotherapy with Reich was a highly dramatic, direct encounter with Reich’s personality, and . . . its effectiveness depended so much on the patient’s capacity to believe that Reich radiated love as on any theories that Reich as a scientist might happen to be holding at the time. . . . [Reich] believed that the unconscious was located in the parasympathetic system . . . Vegetotherapy was therefore rationalized theoretically as an attempt to liberate the expansive, pleasure-giving, outgoing, life-enhancing forces contained in the parasympathetic vegetative centers from the restrictive, shrinking, inhibiting effects of sympathetic stimulation.⁷

The actual technique of vegetotherapy will not be dealt with here, instead emphasis will be placed on the physiological ideas that influenced Reich’s understanding of the nervous system and the relationship between orgasm and bioelectricity that led him to discover the orgasm reflex and prompted his first encounter with the laboratory.

⁴ Reich has some rough drawings of this “vegetative movement” in his notebook. Wilhelm Reich Archives, OI Box 6.

⁵ Reich, *The Function of the Orgasm*, 350.

⁶ Reich, *The Function of the Orgasm*, 5.

⁷ Charles Rycroft, *Wilhelm Reich*, 2nd ed. (New York: Viking Press, 1971), 70-71.

Discovering the Function of the Orgasm

In dialectical materialism, Reich found a way to articulate his thoughts, although he admits, “I was familiar with dialectical materialism, but I did not know how I could apply it in natural scientific research.”⁸ He began by thinking about the unity of opposites, examining the processes of charge and discharge, tension and relaxation, and identifying their functional unity with the emotions of pleasure and anxiety. All of these opposites were united by the fact that they were manifestations of a single phenomenon: bioelectricity. Although affect was a quality, its quantity must be determined by the amount of quantifiable electric energy generating the emotion. The bioelectricity of the organism could manifest as pleasure or anxiety depending on whether or not the autonomic nervous system responded with expansion or contraction. Chronic contraction, which resulted in sympatheticonia and neurosis, could be transformed through the process of expansion, relaxation, and release. It could be healed by the experience of orgasm, specifically the “orgasm reflex.”

Reich began what appears to be a rather voracious reading program that would result in the first half of 1934 in two self-published theoretical papers that set up the basis for his laboratory experiments. The first was “Der Orgasmus als elektrophysiologische Entladung” (“The Orgasm as Electrophysiological Discharge”), and the second was “Der Urgegensatz des vegetative Lebens” (“The Basic Antithesis of Vegetative Life Functions”).⁹ Reich was concerned primarily with the question of pleasure and anxiety,

⁸ Reich, *The Function of the Orgasm*, 264.

⁹ Both of these articles are reprinted in *The Bioelectrical Investigation of Sexuality and Anxiety* (New York: Farrar, Straus and Giroux, 1982). They were originally published by Reich’s Sex-pol Verlag in Copenhagen and printed in the *Zeitschrift für Politische Psychologie und Sexualökonomie* (Journal for Political Psychology and Sex-Economy).

tension and relaxation, as outlined in his essay on dialectical materialism. Sharaf notes, “characteristically, Reich picked up a question Freud had dropped. And he did so in an effort to affirm the younger Freud against the older Freud and the analytic establishment that had just expelled [him].”¹⁰

He incorporated several distinct strands of thought into his developing work, most prominently theories about the autonomic nervous system, movement and directionality of energy flow in unicellular organisms, colloid chemistry, and of course, bioelectricity. These ideas were all linked by cell theory, especially the concept of protoplasm.¹¹ They were also connected by their dialectical properties: contraction and expansion, sympathetic and parasympathetic, positive and negative charges, and center and periphery. Understood by Reich as a universal contractile biological substance present in both plants and animals, the protoplasm possessed all of these different contradictions within itself and it was animated, given actual life, by the playing out of these contradictions.¹² Protoplasm was a perfect dialectical object. Reich understood colloid chemistry as capable of explaining protoplasmic movement. Essentially, we can

¹⁰ Myron Sharaf, *Fury on Earth: A Biography of Wilhelm Reich* (New York: De Capo Press, 1994), 207. One should mention here that before founding psychoanalysis, Freud worked in histology with the protoplasm, promoting the fibrillary theory on the structure of the protoplasm. See Lazaros C. Tiarhou and Manuel Del Cerro, “The Histologist Sigmund Freud and the Biology of Intracellular Motility,” *Biology of the Cell* 61 (1987): 111–114.

¹¹ Cell theory and protoplasm are generally juxtaposed as competing theories, with cell theory and especially the discovery of the cell membrane “defeating” protoplasmic theories in the first decades of the twentieth century. Debate still continues today, see: Gilbert N. Ling and Margaret M. Ochsenfeld, “A Historically Significant Study that at Once Disproves the Membrane (Pump) Theory and Confirms that Nano-protoplasm is the Ultimate Physical Basis of Life,” *Physiological Chemistry and Physics and Medical NMR* 40 (2008): 89–113. Reich does not seem to find any inherent difficulty in reconciling cell theory with the protoplasm, perhaps it is his dialectical materialist approach that allows him to reconcile these two ideas.

¹² See John R. Baker, “The Cell-theory: A Restatement, History, and Critique, Part II,” *The Quarterly Journal of Microscopical Science* 90 (1949), 87–108.

understand the colloid chemistry appropriated by Reich as a physiological theory privileging the protoplasm as the most important substance of life. Seeing himself as the true inheritor of Freud's legacy, much later Reich would ask: "Do you know who has kept libido theory alive and working today? And who developed it? I regard myself as the only one who did it. Nobody else. Is that clear? . . . what Freud called libido was not a chemical, but a movement of the protoplasm."¹³

The bioelectrical experiments were in part a response to Freud's "Beyond the Pleasure Principle," discussed in the previous chapter. In this work, Freud provided several riddles that he supposed could only be solved through experimental and/or biological methods. Freud described the baffling nature of the sexual drive, and in the conclusion of the essay he outlined a new method of inquiry into the problem of sexuality, masochism, and libido theory:

Here might be a starting-point for fresh investigations. Our consciousness communicates to us feelings from within not only of pleasure and unpleasure but of a peculiar tension which in turn can be either pleasurable or unpleasurable. Should the difference between these feelings enable us to distinguish between bound and unbound processes of energy? or is the feeling of tension to be related to the absolute magnitude, or perhaps to the level, of the cathexis, while the pleasure and unpleasure series indicates a change in the magnitude of the cathexis *within a given unit of time*?¹⁴

Reich was far more attentive than Bernfeld in seeking out biological models to confirm or disconfirm Freud's theory. After all, the concept of entropy does not emerge within Freud's own analysis of the death drive, but rather it was made analogous by Bernfeld and Feitelberg for the purpose of their experiment. Although Reich had been

¹³ Wilhelm Reich, *Reich Speaks of Freud* (New York: Farrar, Straus and Giroux, 1967), 119-120.

¹⁴ Sigmund Freud, "Beyond the Pleasure Principle," *The Standard Edition of the Complete Psychological Works of Sigmund Freud*, Volume 18 (1920), 63. Emphasis original.

expelled from psychoanalysis and Freud offered him no help in obtaining visas or a safe place to work and live (Malinowski would be the only prominent scholar to extend Reich this courtesy), Reich was still operating very much within a Freudian framework.

Although he does not cite Weismann or focus on the germ-plasm/somatic cell dichotomy, he does refashion this into a concept of core and periphery.¹⁵ Similarly, he uses the work of Hartmann, cited by Freud, and other biologists working with protists and unicellular organisms in an effort to bring his experiment in line with Freud's original train of thought.

In a letter to his colleagues in Denmark, Norway, and Germany, Reich notes:

But the contradiction between the death-instinct theory and the orgasm theory, between the biologicistic and the sociological concept of sexual repression, between the bourgeois-metaphysical and the dialectical-materialist ideology had to be worked out with equal clarity. I know from experience that there is no better way to serve Freud and psychoanalysis than to separate the scientific from the non-scientific within the doctrine of psychoanalysis.¹⁶

The fact that Reich was conducting experiments in response to Freud is further confirmed from a typed note, composed at a later date, in the archives that reads:

Freud's Rejection of Reich's Conception of Anxiety
The K-Ca Theory
The unity of the function of the vegetative system
The electrophysiological nature of sexuality¹⁷

¹⁵ Weismann's belief in the power of the germ-plasm has been labelled by some as a revival of preformationist ideas. See Frederic Weizmann, "Early Development and Psychology: Genetic and Embryological Influences, 1880–1920," in *The Transformation of Psychology: Influences of 19th-century Philosophy, Technology, and Natural Science*, ed. Christopher D. Green, Marlene Shore, and Thomas Teo (Washington, DC: American Psychological Association, 2001), 220–221.

¹⁶ Reich, *Reich Speaks of Freud*, 195–6.

¹⁷ Wilhelm Reich Archives, OI Box 2

These three topics will be dealt with in this chapter. To briefly summarize, the electrophysiological nature of sexuality refers to Reich's hypothesis that bioelectricity is the animating force behind sexual energy or libido. The concept of the unity of function is related to Reich's dialectical materialist understanding of the autonomic or vegetative nervous system, in which the parasympathetic and sympathetic nerves form functional opposites. Finally, the K-Ca theory presents colloid chemical evidence for this antithesis by exploring how potassium and calcium mimic the function of the autonomic nervous system. Reich explicitly discusses the meaning of this theory in relation to the death drive in a footnote:

Is the psychoanalytic hypothesis of a death instinct confirmed by this physiological basis of anxiety? Someone who believes this might say: if the accumulation of the K-ion group effect represents the sexual function, the Ca-ion group effect would be the death function, the dying of the tissues. I would counter this . . . the K-ion concentration is felt subjectively as instinctual urge; the Ca-ion concentration, on the other hand, is not experienced as a drive, which would correspond to a death *wish*, but rather as *anxiety*. The death instinct is not 'mute,' but instead what is called the death instinct, namely the *retraction* of life energy, manifests itself clearly as anxiety. . . . Thus, we cannot find any arguments here in favor of the theory of a death instinct which would offer a defense of the life-inhibiting effects of society and disease.¹⁸

The Orgasm as Electrophysiological Discharge

In the first essay, "The Orgasm as Electrophysiological Discharge," we see Reich connecting the orgasm to three distinct areas: the unconscious psychic life, the social conditions of people's sex lives, and the physiology of the sexual function.¹⁹ This is reflected in a note written by Reich on the schema of sex-economy where he correlates

¹⁸ Reich, *Bioelectrical Investigation*, n. 17. Emphasis original.

¹⁹ Reich, *Bioelectrical Investigation*, 3.

the ego with psychic life, the super-ego with society, and the id with physiological functioning.²⁰ Reich's main concern, first and foremost, is whether sexual tension and relaxation are mechanical in nature. The fact that gentle, slow friction tends to produce greater erections than hard and fast rhythm is an indicator to Reich that there is something occurring that goes beyond simple mechanics. Furthermore: "The crucial problem of orgasmic impotence was still unsolved: it is possible for the genital organs to be filled with blood without a trace of excitation."²¹ Reich suggests bioelectricity must be the key factor, and it can explain additional observations such as the fact that sexually compatible people seem drawn to each other (and their genitals are similarly drawn to each other like magnets during coitus),²² that a lubricating agent often increases feelings of pleasure, and that, according to Reich, there is a refractory period that follows orgasm.

He proposes his "orgasm formula"—mechanical tension → bioelectrical charge → bioelectrical discharge → mechanical relaxation—and suggests that it "must be part of the natural order of things, and in fact an elemental part."²³ His rhetoric here very closely resembles that used by Freud in discussing the elementary nature of the death drive as a universal biological phenomenon. Mechanical tension is ascribed to parasympathetic excitation. The process of biological charge and discharge is carried out through the "involuntary contractions of the smooth and striated genital musculature," culminating in tetany and muscle clonus.²⁴ Tetany is ascribed to climax, and its resolution brings about

²⁰ Wilhelm Reich Archives, OI Box 2, Folder 5.

²¹ Reich, *The Function of the Orgasm*, 272.

²² The idea of some sort of magnetization as the source of sexual attraction was not unique to Reich.

²³ Reich, *Bioelectrical Investigation*, 9.

²⁴ Reich, *Bioelectrical Investigation*, 11. Emphasis original.

the muscle clonus that is orgasm. Mechanical discharge is achieved as the clonic muscle contractions transport semen out of the penis. Forepleasure or “tension pleasure” is achieved through the bioelectrical charging and discharging, whereas end pleasure or “relaxation pleasure” is produced through muscular discharge.

In response to this entirely hypothetical thought experiment, Reich received a thoughtful letter from Ewald Bernhard Böhm, who became famous for his continuation of the Rorschach method in Europe during the 1950s–70s.²⁵ Böhm completed his doctoral thesis at the Friedrich Wilhelm University in Berlin in 1921 on the topic of an anthropological comparison of the jaws and teeth of prehistoric and modern men.²⁶ In 1930 he co-published a book with Magnus Hirschfeld on sex-education that promoted birth control and women’s rights.²⁷ He published nothing more until 1951, when he issued a textbook on psycho-diagnosis using the Rorschach test.²⁸ It is unclear what he was working on in the intervening time, but as is clear from the exchange below that he was at least briefly involved in Reich’s Sex-pol movement.

The correspondence between the two men is translated in full, as it gives an impression both of how Reich’s work fits into a larger train of thought about sexuality occurring at that time, and also because it shows the somewhat dismissive way in which

²⁵ For a recent work on Rorschach, see Damion Searls, *The Inkblots: Hermann Rorschach, His Iconic Test, and the Power of Seeing* (New York: Crown, 2017).

²⁶ Ewald Böhm, *Vergleichende Untersuchung der Kiefer und Zähne des prähistorischen Menschen auf der einen und des jetzt lebenden wilden und modernen Menschen auf der anderen Seite*, Ph.D. diss., (Friedrich-Wilhelms-Universität zu Berlin, 1921).

²⁷ Magnus Hirschfeld and Ewald Bohm, *Sexualerziehung: Der Weg durch Natürlichkeit zur neuen Moral* (Berlin: Universitas, 1930).

²⁸ Ewald Bernhard Bohm, *Lehrbuch der Rorschach-Psychodiagnostik für Psychologen, Ärzte und Pädagogen* (Bern: H. Huber, 1957, c. 1951).

Reich could treat his admirers. Furthermore, this correspondence provides a vivid snapshot of how people were thinking and communicating about sexuality at this time. We see that personal experience plays a major role in the way researchers theorized about sexuality. There is also a great excitement surrounding the potentials of electricity, and in Bohm's discussion of Hirschfeld's concept of an "electric 'fluid'" we can see that research in sexuality at times seemed to border on the mystical.

Kobenhavn d. 8.7.34
% Rindebaek
Linnesgade 16 B.

Dear Doctor Reich!

I have read with great interest your essay on the orgasm as electrophysiological discharge in the first issue of the new journal of political psychology and sexual-economy. There are a number of issues and additions that occurred to me, and I would like to provide you with the following:

1) Page 39, Section A: According to the prevailing view the orgasm is connected with the ejection of Kristeller's mucus plug,²⁹ which allegedly neutralizes the previously acidic vaginal secretions (see, for example, Kurt F. Friedlander, *The Impotence of Women*, page 28).

- a) Is it not possible, that this neutralization of vaginal secretions (if ever proven) can also be based on electrical phenomenon?
- b) What role would Kristeller's theory then play?

2) On page 34 "After orgasmic relaxation ... the psychological idea of the act cannot be reproduced or it is affectively completely dull." From page 41, "no idea ... can for some time charge the parasympathetic system." - In these sentences is there not a contradiction to a statement you made elsewhere? ("Sexual Arousal and Sexual Gratification," ["Sexualerregung und Sexualbefriedigung,"] page 54) "Sexual intercourse should conclude only with a lust-full image for more intercourse." If this contradiction really exists and it is not simply a misunderstanding on my part, it seems to me your new viewpoint is the more accurate.

²⁹ Samuel Kristeller (1820-1900) was a German gynecologist and politician. He described the role of mucus in both the pregnant and non-pregnant uterus. He commented on the role of hormones in changing the consistency of vaginal mucus throughout the menstruation cycle.

3) Just as for women there are different degrees of orgasm, from the very different stages of imperfect orgasm to full orgasm, so are there different degrees for men. Based on my own observations I would like to raise the question, whether or not by the absence of or a faulty orgasm in the female the orgasm of the man is also ruined. This is supported by the following observation: During the full orgasm of the woman, in both partners a quiet complacency sets in, which passes very quickly into sleep without the need for any other intermediate manipulations. The post-coital position of man compares to that of the women with an absent or faulty orgasm in many ways; he might not be able to fall asleep easily (one feels sometimes a tingling in the skin like before a thunderstorm), and there also occurs in him a desire to be stroked (at some secondary erogenous zone). The passive desire for petting is not present in either partner following the full orgasm of the woman.

Your theory of electricity would be an excellent explanation for these observations, and is therefore well-worth investigating.

I must in this context point out that the routine prostitute, who almost never experiences an orgasm with her customers, pre-supposes her customers' need for stroking (on the back or something similar) as self-evident.

4) Another question would be the atmospheric influences on orgasmic potency.

It seems indeed likely from the outset, that an intensive solar radiation (insofar as it is subjectively felt as pleasant) increases tension, thus increasing potency. That would be one more argument for reasonable nudism.

What influence does an undischarged thunderstorm have on orgasmic potency?

Is there ever an induction from outside in organic electricity?

5) Magnus Hirschfeld discusses in his "The Science of Sex," Volume 1, page 348, the detrimental effect of mental closeness of the elderly on young people (sleeping together, etc.) and the reverse, the so-called "Shunammitism" (see 1 Kings 1:1-4).³⁰ No doubt he has, in his presentation, not provided the correct psychological background. Nonetheless, we cannot completely dismiss his ideas, when he brings them up in connection with an electric "fluid" emanating from human body.

³⁰ "Now king David was old and stricken in years; and they covered him with clothes, but he gat no heat. Wherefore his servants said unto him, Let there be sought for my lord the king a young virgin: and let her stand before the king, and let her cherish him, and let her lie in thy bosom, that my lord the king may get heat. So they sought for a fair damsel throughout all the coasts of Israel, and found Abishag a Shunammite, and brought her to the king. And the damsel was very fair, and cherished the king, and ministered to him: but the king knew her not." 1 Kings 1:1-4, King James Version.

Admittedly, one certainly should not take this “fluid” too seriously, but I can imagine very well that the common psychic closeness of people of very different ages (and genders), without sexual intercourse, can have pleasant consequences for the younger part, not only psychologically but also on electro-physiological grounds. This seems to me worth consideration and verification.

6) Your conclusion (page 43) gave me the assumption that the tension-charging process is to be regarded as a case of a universal biological principle of rhythm, as pointed out by Klages. Yes, probably on closer examination the special rhythmic phenomenon of organic life (breathing, digestion, movement and calm, work and sleep, etc.) and even the cellular processes have more in common with the orgasmic tension-charging process than we ever dreamed.

In any case, it seems to me that further continuation of your studies is extremely important, especially with regards to the close connection between biology and psychology with the so-called exact sciences.

I would be much obliged if you have the opportunity to respond to the questions touched upon here.

Best wishes,

Yours,
Ewald Bohm

The only reply from Reich preserved in the archives is a curt response to a manuscript that Böhm submitted to Reich’s journal *Zeitschrift für Politische Psychologie und Sexualökonomie*.

8.VII.34

Wilhelm Reich
Postbox 827
Kopenhagen

Dear Comrade Bohm!

I have read your manuscript on behalf of the journal’s editors and found the topic very interesting and also important. However, I think that the effort that we would put into correcting your confused notions about the

relationship between psychoanalysis and Marxism would not pay off. Perhaps you will be able to understand more concretely what I mean if you re-examine our writings.

Your manuscript is enclosed.

With best wishes.

There is one additional letter from Böhm contained in the archives, and it shows the effect that Reich's dismissal had. It also becomes clear that Böhm is more than just an admirer of Reich, but is also a patient.

Köbenhavn, d. 29.10.34
c.o Mörch
Stuðiestraede 11.

Herrn
Dr. Wilhelm Reich
Verlag für Sexualpolitik
Postbox 827
Köbenhavn

Dear Dr. Reich!

You asked me some time ago to find confirmations of your electricity theory in the literature. Unfortunately, I do not have the time to do this in a systematic way, since I am so busy right now with completely different problems and will be so even next year. By chance, I recently found in issue 31 of "Tank" an important point for you. It is in the third part of a published serial from Oslo that deals with currents, titled "Soul Research," and translated into German as follows:

"Energy itself we cannot define. Bose announces that, for example, in the case of the sudden death of plants, such large amounts of electricity are freed that 500 dying peas would kill a human being, if one could concentrate the sum of this energy and isolate it. But we know nothing about these electrical vibrations, which correspond to our vital energy. It would be natural to think that they emerged from a catalytic fission process, but we do not know this for sure, and that is less important. We describe them as undulations and we leave their qualities undefined. This is because the specifically vital powers lie in engrams, and animate the energy..."

So it seems as if there are ways in which Bose provides for you important information on biology electricity-processes. The Bose I am referring to here is someone surely known to you, Jagadis Chunder (or Chandra) Bose, who leads the largest plant physiological institute in the world, in Calcutta.³¹ There is a book about him written by Patrick Geddes, “The Life and Work of Sir Jagadis C. Bose.” Red Apple Press, Erlenbach-Zurich, 1930.³²

Would you or Gerö have free time for an analytic session in the foreseeable future? There have been some changes that occurred for me, and so I will stay here for at least one year. Whether analysis can be afforded this winter is a different question. I have not yet ruled it out, because I am considering some possibilities.

Best Wishes.

Yours,
Ewald Bohm³³

We see in this correspondence certain unwillingness on Reich’s part to engage in collaborative work, as well as the obvious stiffness with which he deals with the work of others. He appears to have closed himself off to possible academic collaboration with Böhm by dismissing his potential journal contribution so curtly. Böhm displays certain misogynist tendencies in his communications that may have disagreed with Reich, but he appears to have a deep understanding of Reich’s basic hypotheses and is familiar with the application of electrical concepts to the subject of sexuality. Reich recognizes his potential, perhaps attempting to use his charismatic power to get some free research

³¹ On the interaction between Indian and German thinkers in the period from 1880 to 1945, see Kris Manjappa, *Age of Entanglement: German and Indian Intellectuals across Empire* (Cambridge, MA: Harvard University Press, 2014).

³² It is interesting that Bohm mentioned Bose, a controversial physicist turned physiologist who saw electricity a source of unity in all matter. For more on Bose: Bijoy Mukherjee, “Experiments and Research Programmes: Revisiting Vitalism/Non-Vitalism Debate in Early Twentieth Century.” *Argument: Biannual Psychological Journal* 1.2 (2012): 171-197.

³³ Wilhelm Reich Archives. Correspondence Box 1 (1929-1934), General Correspondence. Translation my own.

assistance. But, for political reasons related to Böhm's understanding of Marxism, and perhaps for more complicated reasons involving the patient-analyst power dyad, Reich disturbs the relationship and ultimately alienates Böhm. This sort of communication style would repeat itself in Reich's relationship with the physiologists assisting him in the actual bioelectrical experiments. Reich seems to have demanded participation and subscription to his Sex-pol activities and journal, while at the same time dismissing the work of others as confused or immature. In this way, Reich may have contributed significantly to his own intellectual isolation.

The correspondence is also interesting for what it reveals about the treatment of sexuality in the early twentieth century. Sexologists and psychologists were thinking very broadly about key issues and deriving evidence from a wide range of sources. From mucus plugs to solar radiation to biblical scripture, no phenomenon or clue was too small or unimportant in the search for fundamental truths about sexuality.

The Vegetative Nervous System

In Reich's second thought experiment, "Sexuality and Anxiety: The Basic Antithesis of Vegetative Life," he relies on a number of sources to develop a basic schema of life functioning. It is worthwhile to examine his sources on the autonomic nervous system and on unicellular organisms before explaining the hypotheses he came up with. Very little was known about the vegetative, or autonomic, nervous system prior to 1800.³⁴ Early theories of its function put forward by Bichat held sway until 1880. A

³⁴ For an overview of the autonomic nervous system pre-1800, see J.N. Langley, "Sketch of the Progress of Discovery in the Eighteenth Century as Regards the Autonomic Nervous System," *Journal of Physiology* 50 (1916): 225–258. Also Chandler McC. Brooks and Horst Seller, "Early and Late Contributions to our

vitalist, according to Hein, Bichat “believed that organic tissues possessed vital properties which were distinct from and irreducible to their physical qualities.”³⁵ Bichat thought that the autonomic nervous system was a completely independent entity, with no relationship to the brain or spinal cord (central nervous system).³⁶ Bichat’s system relied on three principles: “(1) fundamentally, life could be characterized as resistance to death, that is, opposition to decomposition; (2) life was made up of two components, animal (somatic) and organic (vegetative); (3) tissues had two vital properties, sensibility and contractility.”³⁷ Animal life was associated with the brain, and vegetative life was associated with the heart.³⁸ Reich repeats this dichotomy, associating voluntary muscle innervation with the “animal part of man,” and the involuntary and unconscious innervation of the smooth musculature and glands with vegetative functions.³⁹

Ludwig Robert Müller (1870–1962), a professor of internal medicine from Bavaria and brother of Friedrich von Müller, was Reich’s primary source of information on the autonomic nervous system.⁴⁰ Reich cites the third edition of his popular work,

Knowledge of the Autonomic Nervous System and its Control made by German Scientists,” *Journal of the Autonomic Nervous System* 3 (1981): 105–119.

³⁵ Hilde Hein, “The Endurance of the Mechanism-Vitalism Controversy,” *Journal of the History of Biology* 5.1 (1972): 159.

³⁶ Edwin Clarke and L.S. Jacyna, “The Vegetative Nervous System,” in *Nineteenth-century Origins of Neuroscientific Concepts* (Berkeley: University of California Press, 1987), 308.

³⁷ Clarke and Jacyna, “The Vegetative Nervous System,” 321.

³⁸ E.H. Ackernknecht, “The History of the Discovery of the Vegetative (Autonomic) Nervous System,” *Medical History* 18.1 (1974): 3.

³⁹ Reich, *Bioelectrical Investigation*, 56.

⁴⁰ Both boys were born to a father who served as the head of a medical department in Augsburg. The older Friedrich is perhaps the better remembered of the two, becoming famous for his recognition of uvular bobbing in patients with aortic insufficiency (“Müller’s sign”) and eventually being knighted in 1907 and eventually becoming a privy councilor in Bavaria in 1913.

Lebensnerven und Lebenstrieb, a collection of essays written by prominent physiologists including R. Greving, Ferdinand Hoff, Friedrich Jamin, and Ernst Schwab, which he purchased in late November of 1935, and he developed a table representing the antithesis of the parasympathetic and sympathetic nervous system based on this work (fig. 3.1).⁴¹

Sympathetic Action		Organ		Parasympathetic Action
Inhibits all gastro-intestinal movements. Reduces digestive secretion.	-	Gastro-intestinal tract from esophagus to rectum, liver, pancreas, kidneys, all digestive glands	+	Stimulates movements and functions.
Stimulation (<u>Increased adrenalin secretion</u>)	+	Adrenal glands	-	<u>Decreases adrenalin secretion.</u>
Inhibits opening musculature; stimulates closing musculature (Stops urination and defecation) ?	- +	Urinary Bladder	+	Stimulates opening musculature.
Tenses unstriated musculature. Reduces glandular secretions; makes anemic. <u>Reduces sexual feeling.</u>	-	Female sex organs	+	Relaxes closing musculature (Permits urination and defecation) Relaxes unstriated musculature. Increases glandular secretion. Increases blood supply. Increases sexual feeling.
Tenses unstriated musculature of scrotum, reduces glandular secretion, anemia of parts, flaccid penis. <u>Reduced libido.</u>	-	Male sex organs.	+	Relaxes unstriated musculature. Increases glandular secretion. Increases blood supply; rigid penis. <u>Increased libido.</u>

Figure 3.1: Reproduced from page 2 of a “Table of the Functioning of the Autonomic Nervous System,” originally titled, “Scheme of the Sexual Economy of the Autonomic Nervous System. Wilhelm Reich Archives, Manuscript Box 8, Folder 3.

Described in a tribute article on the occasion of his 85th birthday as “a living symbol of the history of medicine,”⁴² Müller became attracted to neurology after observing the detailed case presentations given by Charcot at the Saltpêtrière.⁴³ Similarly, he became an ardent disciple of Ernst A.G.G. von Strümpell after he saw him

⁴¹ Wilhelm Reich Archives, Correspondence Box 8 P1, Communication with Oscar Rothacker: Buchhandler und Antiquariat für Medizin, November 27th, 1935. The first edition of this work was titled *Über das vegetative Nervensystem* (1920), the second edition, *Lebensnerven* (1924), and finally the third edition came to be published as *Life Nerves and Life Instincts*. Ludwig Robert Müller, *Lebensnerven und lebenstriebe* (Berlin: J. Springer, 1931).

⁴² F. Hoff, “Gedenktage: Ludwig Robert Müller zum 85. Geburtstag.” *Deutsche Medizinische Wochenschrift* 80.16 (1955): 649.

⁴³ Bernhard Neundörfer and Max J. Hilz, “Ludwig Robert Müller (1870-1926): A Pioneer of Autonomic Nervous System Research.” *Clinical Autonomic Research* 8 (1998): 2.

demonstrate the hysterical etiology of leg palsy during a court trial. Müller believed, “that there are vegetative centers embedded into the grey matter along the entire central canal of the spinal cord . . . He assumed that these centers were reflex centers receiving centripetal impulses from the skin and the internal organs and emitting centrifugal impulses innervating the smooth muscles and the glands.”⁴⁴ Although the choice of the term “Lebensnerven” was a deliberate attempt by Müller, in later life, to move away from the concept of the vegetative nervous system and speak more towards the complexity of human life, Reich never adopted the term “life nerves” in his work. However, Reich does show a clear appreciation of the dialectic between centripetal and centrifugal impulses

In his notes, there are several quotations that Reich has pulled from Müller as being particularly important to his work:

... A preponderance of parasympathetic innervation causes pleasurable sensations, the affirmation of life. A feeling of regalement and refreshment follows abundant sleep. The appetite, the desire for food, is caused by the Vagus nerve and the contractions of the empty stomach. Even all the signs of sexual desire, the dilation of the vessels of the Corpus cavernosa, the expulsion of the semen, the eversion position of the labia, are caused by excitation of the nerves corresponding to the parasympathetic ‘sacral autonomic’ system. Conversely, all unpleasant sensations are accompanied by an increase in sympathetic tone. During fright, sympathetic vasoconstriction drives the blood from the skin vessels. When anger occurs, as Cannon has shown, the release of adrenaline into the bloodstream increases the sympathetic tone, bulges the eyes, and improves hearing, and the performance of the striated muscles. Grief causes weight loss through a reduction of appetite and an increase in the ‘dissimilatory,’ ‘catabolic’ metabolism. Fear of danger triggers, through the sympathetic system, erection of the hair, pallor of the face, and cold sweats. Unpleasurable ideas prevent the drive governing the desire for sex, and preclude the sympathetic contraction of the smooth musculature of the external genitalia and the sympathetic vasoconstriction responsible for erection, which signifies readiness in the male and female genitalia ... (p. 232).

⁴⁴ Nuendörfer and Hilz, “Ludwig Robert Müller,” 4.

... It seems more likely that the contractile movements of the smooth musculature of the inner genitals functions as the triggering moment and cause of orgasm. With the occurrence of orgasm the excitement jumps over to the rest of the vegetative nervous system. This leads to dilatation of the pupils, an accelerated cardiac response, to stronger breathing and sweating ... (p. 673).

... We may suppose that the orgasm of women is due to the contraction of the smooth musculature, namely, the contraction of the uterus. In his studies on sterility, E. Kehret provides the noteworthy observations about the contraction of the uterus, ‘snapping movements of the cervix,’ which can be considered as support of this view. (p. 695).

... We have considered that the cardiac disorders are caused by a spasm of the coronary vessels due to vasoconstriction occurring in anxiety, so it stands to reason that an expansion of the blood vessels of the heart occurs with joyful excitations. Folklore tells us this as well, that the heart convulses with anxiety and is harmed with worry; phrases like, “It is so joyful as to warm your heart” or “out of the abundance of the heart the mouth speaketh,” or “it swells the heart with joy,” clearly indicate that we humans feel a full and warm sensation around the heart when we have pleasant sensations. (p. 818).⁴⁵

Ilse Ollendorff Reich argues that the notes her ex-husband made in the books he read are highly significant in understanding his thought process.⁴⁶ Here, we see underlined: contractile movements of the genital musculature, the idea of the orgasm “jumping” to the nervous system (an electrical concept), and expansion paired with joyful feelings. This follows his idea that there is a particular formula of muscular tension leading to a charging to the musculature, which results in a jump of bioelectrical energy from the musculature (triggered by clonus) that overwhelms the autonomic nervous system, resulting in the physical expansion and a sensation of joy.

⁴⁵ Wilhelm Reich Archives, Orgone Institute Box 1, Folder 8, “Quotations from L.R. Müller ‘Lebensnerven und Lebenstriebe.’” Emphasis original. Translation my own.

⁴⁶ Ilse Ollendorf Reich, *Wilhelm Reich: A Personal Biography* (New York: Avon, 1969), 17.

It is also interesting to note that in a translation of his table found in the archives, Reich ascribes an increase or reduction of libido only to males; the female counterpart is “sexual feeling” (see fig. 3.1).⁴⁷ This was changed in the English translation put out in 1982 by Farrar, Straus and Giroux: libido is replaced by diminished or increased “sexual desire;” the terminology sexual feeling is still employed for women.⁴⁸ This is perhaps a subconscious appropriation of the Freudian emphasis on the masculine nature of libido.

In focusing on the autonomic nervous system, Reich differed from Bernfeld and Feitelberg. Although he too viewed movement within the organism in the context of a spherical, unicellular object with a core and a periphery, Reich did not view the “core” (the system P of Bernfeld’s experiments) as being the central nervous system. For Reich, it would be more accurate to say that the brain was merely a device that registered and responded to impulses from the autonomic nervous system. It did not possess its own uniqueness or an ability to command life. Instead, it was the autonomic nervous system, divided into the parasympathetic and sympathetic divisions, that was the true core or nucleus of human beings.⁴⁹

The mechanics of the autonomic nervous system were thought by Reich to function in a way similar to protoplasm, more specifically, they functioned like an amoeba. In a letter sent later in his life, Reich describes his simplified, dialectical

⁴⁷ Wilhelm Reich Archives, Manuscripts Box 8, Folder 3

⁴⁸ Reich, *Bioelectrical Investigation*, 64.

⁴⁹ Similarly, “Reich radicalized the libido, positioning it as a primary force at the core of emotional functioning.” See C. Richard King, “To Have or Not To Have Sex in Critical Theory: Sexuality in the Early Writings of Wilhelm Reich and Erich Fromm,” *Mid-American Review of Sociology* 16 (1992): 83. For a similar review, see R.B. Neill, “Character, Society, and the Politics of Hope: A Comparative Look at the Theories of Wilhelm Reich, Erich Fromm, and Herbert Marcuse,” *Humboldt Journal of Social Relations* 2 (1975): 36–48. According to Reich’s unique form of logic, which he would eventually term “orgonomic functionalism,” since the autonomic nervous system of the body was analogous to the libido in the psyche, both the autonomic nervous system and the libido functioned according to the same principles.

understanding: “Several years ago, after the discovery of the orgasm reflex and the bio-electrical reactions in pleasure and anxiety, I had to put up the hypothesis that the autonomous nerves system is not, as physiology believes, immobile and only a transmitter of impulses from the brain, but that this system in itself is capable of expansion and contraction like an amoeba.”⁵⁰ Basing his knowledge off of studies of protoplasm and unicellular organisms discussed below, he saw the autonomic nervous system as regulating two basic functions: expansion and contraction. His experiment would attempt to map these basic movements onto the experience of pleasure and anxiety.

Reich was fully aware that he was moving away from the central nervous system, especially the cerebrum, as the center of mental activity. In Reich’s schema, “the cerebrum . . . would be merely a specially designed apparatus for implementing and inhibiting the *general vegetative bodily functions*. . . . *pleasure, anxiety, and rage*—are in no way linked to the existence of the cerebrum.”⁵¹ This is proven, according to Reich, by the fact that the autonomic nervous system evolved before the cerebrum. Reich found vindication for this belief in the work of the neurologist Kurt Goldstein.⁵² As a neurologist, Goldstein was famous for challenging theories of localized function, developing a new approach to thinking about the brain, “characterized by a wide-ranging

⁵⁰ 26 May 26 1941, Letter to Mr. Lewis Goldinger of Brooklyn, NY. Wilhelm Reich Archives, Correspondence Box 11, “General - Sept. 1939–43: A–G.”

⁵¹ Reich, *Bioelectrical Investigation*, 121. Emphasis original.

⁵² Goldstein was not as radical as Reich in seeing the vegetative nervous system as being the primary regulator of all organic functioning, but he did see a diminished place for the cerebellum within the schema of the central nervous system. See, Kurt Goldstein, “The Function of the Cerebellum from a Clinical Standpoint,” *The Journal of Nervous and Mental Diseases* 83.1 (1936): 1-12. Also, Stanley Finger, “Holism and the Critics of Cortical Localization,” in *Origins of Neuroscience* (New York: Oxford University Press, 1994), 57.

interdisciplinarity that amalgamated Gestalt psychology, holist philosophy, and the latest neurophysiological techniques.”⁵³ After escaping Nazi imprisonment, Goldstein composed his opus, *The Organism* (1934), from Amsterdam. He became a sort of hero of holistic biology, transforming it into “an ideology of freedom and the individual, a refusal to look to the cosmos for moral certainties, and an insistence that every person was responsible for confronting the realities of his limits.”⁵⁴

Like Reich, Goldstein was incredibly disappointed in the therapeutic nihilism he saw around him, and his holistic approach was a reaction against this widespread pessimism in the possibility of curing illness.⁵⁵ Also like Reich, he appreciated the work of Friedrich Kraus, and relied on the work of Kraus and his colleague S. G. Zondek for his understanding of how organs respond to peripheral excitation. Alongside Kraus and Zondek, Goldstein sees the transmission of a chemical substance like calcium, or a metabolic product like adrenaline, as being able to induce a response in an organ.⁵⁶ However, according to Goldstein, the effects of calcium or adrenaline can often be reversed in the same organ depending on the circumstances.

A belief in the primary importance of the autonomic nervous system to emotional life seemed confirmed by Goldstein’s work, in which he declared, “recent research has disclosed an extraordinary number of facts which demonstrate a *far-reaching interaction*

⁵³ Stephen Pow and Frank W. Stahnisch, “Pioneers in Neurology: Kurt Goldstein (1878-1965),” *Journal of Neurology* 261.5 (2014): 1049.

⁵⁴ Anne Harrington, “Interwar ‘German’ Psychobiology: Between Nationalism and the Irrational,” *Science in Context* 4.2 (1991): 443-4.

⁵⁵ Anne Harrington, *Reenchanted Science: Holism in German Culture from Wilhelm II to Hitler* (Princeton: Princeton University Press, 1999), 144-45.

⁵⁶ Kurt Goldstein, *The Organism: A Holistic Approach to Biology Derived from Pathological Data in Man* (New York: Zone Books, 1996), 75-76.

between vegetative and mental processes. It must be stressed that such a relationship holds not only for emotional processes, but also for sensory perception.”⁵⁷ Goldstein was not alone in the belief that there existed a relationship between the psychic and vegetative mechanisms. Walter Rudolf Hess and Egon Küppers were conducting research of this type. Like Reich, Küppers looked to the cell for an explanation of psychic phenomenon. He envisioned an antithesis between the nucleus and protoplasm of the cell, locating within the nucleus the “cell-soul” (*Zellseele*).⁵⁸ Hess continued with Bichat’s system, dividing all an organismic behavior into animal and vegetative physiology. The animal nervous system is responsible for regulating individual behavior with respect to the environment while the vegetative system maintains the functional milieu of the cells.⁵⁹ Reich does not cite Hess in his publications, but he did possess a copy of Hess’s *Über die Wechselbeziehungen zwischen psychischen und vegetativen Funktionen* (1925) in his personal library, so it is fair to say the he was familiar with his work.⁶⁰

Goldstein also pointed out the importance of recent research on the regulation of waking and sleeping by the autonomic nervous system. Sleep research in the late nineteenth and early twentieth century was highly reductionist and relied on specific measurements like temperature or electrical conductance measured by galvanometer.⁶¹

⁵⁷ Goldstein, *The Organism*, 78. Emphasis original.

⁵⁸ E. Küppers, “Weiteres zur Lokalisation des Psychischen (Versuch einer Analyse der Vorderhirnfunktionen),” *Zeitschrift für die gesamte Neurologie und Psychiatrie* 83.1 (1923): 248.

⁵⁹ Walter Rudolf Hess, “The Reciprocal Relations Between Psychic and Vegetative Functions,” in *Biological Order and Brain Organization: Selected Works of W.R. Hess* (New York: Springer-Verlag, 1981), 72.

⁶⁰ *Personal Library of Wilhelm Reich* (Rangeley, ME: Wilhelm Reich Infant Trust, 2012), 40.

⁶¹ P.L. Parmeggiani, “Interaction Between Theory and Experiment in the Study of Sleep Physiology: A Historical Survey of Early Sleep Research,” *Revue Neurologique* 164 (2008): 629-633.

Reich pursued these leads, especially the work of Philipp Keller and Curt Richter.⁶²

Keller conducted experiments on the electrophysiology of healthy and diseased skin at the University of Freiburg's dermatology clinic. He found the vegetative state of the skin, and especially sweat, to be responsible for changes in electrical potential exhibited when using potassium chloride solutions.⁶³

Curt P. Richter was a professor of psychobiology at Johns Hopkins, most famous for the concept of the "biological clock."⁶⁴ He was known for his synthesis of psychology, physiology, and neurology in explaining the relationship between biochemicals and behavior.⁶⁵ Strongly influenced by Claude Bernard and Walter Cannon, Richter focused specifically on behavioral regulation of the internal milieu. He believed instincts provided a way for animals to maintain homeostasis through behavioral choices.⁶⁶ Richter was another organismic thinker, and he did not compartmentalize behavior into mental and physical divisions. In a manner consistent with Freud's observations in "Beyond the Pleasure Principle," he defines drives as "efforts made by the total organism to maintain a constant internal environment."⁶⁷

⁶² Goldstein cites the work of W.R. Hess, but it is not obvious that Reich familiarized himself with this material.

⁶³ Philipp Keller, "Elektrophysiologische Untersuchungen an der Gesunden und Erkrankten Haut: Die Bedeutung des Konzentrationseffektes," *Klinische Wochenschrift* 8.23 (1929): 1081-82.

⁶⁴ Curt Paul Richter, *Biological Clocks in Medicine and Psychiatry* (Springfield, Ill.: C.C. Thomas, 1965). For a recent biography, see: Jay Schulkin, *Curt Richter: A Life in the Laboratory* (Baltimore: Johns Hopkins University Press, 2005).

⁶⁵ William K. Stevens. "Curt Richter, Credited with Idea of Biological Clock, is Dead at 94," *New York Times* 22 December 1988: D23.

⁶⁶ Jay Schulkin, "Curt Richter: Psychobiology and the Concept of Instinct," *History of Psychology* 10.4 (2007): 329.

⁶⁷ Curt P. Richter, "Biology of Drives," *Journal of Comparative and Physiological Psychology* 40.3 (1947): 129.

In his studies on sleep, Richter observed a marked increase in the electrical resistance of the skin to galvanic current, from 30,000 to 500,000 ohms difference during sleep.⁶⁸ Richter used solid zinc electrodes saturated with a solution of zinc sulphate, and attached to a string galvanometer. He observed marked increased in resistance when measured at the palms, and he correlated this increase to an improvement in the depth of sleep. However, individual variations proved too great to formulate any standard curve for the intensity of sleep. Very different information was gained from measuring the porous skin on the back of the hand. Richter discovered that, “in early schizophrenics and normals who are usually obviously tense and strained, the back-back resistance is low, while in cases of stupor and normal who are obviously free from tenseness, the resistance is high.”⁶⁹ It was concluded that resistance of the palm is associated with nervous stimulation, while resistance of the back of the hand correlated to muscular activity. More will be said about the electrical activity of the skin in the final section of this chapter.

Dialectical Materialism in Reich’s Thought

Reich’s ideas about how the organism worked, specifically about how the nervous system operated, reflect his dialectical materialist perspective. Specifically, Reich made conclusions about the functional identity of the protoplasm, the cell, and the autonomic nervous system based on his belief that they all shared the same dialectical properties of expansion and contraction. The trademarks of dialectical materialism, which are not

⁶⁸ Curt P. Richter, “The Significance of Changes in the Electrical Resistance of the Body During Sleep,” *Proceedings of the National Academy of Sciences of the United States of America* 12 (1926): 215.

⁶⁹ Richter, “Changes in the Electrical Resistance of the Body During Sleep,” 220.

inherently different from those of holistic materialism,⁷⁰ include the “three laws” of dialectical materialism: the law of the unity and conflict of opposites, the law of the change of quantitative into qualitative, and the law of the negation of the negation.⁷¹ Additionally, Garland Allen includes holism and emergent properties as key characteristics.⁷² Dialectical materialism also recognizes the importance of history in behavior. An organ will react differently to the same stimulus depending on its historical circumstances. This means that material reality can never be known to a final degree, and knowledge itself becomes a process of continual discovery.

It should be noted that it was primarily Engels who developed a dialectical materialist approach to science, believing, according to Joost Kircz, that “some profound dialectics must reside in a lower, more elementary level of nature . . . [and] have to be in concert with non-living nature.”⁷³ Its practice was debated with some even considering it to be an improper or undue extension of Marx’s original ideas.⁷⁴ Therefore, it is not surprising that the ways in which dialectical materialism played out in Reich’s theory of

⁷⁰ Garland Allen uses holistic materialism and dialectical materialism interchangeably. On the former, he notes, “holistic materialism sees change as something more than merely the response of a system to its external environment, recognizing that the system contributes something itself to its own developing and changing state.” See Garland E. Allen, “T.H. Morgan, Mechanistic Materialism, and the Gene Concept, 1910–1940,” *American Zoologist* 23 (1983): 833.

⁷¹ Afansayev, V.G. *Dialectical Materialism* (New York: International Publishers, 1987), 87.

⁷² G.E. Allen, “Dialectical Materialism in Modern Biology,” *Science and Nature* 3 (1980):45 has a nice figure that compares and contrasts mechanistic materialism and dialectical materialism.

⁷³ Joost Kircz, “Engels and Natural Science: A Starting Point,” *Science and Society* 62 (1998): 62–63. This was a decidedly holistic viewpoint. Although objects could (and must) be studied in isolation, it is only through the mutual interaction of objects that reality is comprised.

⁷⁴ Friedrich Engels, *Dialectics of Nature* (New York: International Publishers, 1940). It should be noted that Engels’ work on materialist dialectics continues to be a major area of study for Chinese scholars. In English, see: Frederick Gregory, “Scientific versus Dialectical Materialism: A Clash of Ideologies in Nineteenth-century German Radicalism,” *Isis* 68 (1977): 206–233; Stany Mazurkiewicz, “Which Materialism? Against Which Idealism? Dialectical Thinking of Nature According to Hegel, Engels, and Schelling,” *Almagest* 5 (2014): 14–21.

orgasm are implicit and at times unclear. Strick argues that Reich largely ignored the third law of dialectical materialism, or if he did pay attention to it he interpreted it in ways radically different ways than Marxist scientists like Bernal, Haldane, and Oparin.⁷⁵ Perhaps there is simply not enough English language studies of dialectical materialist science at this time to allow us to properly access and interpret the meaning of the third law in early twentieth-century practice.

Focusing then on the first two laws, we can easily see how these play out in Reich's understanding of the organism. Reich approached the autonomic nervous system as a perfect object of dialectical inquiry as it is composed of sympathetic and parasympathetic branches that are considered to have opposite actions in response to a stimulus. At the time Reich was working, these actions were conceptualized as being either excitory or inhibitory. In other words, the unified autonomic nervous system responds to a single stimulus with opposite responses. It unifies the opposites. This occurs on a chemical level, as proven by the study of potassium and calcium (the K-Ca theory), and Reich hypothesized that it also occurred on the physical level, with expansion representing an excitory influence, and contraction representing inhibition.⁷⁶ It is important to note here that Reich was speaking of the entire autonomic nervous system as a whole. He envisioned the autonomic nervous system as the "worm in man"⁷⁷ and

⁷⁵ Strick, *Wilhelm Reich: Biologist*, 48.

⁷⁶ Analogous to Reich's expansion and contraction, Engels "considered the dialectics of attraction and repulsion to lie at the root of all physical processes," even in thermodynamics. Erwin Marquit, "Engels on Motion: A Comment." *Nature, Society, and Thought* 16 (2003): 315.

⁷⁷ See Wilhelm Reich, *Selected Writings: An Introduction to Orgonomy* (New York: Farrar, Straus and Cudahy, 1960), 161. Here Reich speaks of how armoring blocks the vegetative streaming of the body. At this point it was the biological energy itself, and not simply the autonomic nervous system, that moved according to the principles of expansion and contraction. However, in Reich's notes for the bioelectrical

unlike Freud, who hypothesized that the space between neurons was filled with undifferentiated protoplasm that formed contact-barriers that could be permanently changed by the passage of a stimulus,⁷⁸ Reich rarely spoke of neurons or even of specific nerves at all. It is the sympathetic branch that inhibits and contracts and the parasympathetic that expands.

Reich also largely ignored the central nervous system, believing it to be little more than a device registering the primal movements of the vegetative nerves and translating these into sensation. Here enters the transformation of quantity into quality, when the autonomic nervous system experiences tension (inhibition, contraction) or relaxation (excitation, expansion) it is felt emotionally as anxiety or pleasure, respectively. This is because, returning to the first law, there is a unified energy that manifests in both the soma and the psyche. These two seemingly opposite systems are actually unified by the bioelectrical energy that runs through them, producing quantitative values in the body and qualitative values in the psyche. Thus, the amount of energy present in the nervous system determines the amount of affect produced.

The connections between Reich's ideas and dialectical materialism are present mostly as resonances in the bioelectrical experiments. Although the work is certainly meant to be a contribution to a Marxist science, Reich never explicitly lays out his

experiments we see diagrams that appear remarkably similar to the ones published here, in which an undulating, worm-like shape is restricted in its motility at specific points.

⁷⁸ See Paul Schimmel, *Sigmund Freud's Discovery of Psychoanalysis: Conquistador and Thinker* (Hove: Routledge, 2014). It should be noted that Freud spent a short portion of his early career working as a neurohistologist. Although this aspect of his career is not well-known, he made significant contributions to our understanding of the neuronal cytoskeleton. See Eugenio Frixione, "Sigmund Freud's Contribution to the History of the Neuronal Cytoskeleton," *Journal of the History of the Neurosciences* 12 (2003): 12–24; and Lazaros C. Triarhou and Manuel Del Cerro, "The Histologist Sigmund Freud and the Biology of Intracellular Motility," *Biology of the Cell* 61 (1987): 111–14. For an excellent overview on the overlap between neuroanatomy, philosophy, and psychology from 1880–1900, see Simo Koppe, "The Psychology of the Neuron: Freud, Cajal and Golgi," *Scandinavian Journal of Psychology* 24 (1983): 1–12.

dialectical materialist vision. We see it evidenced implicitly in the dialectical relationship between the two branches of the autonomic nervous system, in the transformation of libido into a quantifiable form, and in a rejection of individual determinism and Cartesian dualism that plays out in Reich's writing.⁷⁹ We can also see it in Reich's rejection of what he deems teleological thinking: the belief "that the external world sets certain 'problems' for organisms and that evolution consists in 'solving' these problems, just as an engineer designs a machine."⁸⁰ His dislike of these concepts led him away from mechanistic materialism, which he admits played a huge role in his medical work and towards the holism offered by a dialectical materialist approach to the organism.⁸¹ The notes in Reich's lab notebooks reflect a form of thinking in which the relationships between opposites are of primary importance. Reich was constantly delineating and affirming these relationships during his time in Oslo.

Bringing things Together: Cell Theory

Reich's thinking clearly displays the untidiness of biological thinking in the early twentieth century. There is a wide range of ideas, some that historians would consider "passé" or outdated for their time, others that are right on target. The divisions that are drawn between different time periods in intellectual history are arbitrary and do not reflect reality. For Reich, there was a multiplicity of ideas about "what is life" for him to draw on, and he combined many diverse strands of thought into his own interpretation of

⁷⁹ See Richard Levins and Richard Lewontin, *The Dialectical Biologist* (Cambridge, MA: Harvard University Press, 1985), 3.

⁸⁰ Levins and Lewontin, *The Dialectical Biologist*, 25. Reich, *The Function of the Orgasm*, 25.

⁸¹ Reich, *The Function of the Orgasm*, 24.

the organism. The unifying aspect is a physico-chemical materialist approach based in cell theory.⁸² It is cell theory which binds the many disparate elements of Reich's thought into a unified whole, but it was a cell theory of his own devising that drew only partially on what we now consider to be its key characteristics.

In early twentieth-century German biology, it was quite possible to view the cell, with its membrane, nucleus and protoplasm, as physiologically equivalent to any organism in general. Cell theory bridged the gap between reductionist and holistic biology in this way.⁸³ Dröscher notes that its "consequences for biological research were twofold: First, cells were treated as if they were small but autonomous 'microscosms' equipped with the whole range of vital expressions, and second, all vital phenomena of multicellular organisms were explained in terms of cellular mechanisms and properties."⁸⁴ Reich supposes that human beings are reducible to cells, and two bodies in orgasm are "nothing more than a quivering mass of plasm" that have established a complete electrolytic system.⁸⁵ Reich would develop a schema in which the functioning of the body of an organism acted in the same way as a single cell. What is so fascinating in Reich's work is that he does not describe the organism in terms of an aggregate of cells with specific divisions of labor that work together, but rather reduces the entire human

⁸² Reich aligned himself with the "Berlin School of 1841" and with Bernard. As Mendelsohn reminds us, "the historian, assuming that this approach was to be found primarily among those engaged in research on nerve, muscle, and metabolic phenomena, overlooked . . . the study of cells." Everett Mendelsohn, "Cell Theory and the Development of General Physiology," *Archives Internationales d'Histoire des Sciences* 16 (1963): 420.

⁸³ Natasha X. Jacobs, "From Unit to Unity: Protozoology, Cell Theory, and the New Concept of Life," *Journal of the History of Biology* 22.2 (1989): 236-7.

⁸⁴ Ariane Dröscher, "Edmund B. Wilson's 'The Cell' and Cell Theory between 1896 and 1925," *History and Philosophy of the Life Sciences* 24.3/4 (2002): 360.

⁸⁵ Reich, *Bioelectrical Investigation*, 13.

being to a mass of quivering plasma with a vegetative center with movement regulated by alternating motions of parasympathetic expansion and sympathetic contraction.⁸⁶

Reich imagines that the body can be broken up into different divisions, and each division behaves according to the properties of a single cell. All of these divisions react to each other, so there is something resembling emergent properties, but these properties do not differ from each other. All units of the body behave according to the same dialectical principles and physical laws, but they interact according to an increasingly complex division of the body, breaking each unit of space down block by block into discrete units that when examined individually function just as a cell would.⁸⁷ Reich never describes his view in such words, and indeed it is very difficult to describe, but when reading Reich's work this view becomes clear. In spite of his antipathy for reductionism, it seems very present here. Reich was, after all, a product of his times, and reducing something as

⁸⁶ Of course, Reich was a trained physician and was well-aware that the human body was much more than a quivering mass of jelly. The extent to which this statement should be understood as a metaphor is thus a crucial question. I would argue that part of the difficulty Reich had, both in conveying his ideas to a general audience and in convincing trained scientists of his theories, lay in the fact that his theories simply could not bridge the complexities of reality. It would be incorrect to say that Reich considered this to be a simple metaphor, he truly believed that humans were at their very core not skin and bones but plasmatic creatures. Nowhere was this more evident for him than in the sexual embrace. Nevertheless, there is clearly a great difficulty in making logical sense of this statement. For Reich, all the other substances of the body were tangential to the importance of the protoplasmic core.

⁸⁷ We should note how different this view is from other popular imaginings of the body and its cells common at this time. For more on common approaches to the cell in biology and physiology, see: Andrew Reynolds, "The Theory of the Cell State and the Question of Cell Autonomy in Nineteenth and Early Twentieth-Century Biology," *Science in Context* 20.1 (2007): 71-95. Also Laura Otis, *Membranes: Metaphors of Invasion in Nineteenth-century Literature, Science, and Politics* (Baltimore: Johns Hopkins University Press, 1999). There is also something of a mismatch here between Reich's reductionism and the concept of emergent properties, fundamental to holistic materialism: "Engels in particular conceives of reality as hierarchically divided into different levels, each with its own specific laws. The laws of a higher level cannot be explained by, or reduced to, the laws of a lower level since the transition from one level to another is achieved through a dialectical 'leap.'" T.R. Payne, "On the Theoretical Foundations of Soviet Psychology," *Studies in Soviet Thought* 6 (1966): 126.

complex as neuro-anatomy down to a simple physiology of protoplasmic processes, for example, was quite common in early twentieth century German science.⁸⁸

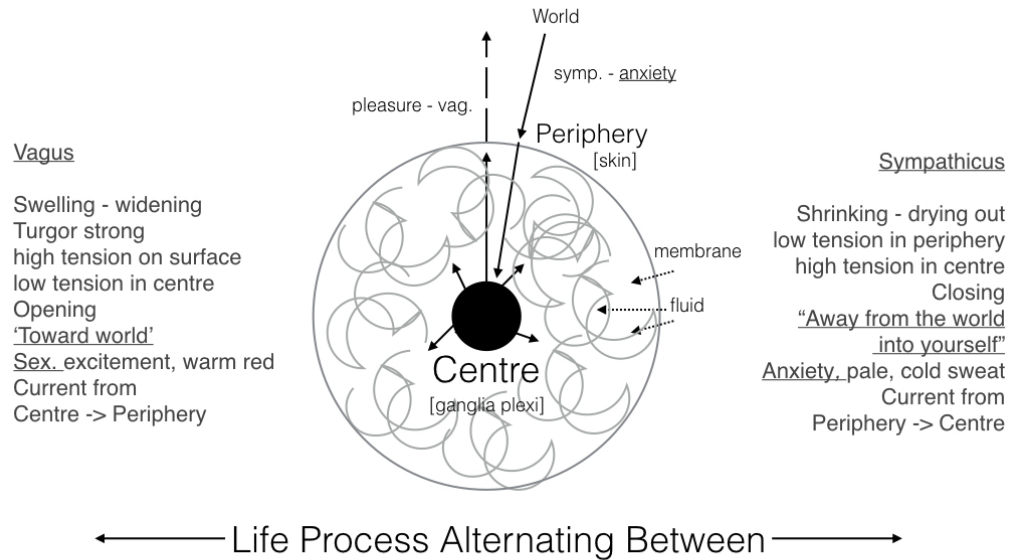


Figure 3.2: Reich's schema of the vegetative nervous system. Reproduced from Wilhelm Reich Archives, Manuscript Box 8, Folder 2. A modified version of this figure is included in *The Function of the Orgasm*.

Reich connected research on the mechanics of amoeba and other unicellular organisms with colloid chemistry to develop a model of cellular function that characterized all organic life. Figure 3.2 illustrates Reich's concept of the organism as a cell and the opposition between the vagus and sympathetic nerves. Protoplasm was particularly fascinating to Reich, and he considered its movements as characteristic of all life. The importance of protoplasm to scientific research in the early twentieth century is

⁸⁸ It should be noted that as late as the 1890s, "the nerve junction was still understood through the amoeboid theory of neuronal mobility, which held that neurons made functional contacts through pseudopodial movements of the protoplasm of nerve cells." See Brain, "Materializing the Medium," 126. Harrington, *Reenchanted Science*, 88. Harrington discusses the work of Constantin von Monakow, whose intellectual trajectory is in some ways quite similar to Reich's.

manifold. It was the anatomist Max Schultze who developed the idea from 1858–61 that it was the protoplasm and not the cell that held the secret of life.⁸⁹ In 1920, zoologist Asa Schaeffer noted: “the phenomenon of amoeboid movement born in nakedness and utter isolation, has become attired, in a brief space, with the Victorian garb of a Fundamental.”⁹⁰ In experimental physiology, the movement of amoeba, often referred to as a “protoplasmic streaming,” stood in for the simplest phase of muscular contraction in vertebrates.⁹¹

Like cells, protoplasm was at one point considered to be the unifying link between plants and animals. Protoplasm was long considered to be a substance evidencing a basic similarity between all plant and animal life, but it was Thomas Henry Huxley’s 1868 lecture that cemented the idea that protoplasm represented the basic unity of all living forms.⁹² According to Riskin, when introduced as “the physical basis of life” by Huxley in 1868, it was proposed that we ought “to be able to understand the properties of protoplasm, including its quite extraordinary property of being alive, simply in terms of its component parts.”⁹³ Huxley believed that there was a physical force that acted *through*

⁸⁹ G. Rickey Welche and James S. Clegg, “From Protoplasm Theory to Cellular Systems Biology: A 150-year Reflection,” *American Journal of Physiology* 298 (2010): C1280–C1290. Interest in the protoplasm began formally when Dujardin observed the substance oozing from a broken cell membrane in 1935, however the idea of protoplasm as the fundamental stuff of life can be traced back to the ancient Greeks. See Thomas S. Hall, “The Scientific Origins of the Protoplasm Problem,” *Journal of the History of Ideas* 11 (1950): 339–356.

⁹⁰ Asa A. Schaeffer, *Ameboid Movement* (Princeton: Princeton University Press, 1920), 2.

⁹¹ Schaeffer, *Ameboid Movement*.

⁹² Gerald L. Geison, “The Protoplasmic Theory of Life and the Vitalist-Mechanist Debate,” *Isis* 60.3 (1969): 272.

⁹³ Jessica Riskin, *The Restless Clock: A History of the Centuries-long Argument Over What Makes Living Things Tick* (Chicago: University of Chicago Press, 2016), 1.

the protoplasm, and this force was “life.”⁹⁴ Of course, by the 1930s, protoplasm was coming to have different connotations in some circles, but for Reich it was still the unifying substance that connected unicellular organisms to humans. This may have been, in part, a reaction to the rediscovery of Mendel’s work in the early twentieth century and the focus on genetics. As gene theory, and the eugenics that accompanied it, gained prominence “the panoply of ‘protoplasmic particles’ was swept away”; for Reich, a focus on the protoplasm may have represented an overt rejection of what he considered to be both a racist and mechanistic science of genetics.⁹⁵

Although research on protoplasm was initially presented as an alternative to cell theory, it eventually became integrated within it.⁹⁶ It appears that for biological “outsiders,” the distinction between cell theory and protoplasm was not as pronounced as it was among biologists proper.⁹⁷ This is especially true for psychologists working in biology—they privileged the protoplasm as a fundamental unit of life, but understood protoplasm as functioning within cell theory. As other scholars have pointed out, for a brief period of time there was significant interest among psychologists in conducting

⁹⁴ J.R. Baker, “The Cell-theory: A Restatement, History, and Critique, Part II,” *The Quarterly Journal of Microscopical Science* 90 (1949), 87–108.

⁹⁵ Welche and Clegg, “From Protoplasm Theory to Cellular Systems Biology.”

⁹⁶ Once it was confirmed that animal cells do, in fact, have membranes, there was a move from speaking of plant cells and animal “globules” to a unified cell as the basic building block of life. However, the focus on cellular division, Virchow’s proposal that cells can only arise from other cells, reoriented the focus back on protoplasm as the fundamental unit, with some denying the necessity of cell walls to animal life. “To many historians, the theories of protoplasm that were proposed in the late part of the 19th century represent rampant speculation without concrete foundations. The period has been given a particularly dark image because the theories developed were totally replaced by the modern science of biochemistry.” See William Bechtel, “The Evolution of Our Understanding of the Cell: A Study in the Dynamics of Scientific Progress,” *Studies in the History and Philosophy of Science* 15 (1984): 320, 337, quotation from 338.

⁹⁷ For more on outsiders in biology see Oren Harman and Michael R. Dietrich, *Outsider Scientists: Routes to Innovation in Biology* (Chicago: University of Chicago Press, 2013).

psycho-physiological research using “the cell or ‘elementary organism[s],’ as their primary object of study, since it was deemed to be both the only functional organic entity common to both plants and animals and the natural starting point of physiological as well as psychological life.”⁹⁸ The first study of this kind is believed to be Binet’s 1887 work on *The Psychic Life of Microorganisms* (1889). Henri Bergson, a philosopher whose work influenced Reich, was also interested in what unicellular organisms or protists could say about “the relationship between organic and psychological individuality.”⁹⁹

Reich began thinking about sexuality in terms of protoplasm while he was still in medical school, idealizing sexual union as a coming together of “male and female protoplasm.”¹⁰⁰ Amoebae were a preferred organism for thinking about how protoplasm functioned.¹⁰¹ Later, Reich would note: “The equating of the erection with the protrusion of pseudopodia and of the shrinking of the penis with their withdrawal caused me to

⁹⁸ Judy Johns Schloegel and Hening Schmidgen, “General Physiology, Experimental Psychology, and Evolutionism: Unicellular Organisms as Objects of Psychophysiological Research, 1877-1918,” *Isis* 93.4 (2002): 616. The authors make a distinction between biophysics, or what they term “organic physics,” and research on unicellular organisms. As will be discussed in the section on colloid chemistry, this distinction is not necessarily valid, as Wilhelm Reich, at least, very consciously saw himself as continuing the biophysical legacy, specifically of Emil du-Bois Reymond. For him, unicellular research and biophysics or “organic physics” were intimately linked as a single discipline through the use of colloid chemistry.

⁹⁹ Schloegel and Schmidgen, “Unicellular Organisms,” 617. They provide no reference for their assertion that “...around 1915, Sigmund Freud... adopted protozoa as general models for the “psychological apparatus” and particularly of its “ego” functions in psychoanalysis,” 617. It is assumed they are referring to the quotation, “Thus we form the idea of there being an original libidinal cathexis of the ego, from which some is later given off to objects, but which fundamentally persists and is related to the object-cathexes much as the body of an amoeba is related to the pseudopodia which it puts out.” See, “On Narcissism: An Introduction,” *Standard Edition of the Complete Psychological Works of Sigmund Freud*, volume 14, 75. However, Freud never ran with this analogy, but employed it sporadically to illustrate certain ideas. See, “A Difficulty in the Path of Psycho-analysis,” 139; “Introductory Lectures on Psycho-analysis: Part III General Theory of the Neuroses,” 416; and “The Ego and the Id,” 63-65; all in the *Standard Edition*.

¹⁰⁰ Wilhelm Reich, *Passion of Youth: An Autobiography, 1897-1922* (New York: Farrar, Straus, and Giroux, 1988). 169.

¹⁰¹ Andrew Reynolds, “Amoebae as Exemplary Cells: The Protean Nature of an Elementary Organism,” *Journal of the History of Biology* 2008 (41): 307–337.

assume *a functional antithesis between sexuality and anxiety*. The antithesis is expressed in the direction of biological activity. I could no longer free myself from this idea.”¹⁰² Reich himself was not much involved in the debates about whether or not unicellular organisms possessed a psychic life; indeed, this question is taken for granted. He was concerned, more simply, with elementary reactions to external stimuli, assuming that these reactions must represent some form of psychological activity:

In the biological world, we generally find two opposite directions or functions resulting either in the spherical form or its opposite; namely extension and expansion. We notice that in every case the direction of flow of the fluids is the same as that of the psychic or, rather, biological direction of function. Tendencies toward the world—expansion, dissipation of anxiety, etc.—go together with *centrifugal* flow. Tendencies away from the world—adoption of a spherical form, generation of anxiety, etc.—go together with *centripetal* flow. What we now have to find out is whether this is a coincidental occurrence or a previously overlooked *fundamental* law of life.¹⁰³

This was observed very easily in amoeba: “If an amoeba wants to go out toward something, it stretches out. Right? If it is afraid, what does it do? It withdraws. It goes into itself. Right? Now, that was the libido theory as I developed it as a real, physiological function.”¹⁰⁴

From Max Hartmann, Reich developed the belief that, “the movement of amoeba depends directly on plasma flow.”¹⁰⁵ Indeed, protoplasmic streaming, a phenomenon of lifelong interest to Reich, had been observed as early as 1774.¹⁰⁶ Hartmann was a famous

¹⁰² Reich, *The Function of the Orgasm*, 263. Emphasis original.

¹⁰³ Reich, *Bioelectrical Investigation*, 42. Emphasis original.

¹⁰⁴ Reich, *Reich Speaks of Freud*, 121.

¹⁰⁵ Reich, *Bioelectrical Investigation*, 43.

¹⁰⁶ Geison, “The Protoplasmic Theory of Life,” 272.

biologist who was appointed head of the protistology department at the Kaiser-Wilhelm Institute for Biology in 1914.¹⁰⁷ Although Hartmann worked to develop modernized taxonomy of protists, as well as investigating pathological protists at the Robert Koch Institute in Berlin, his primary interest lay in more general biological problems, especially the issue of sexuality.¹⁰⁸ Several explanations of sexuality existed, including the rejuvenation theory, re-popularized and later retracted by Otto Bütschli in 1882, Weismann's "amphimixis," and the "general theory of sexuality" put forward by Fritz Schaudinn in 1905, which argued that there is a bisexual potential in all eukaryotic organisms.¹⁰⁹ Hartmann agreed with this latter concept and developed a theory of "relative sexuality."

Hartmann's argued that sexual union required sexual differentiation, and two identical gametes could not copulate. According to Sapp: "From this premise, Hartmann constructed his famous theory of 'relative sexuality': that any two gametes can copulate only if they differ sufficiently in strength of their sex tendency."¹¹⁰ Relative sexuality was Hartmann's "thesis of a general bisexuality and a bisexual potency."¹¹¹ His findings were based on work with unicellular and multicellular algae, especially *Ectocarpus siliculosus*,

¹⁰⁷ Dieter Mollenhauer, "Max Hartmann's Green Protists," *Protist* 149 (1998): 186. For more on Max Hartmann, see Hans-Jörg Rheinberger, "Eudorina, Max Hartmann's Experiments on Biological Regulation in Protozoa, 1914–21," in *An Epistemology of the Concrete: Twentieth-century Histories of Life* (Durham, NC: Duke University Press, 2010), 82–93.

¹⁰⁸ Jan Sapp, "Sex and the Simple Organism," in *Where the Truth Lies: Franz Moewus and the Origins of Molecular Biology* (New York: Cambridge University Press, 1990), 67. It is also worth mentioning that Hartmann was an outspoken critic of Nazism. "Max Hartmann," *Nature* 4008 (1946): 265.

¹⁰⁹ Mollenhauer, "Max Hartmann's Green Protists," 188. For more, see H. Bernstein, F. A. Hopf, and R.E. Michod, "The Molecular Basis of the Evolution of Sex," *Advances in Genetics* 24 (1987): 323.

¹¹⁰ Sapp, "Sex and the Simple Organism," 71.

¹¹¹ Max Hartmann, "Sex Problems in Algae, Fungi and Protozoa: A Critical Account Following the Review of R.A. Lewin," *American Naturalist* 139.849 (1955): 321.

fungi, and protozoa: “In 1909, following a review of all available accounts of automictic fertilization in protists and thallophytes, I advanced the thesis that, because of certain findings, a general theory of sexuality and fertilization can prove correct only if the assumed bisexuality could be confirmed as relative, not as absolute. From this hypothesis, strictly logical deduction led to the conclusion that it should be possible experimentally to demonstrate cases in which gametes A act as males in relation to gametes B, while they act as females in relation to gametes C.”¹¹² This theory was confirmed, in Hartmann’s mind, through his experiments with *Ectocarpus*.

Hartmann’s general theory of sexuality, as it was elaborated in 1929, is summarized as follows:

1. Sex is a universal phenomenon
2. There are always two and only two sexes.
3. These two sexes are always male and female.
4. Male and female are qualitatively diverse.
5. Every cell has the full potential of both male and female.
6. These potencies are not localized in any one cell component, but are general properties of the living material.
7. The sex manifestation by a cell is the result of a weakening or strengthening of the expression of either the male or the female potency.
8. This weakness or strengthening is determined by external conditions, by developmental conditions, or by genetic factors.
9. The degree of weakening or strengthening depends on the effectiveness of the determinants listed in proposition 8.
10. This quantitative variation results in the appearance of each sex in a series of strengths called “valences.”
11. Sexual union takes place only under one of two conditions: (a) when gametes differ in sex; that is, when one manifests a stronger male than female potency, the other a stronger female than male potency; (b) when the gametes are all alike in sex, but very different in sex valence; that is when one is a strong female, the other a weak female; or when one is a strong male, the other a weak male.

¹¹² Hartmann, “Sex Problems,” 329.

12. Sexual union equalizes or reduces the tension resulting from a difference in sex or sex valence.¹¹³

The concept of relative sexuality was re-evaluated in the 1950s and '60s, and many of the major works proving the existence of such phenomenon were added “to the other great fakes in science history.”¹¹⁴ Hartmann’s experiments with *Ectocarpus siliculosus*, a brown algae that grows up to two feet long, were the longest standing data set in support of relative sexuality. Working in Naples from 1925 to 1936, Hartmann observed the existence of “weak males” and “weak females” whose sexuality was activated only with “strong” partners of the opposite sex. He thereby concluded that sex is determined by external factors. When the experiments were replicated in the 1970s, however, no indication of relative sexuality was found. Hartmann’s use of low magnification levels, a crude form of observation, is seen as a major reason for his inaccurate findings.¹¹⁵

Questions of accuracy aside, the theory of relative sexuality had adherents during the 1920s and '30s. In a more general sense, followers of relative sexuality believed in a basic distinction between germ cells and body (somatic) cells, believing the latter to be nothing but offshoots of the germ cell. In other words, the body, and physical differences between the sexes, only existed to serve the needs of the sperm and the ovum. Sapp notes: “Sex was reduced to the morphology, behavior, and physiology of cells. The

¹¹³ Reprinted in Sapp, “Sex and the Simple Organism,” 72. From, T.M. Sonneborn, “Sexuality in Unicellular Organisms,” in *Protozoa in Biological Research*, ed. G.N. Calkins and F.M. Summers (New York: Macmillan, 1941): 678-679.

¹¹⁴ Dieter G. Müller, “Relative Sexuality in *Ectocarpus siliculosus*: A Scientific Error,” *Archives of Microbiology* 109 (1976): 89.

¹¹⁵ Müller, “Relative Sexuality,” 89-94. This is in some ways remarkably similar to how Reich was accused of inaccurate findings in his bion experiments because of too high magnification.

sexual cycle of unicellular organisms was [considered] in some ways functionally analogous to that of higher organisms.”¹¹⁶ With there being little to differentiate male and female unicellular organisms, plus (+) and minus (-) symbols were often used to denote sex, with the result that sexual attraction resembled the same sort of attraction that might be exhibited by magnets or ions. This may have been especially appealing to Reich, who took sexual metaphors very seriously, and was interested in what he referred to as the “genital magnet effect,” when “a difficult-to-control urge arises to make complete contact between the penis and the surface of the vagina.”¹¹⁷ Such an effect was not observed between impotent men and frigid women, presumably because they were both weakly sexual.

Strick notes that it was, in fact, Hartmann’s work on relative sexuality that “led Reich to keep open the possibility that libido was a phenomenon of bio-electrical charge.”¹¹⁸ Reich mentions Hartmann’s in *The Function of the Orgasm*, discussing their importance for his work on bions:

In 1933, I came upon an experimental work by the Berlin biologist Hartmann. In special experiments dealing with the sexuality of gametes, he demonstrated that the male and female functions in copulation are not fixed. A weak male gamete can behave in a feminine way toward a stronger male gamete. . . . He assumed the existence of ‘certain’ still uninvestigated ‘substances.’ I understood that the groupings were determined by electrical processes. A few years later I was able to confirm this by means of an electrical experiment on bions.¹¹⁹

¹¹⁶ Sapp, “Sex and the Simple Organism,” 69.

¹¹⁷ Reich, *Bioelectrical Investigation*, 7.

¹¹⁸ Strick, *Wilhelm Reich: Biologist*, 14.

¹¹⁹ Reich, *Function of the Orgasm*, 282–3.

In his published accounts of the bioelectrical experiments, however, Hartmann is simply mentioned in addition to the handful of other scientists who were much more focused on the issue of protoplasmic movement.¹²⁰ He attributes to Hartmann rather simple observations about the importance of plasma flow and the role of “surface energy” in the creation of pseudopodia.¹²¹ In fact, Reich cites a handful of prominent scientists working both with living organisms like amoeba as well as with inorganic colloid suspensions that acted in ways similar to amoeba, including Ludwig Rhumbler, Theodor Wilhelm Engelmann, Nathaniel Russell Harrington, and Charles Benedict Davenport, in order to support the assumption, accepted as early as the late nineteenth century and described in detail by Michael Brain, that protoplasm is “sensitive to external forces such as heat, light, and pressure, the material structure of the protoplasm appeared uniquely suited to carry the imprint of recurring actions.”¹²²

Interestingly enough, early theories of protoplasmic movement identified contractility, not expansion, as the basic property that allowed for organic movement; August Gruber, whom Reich cites but in a different context, was of this opinion. According to de Bryun, he believed that “the contraction [caused by dehydration] of the cortical layer at the posterior end [of the amoeba] is the actual locomotor force.”¹²³ The meaning of the term “contraction” was very vague, and had little to no relation to any

¹²⁰ Hartmann was the author of the popular *Allgemeine Biologie* (1931–32), in which he proposes three basic biological processes: dynamic equilibria, irreversible changes, and physiological oscillations. See Rheinberger, “Eudorina,” 91.

¹²¹ Reich *Bioelectrical Investigation*, 46.

¹²² Michael Brain, “How Edvard Munch and August Strindberg Contracted Protoplasmania: Memory, Synthesis and the Vibratory Organism in Fin-de-Siècle Europe,” *Interdisciplinary Science Reviews* 35.1 (2010): 9.

¹²³ P.P.H. de Bruyn. “Theories of Amoeboid Movement,” *Quarterly Review of Biology* 22.1 (1947): 2, 4.

concept of muscle force. Engelmann furthered this contractile theory in 1879 with his concept of “inotagmen.” Inotagmen were small, molecular particles that aggregated to form protoplasm and existed in a rod-shape during periods of rest, and in a spherical shape during contraction.¹²⁴ This theory coalesces more closely to Reich’s own ideas about the spherical nature of anxiety/contraction.

At the end of the nineteenth century, ideas about protoplasmic movement changed entirely with improvements in microscopic technique. Upon discovering that small particles did not uniformly compose the stuff of protoplasm but actually existed suspended within a homogenous fluid, researchers began to think about protoplasm and unicellular organisms like amoebae in a different way. Quincke and Berthold were the first to describe protoplasmic movement in terms of how fluids functioned on solid surfaces.¹²⁵ Berthold was able to mimic the movement of the amoeba using inorganic liquid drops, such as oil and water. Surface tension was now thought to be the cause of movement in amoeba, but the mechanism of this movement remained unclear. Otto Bütschli used the most advanced optical equipment to observe the structure of protoplasm, and felt that it was an emulsion, “foam-like” in structure.¹²⁶

¹²⁴ de Bruyn, “Theories of Amoeboid Movement,” 5.

¹²⁵ G. Berthold, *Studien über Protoplasmamechanik* (Leipzig: Arthur Felix, 1886); G. Quincke, “Über periodische Ausbreitung von Flüssigkeitsoberflächen und dadurch hervorgerufene Bewegungserscheinungen,” *Annalen der Physik* 35 (1888): 580-642.

¹²⁶ de Bruyn, “Theories of Amoeboid Movement,” 7. In 1876, Bütschli demonstrated the unicellular nature of infusoria; see *Studien über die ersten Entwicklungsvorgänge der Eizelle: Die Zelltheilung und die Conjugation der Infusorien* (Frankfurt am Main.: C. Winter, 1876). From these observations, he created a new phylogenetic kingdom known as the protozoa. With the creation of a whole new classification system, the study of protozoology exploded in Germany at the beginning of the twentieth century. Bütschli also made new observations about bacterial conjugation: “Conjugation became a nonsexual process involving the material exchange and renewal of nuclear components and resulting in the rejuvenation, growth, and subsequent fission of the conjugants.” Jacobs, “From Unit to Unity,” 222.

Bütschli's theories were later modified by the German zoologist Ludwig Rhumbler, who published a lengthy article on "Protoplasm as a Physical System,"¹²⁷ in which he argues that the protoplasm is a mixture of different substances that are not soluble in one another and generate surface tensions.¹²⁸ He felt, however, that the ectoplasm is more dense than endoplasm, due to contact with the external environment (one might recall Freud's "Beyond the Pleasure Principle" here). As surface tension is reduced at a certain point on the surface of the cell, causing endoplasm to be exchanged with ectoplasm. A continuous cycling of endoplasm into ectoplasm at the anterior end of the cell allowed for movement.¹²⁹ Rhumbler, a strict mechanist, came under criticism for his belief that this surface tension could entirely explain amoeboid locomotion.¹³⁰ He would modify his opinions in response to this criticism. Reich does not provide any footnotes to indicate to the reader which papers of Rhumbler he has read.

Of course, what these scientists were describing was largely the colloidal behavior of organisms. However, it was not until the beginning of the twentieth century that the term colloid came to be commonly applied to the protoplasm.¹³¹ The application of colloid theories to amoeboid movement proved quite useful (and will be explored in more detail in the following section) as the concept of gel-sol phenomenon could be used to

¹²⁷ "Das Protoplasma als physikalisches System," *Ergebnisse der Physiologie* 14.1 (1914): 474-617.

¹²⁸ V. Hensen, "Das Protoplasma als physikalisches System von Ludwig Rhumbler." *Naturwissenschaften* 2.39 (1914): 893.

¹²⁹ de Bruyn, "Theories of Amoeboid Movement," 8.

¹³⁰ H.W. Rand and S. Hsu, "Concerning Protoplasmic Currents Accompanying Locomotion in Ameba," *Science* 65.1680 (1927): 261. Rhumbler specifically was interested in explaining this organic motion according to the laws of physics. See, "The Physics of Cell Life," *The American Naturalist* 34.397 (1900): 54-56.

¹³¹ de Bruyn, "Theories of Amoeboid Movement," 13.

explain many previous observations.¹³² It also essentially agreed with Rhumbler's ectoplasm-endoplasm process, but put it in different scientific vocabulary.

Charles Benedict Davenport is another famous figure Reich cites only in passing. His *Experimental Morphology* was a large tome, written in English. Davenport graduated from Harvard, where he served for several years as an instructor. He was also director of the Biological Laboratory at Cold Spring Harbor from 1898 to 1923, which later became the Eugenics Record Office.¹³³ He was recognized as a world leader in the study of genetics, and only focused on the so-called lower organisms early in his career. The first chapters of his *Experimental Morphology* were devoted to the effects of various stimuli on protoplasm: chemical, moisture, gravity, electricity, light, heat, and so on.

In addition to these major names, Reich also cites a more obscure, but nonetheless important, paper by Nathaniel Russell Harrington and Edward Leaming from the Department of Pathology and Physiology at Columbia University.¹³⁴ Harrington was a zoologist who died shortly after the paper was published, during an expedition in Sudan.¹³⁵ Leaming had worked and co-published with Edmund B. Wilson on fertilization and the ovum. The two men discovered that a spherical, apparently resting amoeba would begin to move when it was exposed to red or green light. Violet or white light appeared to

¹³² "As the endoplasm streams forward through the ectoplasmic tube, it gelates at the sides of the anterior end, thus adding to the gelated ectoplasm. In the middle the endoplasm continually advances, because of a contraction of the ectoplasm. The endoplasmic stream originates at the closed end of the ectoplasmic tube, where solation is continuous, in pace with the gelatin process at the open end." de Bruyn, "Theories of Amoeboid Movement," 14.

¹³³ "Charles Benedict Davenport," *Science* 99.2579 (1944): 441. As a leading member of the eugenics movement and director of the Eugenics Record Office, Davenport guided several psychologists to join the eugenics movement. Weizmann, "Early Development and Psychology," 225.

¹³⁴ "The Reaction of Amoeba to Lights of Different Colors," *American Journal of Physiology* (1899): 9-18.

¹³⁵ "Nathaniel Russell Harrington," *Science* 10.250 (1899): 529-531.

inhibit this motion. It is most likely from this paper that Reich drew his conclusion that amoeba, “flow freely under red light, but are inhibited by blue light.”¹³⁶

The choice of working with unicellular objects and protoplasm was not strictly a move away from psychoanalysis into biology. The protoplasm and amoebae tropes had been used by Freud on several occasions, and we also find much earlier reference to their psychological applications in Reich’s medical school years.¹³⁷ He was clearly thinking in terms of amoebic motion when he described, at the 1930 Conference of the German Psychoanalytical Society in Dresden, how “libidinous and other interests may be extruded and retracted [through chinks in the individual’s character armor], like pseudopodia.”¹³⁸ In painful situations the libido shrinks into a shell of hardened ego, whereas in pleasurable ones it extends itself outwards. It is also not surprising that Reich would seek to find answers to the questions of sex and death, a way to dispute the despised Eros-Thanatos dichotomy proposed by Freud, in unicellular organisms. This was part of a larger trend in late nineteenth and early twentieth-century German biology to explain sex or rejuvenescence and the process of death or senescence by looking to the protozoa.¹³⁹

¹³⁶ Reich, *Bioelectrical Investigation*, 44. This is somewhat fascinating, as Reich would later associate the color blue with positive orgone energy.

¹³⁷ For example, Reich, *Passion of Youth*, 169.

¹³⁸ Wilhelm Reich, “The Characterological Mastery of the Oedipus Complex,” *International Journal of Psycho-Analysis* 12 (1931): 454.

¹³⁹ A.J. Lustig, “Sex, Death, and Evolution in Proto- and Metazoa, 1876-1913,” *Journal of the History of Biology* 33 (2000): 221-246. Also, Fredrick B. Churchill, “The Guts of the Matter: Infusoria from Ehrenberg to Bütschli, 1838-1876,” *Journal of the History of Biology* 22.2 (1989): 189-213. Whereas Weismann saw death as a secondary adaptation that allowed for evolutionary variation, Bütschli considered there to be a special need to recharge the nucleus through conjugation, which circumvented death. Lustig, “Sex, Death, and Evolution,” 233.

Colloid Chemistry

Reich took Freud's perhaps metaphorical use of the amoeba seriously and looked for physiological explanations of how these basic life forms function. He discovered in colloid chemistry, especially the work of Friedrich Kraus, the answer to this question. Briefly, a colloid is essentially a suspension. When a mixture of microscopically dispersed insoluble particles is suspended in another substance it becomes a colloidal suspension. What makes it different from a solution is that it has a dispersed phase and a continuous phase. A colloid does not settle or if it does, it takes a very long time. Colloid chemistry combines physics, chemistry, and biology in a materialist science. Attempts to delineate the various components of the protoplasm, to explain morphology and basic mechanics, were in the end nothing other than colloid chemistry. Colloid chemistry was also explains many aspects of the cell, which has liquid and solid phases.

Although alchemists were involved in the production of colloidal gold, supposed elixirs of life, it was not until 1861 that man began to recognize colloids as distinct entities. The word was coined by Thomas Graham, the so-called "father" of colloid chemistry, in 1861, and used to describe systems that exhibited slow diffusion through a porous membrane.¹⁴⁰ "By 'colloids' he [Graham] designated jelly-like substances which diffuse very slowly, or not at all, through semi-permeable membranes, such as parchment paper, in contradistinction to crystalloids, a term he applied to substances which diffused or dialyzed rapidly and had the general characteristic of crystallizing out of solutions."¹⁴¹

¹⁴⁰ D.H. Everett, "What are Colloids?", in *Basic Principles of Colloid Science* (London: Royal Society of Chemistry, 1988), 12. Also: Andrew Ede, "Early History," *The Rise and Decline of Colloid Science in North America, 1900-1935: The Neglected Dimension* (Burlington, VT: Ashgate, 2007), 8-16.

¹⁴¹ Hermann Hille, "A History of Colloids in Medicine," *Medical Life* 32 (1925): 425-426.

Graham also proposed that the protoplasm was composed of colloids.¹⁴² At the end of the nineteenth century, new discoveries in chemical kinetics and electrolytics progressed the discipline of colloid chemistry; John Tyndall laid the foundation for aerosol science, elucidating the so-called Tyndall Effect in 1868;¹⁴³ this was followed by the 1887 discovery by Svante Arrhenius that suspended particles could dissociate into positive and negative ions in water, suggesting that while the colloidal solution as a whole is electrically neutral, it is held together by a balance in the electrical charge of the particles and the dispersion medium.¹⁴⁴

Colloids are defined as:

an intermediate class of materials lying between bulk and molecularly dispersed systems, in which, although one component is finely dispersed in another, the degree of subdivision does not approach that in simple molecular mixtures. Systems of this kind, *colloids*, have special properties which are of great practical importance, . . . appropriately described . . . as lying in the World of Neglected Dimensions. . . . They consist of a *dispersed phase* (or *discontinuous phase*) distributed uniformly in a finely divided state in a *dispersion medium* (or *continuous phase*).¹⁴⁵

Blood, bone, muscle, and cell membranes are all common biological colloids. Of course, the cell's nuclei and protoplasm (later cytosome) are also considered to be colloidal. For this reason, cell theory was intimately connected to colloid chemistry in the early

¹⁴² William Bechtel, *Discovering Cell Mechanisms: The Creation of Modern Cell Biology* (New York: Cambridge University Press, 2006), 94.

¹⁴³ The Tyndall Effect refers to the scattering of light as it travels through a colloid. It should be noted that Reich was quite fascinated with the reason for the sky being blue. He would later attribute this to orgone energy, which was bluish in color, however, Tyndall reasoned that the light of the sky must be related to the scattering of light as it traveled through particles suspended in the air. See Milton Kerker, "Classics and the Classicists of Colloid and Interface Science: 6. John Tyndall," *Journal of Colloid and Interface Science* 119 (1987): 602–604. Also, Matt Simon, "Fantastically Wrong: Why is the Sky Blue? It's Packed with Sexy Energy, Of Course," *Wired.com*, 26 November 2014.

¹⁴⁴ Garland Allen, *Life Science in the Twentieth Century* (New York: Cambridge University Press, 1971), 76.

¹⁴⁵ Everett, "What are Colloids?", 2. Emphasis original.

twentieth century. The cell was a heterogeneous system composed of two similarly heterogeneous components. It was even thought by many that colloids were the key to understanding vital force through physico-chemical terms. Loeb worked on colloids, building upon the Frederick G. Donnan's theory of membrane equilibrium, a successful application of colloid science in the biological realm.¹⁴⁶ Loeb was able to prove that colloids, including proteins, do not differ from crystalloids in their behavior.¹⁴⁷ It became more proper, therefore, to speak of colloid *states* rather than colloid substances.

Wolfgang Ostwald, a pioneer in the field, is credited with coining the term “colloid science,” which more properly captures the essence of the discipline, as well as founding the Kolloid Gesellschaft, organizing journals pertaining to colloid research, and publishing the important *The World of Neglected Dimensions* in 1914.¹⁴⁸ Graham suggested that colloid science could stand as its own discipline that focused on the reactivity of surfaces and interfaces. The colloid is not a particular substance to be studied, but rather a state of matter.¹⁴⁹

In the early twentieth century, it was believed that life itself could be explained through an analysis of the properties of the colloids that made up the cell and the organism; colloid chemistry allowed for the application of methodologies from physics

¹⁴⁶ Herman Robert Bogue, *The Theory and Application of Colloidal Behavior*, vol. 1 (New York: McGraw-Hill, 1924), v. Accessed through Cornell Library's "Core Historical Literature of Agriculture," chla.library.cornell.edu.

¹⁴⁷ Jacques Loeb, *Proteins and the Theory of Colloidal Behavior* (New York: McGraw-Hill, 1922). Accessed through Cornell Library's "Core Historical Literature of Agriculture," chla.library.cornell.edu.

¹⁴⁸ See Ernst A. Hauser, "The History of Colloid Science: In Memory of Wolfgang Ostwald," *Journal of Chemical Education* 32 (1955): 2–9.

¹⁴⁹ See Wolfgang Ostwald, *A Handbook of Colloid Chemistry* (Philadelphia: P. Blakiston's Son, 1919).

and chemistry to biological problems.¹⁵⁰ However, the discipline was quickly replaced by molecular biology, the macromolecular theory better accounting for the observations of colloid scientists. Nevertheless, during the time that Reich was developing his theories about bioelectricity and the orgasm, colloid chemistry was an increasingly marginal, but still viable science. Colloid scientists were, in their own words, “unable to imagine that the complicated and adaptive phenomena of Life could possibly associated with any other than a colloid system.”¹⁵¹

Reich was particularly interested in Kraus’s appropriation of colloid science. According to Kraus, the nervous system functioned through bioelectricity produced by the dissolution of mineral salts, creating electrical charges he referred to as “vegetative currents” (*vegetative Strömung*). Water was particularly important for living organisms, as it regulated the electrolytic processes by producing a swelling and shrinking of the colloids. The function of colloids could be observed at the surface of the cell membrane, at the surface of organs within the body, and at an organismic level. Among other things, Kraus specialized in the study of alkalis, specifically the role potassium and calcium in the bloodstream and their effects on organs like the heart. Kraus carried out significant work on the role of electrolytes with Zondek. They determined that the concentration of electrolytes effected the nervous system in two opposing directions: vagus excitation was stimulated by an increased concentration of potassium, and sympathetic stimulation by an increase in calcium.¹⁵²

¹⁵⁰ Michel Morange and Matthew Cobb, *A History of Molecular Biology* (Cambridge, MA: Harvard University Press, 1998), 12.

¹⁵¹ Heinrich Bechhold, *Colloids in Biology and Medicine* (New York: D. Van Nostrand, 1919), 214.

¹⁵² See S.G. Zondek, “Zur Frage der Vagus- und Sympathikuswirkung,” *Naunyn-Schmiedeberg's Archiv für experimentelle Pathologie und Pharmakologie* 143 (1929): 192–208.

Kraus saw the vegetative nervous system as encompassing nerves, hormones, and electrolytes. Of Kraus's employment of the then new colloid chemistry, one biographer remarked:

It may seem like a tragedy of his situation, that the transfer of the new, often immature knowledge of the natural sciences to the biological object, and especially to the problems of man, was at that time insufficiently assailable to experimentation, and to some extent probably went far beyond the experimental possibilities of a clinical laboratory. It seems even more admirable to me that in spite of this situation, Kraus's influence on almost all of his students worked not in the direction of a fantastical natural philosophy of medicine, but rather in the direction of an exact natural science-based experimental and clinical internal medicine.¹⁵³

There was perhaps something ultimately appealing to Reich's Marxist leanings in the substance of the colloid.¹⁵⁴ As Prenant writes in *Biology and Marxism*:

the colloidal state permits living matter to be neither a simple mixture of chemical substances nor to be confined to the rigid structure of a chemical molecule. . . . But this is not all. Colloids, whether living or non-living, possess another property . . . The reactions taking place at one time depend on the previous reactions which the substance has taken part in. These have a historical character. . . . with colloids, the final result depends very largely on the conditions through which it passes during the course of preparation, since it is these conditions which partly determine its structure. This conception is sometimes expressed by speaking of the 'memory' of colloids. . . . it is correct as well as suggestive to see in this imprint of the past expressed in the structure of colloidal living matter what is undoubtedly the material basis both of psychological memory and of heredity.¹⁵⁵

¹⁵³ Ernst Wollheim, "Friedrich Kraus zum 100. Geburtstag (31.5.1958)," *Die Medizinische* 3.24 (1958): 995.

¹⁵⁴ Reich may also have been drawn to work related to colloids because, prior to the widespread use of the ultracentrifuge, the lab of the colloid chemist was characterized by a collection of instruments of both low cost and easy assembly. Reich did not have his own laboratory or a large amount of research funds at his disposal, so methods that were easily accessible to the non-specialist, both financially and materially, would have been valuable to him. See Andrew Ede, "Colloids and Quantification: The Ultracentrifuge and its Transformation of Colloid Chemistry," *Ambix* 32.1 (1996): 32.

¹⁵⁵ Marcel Prenant, *Biology and Marxism* (New York: International Publishers, 1943), 95.

Relatively little is written about Kraus in English, although he was quite famous for his introduction of the electrocardiogram to Germany.¹⁵⁶ At the University of Prague, Kraus worked together in physiological-chemistry with Franz Hofmeister, the chair of experimental pharmacology.¹⁵⁷ As a student, Kraus was opposed to allowing the so-called natural healing movements (*Naturheilkunde*), from hydrotherapy to hypnotism, a prominent place within university academics, and he worked to show how their dogmatic views were closely aligned with religious and faith healing traditions.¹⁵⁸ He became chief physician at the Rudolf Hospital, and later was promoted to a chaired position at the University of Graz. He was later appointed to the University of Berlin, where he taught until 1929.¹⁵⁹ Despite his earlier distaste for fringe movements, Kraus went on to develop his own specific theory of illness, which he termed “Syzygiology.”¹⁶⁰ He also endorsed the concept of “ectoscopy,” the diagnosis of internal disease by the study of the movement of the abdominal wall during speech.¹⁶¹ His syzygiology was not well received, although his book on the subject was positively reviewed by Reich.¹⁶²

¹⁵⁶ James E. Strick, *Wilhelm Reich: Biologist* (Harvard University Press, 2015), 57. Strick refers to Kraus as “EKG creator.” However, it is Willem Einthoven who won the Nobel Prize in medicine for this discovery. There is a German-language dissertation on Kraus: Hedwig Herr, “Die Syzygiologie von Friedrich Kraus,” Ph.D. diss., Universität Münster, 1965.

¹⁵⁷ Karl Rothschild, *History of Physiology* (Huntington, N.Y.: R.E. Krieger, 1973), 288.

¹⁵⁸ Avi Sharma, “Medicine from the Margins? Naturheilkunde from Medical Heterodoxy to the University of Berlin, 1889-1920,” *Social History of Medicine* 24.2 (2011): 344.

¹⁵⁹ “The Late Professor Friedrich Kraus,” *The Lancet* 227.5884 (1936): 1328.

¹⁶⁰ Friedrich Kraus, *Die allgemeine und spezielle Pathologie der Person: Klinische Syzygiologie* (Liepzig: G. Thieme, 1919).

¹⁶¹ Kraus penned the preface to Eduard Wiesz, *Diagnostik mit freiem Auge: Ektoskopie* (Berlin: Urban and Schwarzenberg, 1924).

¹⁶² Wilhelm Reich, “Book Review: Allgemeine und spezielle Pathologie der Person, klinische Syzygiologie, by Fr. Kraus,” *International Zeitschrift für Psychoanalyse* 13.3 (1927): 338-339.

Of Kraus's work, it would be later remarked: "Empiricism had little place in the scientific method by which he built up his clinic. His attitude was experimental and therefore largely based on positive facts."¹⁶³ Syzygiology regarded "the organism as an interconnected system of membranes that partially separate compartments of ionic, electrolytic fluids. . . . Differences of electrical potential (voltage) in differing compartments and surfaces would provide potential energy to drive bodily processes."¹⁶⁴ Aware of the importance of water in colloidal interactions in biological systems, it was Kraus who developed the so-called "fluid theory of life" or "*Nässetheorie des Lebens*" in German. From it, Reich derived the assumption that "chemically the parasympathetic is functionally identified with alkalinity and sodium and potassium ions, the sympathetic with acidity and Ca ions."¹⁶⁵ According to Kraus and Zondek, "the ionic state itself only represents one aspect among many which determine the reaction [of the vegetative nervous system] . . . the proper functioning depends on the establishment of a definite equilibrium between the electrolyte and colloidal particles."¹⁶⁶

Reich discovered in the writing of Kraus inspiration for his bioelectrical theory and his attempt to extend it to all aspects of organic and social life. Protoplasm links physical observations about the movement of a cell, derived from work with amoebae, protists, and artificial colloid suspensions, with chemical theories derived from colloid chemistry. According to Kraus, since all the principles of colloid chemistry are the same

¹⁶³ "The Late Professor Friedrich Kraus," 1328.

¹⁶⁴ Strick, *Wilhelm Reich: Biologist*, 57.

¹⁶⁵ Elsworth F. Baker, *Man in the Trap: The Causes of Blocked Sexual Energy* (New York: MacMillan, 1967), 6.

¹⁶⁶ Goldstein, *The Organism*, 77.

for protoplasm, it is possible to use the language of inorganic chemistry to describe organic and social problems:

Organic and social problems can be treated in the same language, since the same governing principles can be supposed for all protoplasmic events as for those of the form, preservation, properties, and transformation of colloidal solutions, the organic can be transformed into inorganic states, and the researcher is, in accordance with the relativity principle, to a large extent freed from himself as a reference body.¹⁶⁷

For Kraus, the language of colloid chemistry is one of energy and tension, regulated by dispersed ions. The motion of these particles and how they affect the surface tension of their containers (cells, blood vessels, skin) is essentially the entire life process. “The organism is a transformer [*Verwandler*] of Brownian motion as the primary energy on which diffusion, osmosis, etc. rely.”¹⁶⁸ He considered the electrolytic stimulation of the nerves to be the force that allowed vegetative organs to function. Specifically, the vagus (parasympathetic) nerves are regulated by potassium, and the sympathetic nerves by calcium.

Sexuality and Anxiety: The Basic Antithesis of Vegetative Life

Based on the material described above, Reich suggests that there is a functional dualism between the mind and the body with psychic functions being built on top of a biophysiological substrate. Using the laws of dialectical materialism, Reich reduces down. No matter how difficult it is to comprehend the function of the psyche and no matter how many new properties it may possess, since it evolves from the

¹⁶⁷ Friedrich Kraus, “Die Person in der Medizin aus dem Gesichtspunkt der Kolloidchemie,” *Spezielle Pathologie und Therapie innerer Krankheiten*, Band 2, ed. Theodor Brugsch (Berlin: Urban and Schwarzenberg, 1928), 295-6. Translation my own. Reich noted how complicated Kraus’s language is, and this certainly holds true

¹⁶⁸ Kraus, “Die Person in der Medizin,” 304.

biophysiological apparatus it must also behave according to the same rules. Therefore, the law of tension and relaxation, as elaborated in “The Orgasm as Electrophysiological Discharge,” must also apply to the psyche.

The second thing Reich does is to posit an antithesis between pleasure (sexuality) and anxiety. This is then mapped onto the autonomic nervous system, where sexual excitation is experienced parasympathetically and anxiety corresponds to the sympathetic. This supposition is supported by the work of Walter and Kathë Misch with choline. The latter was a member of the Berlin Socialist Society for Sexual Consultation and Sexual Research founded by Reich.¹⁶⁹ The couple carried out research on the effects of choline on anxiety.¹⁷⁰ They found that choline cancelled out many of the somatic effects of anxiety through parasympathetic activation. The more anxiety was rooted in bodily sensations like accelerated heartbeat, the more effective were choline preparations and injections of acetylcholine in immediately relieving this affect. They would continue to publish on the issue of anxiety, even endorsing Reich’s view that incipient feelings of sexual arousal are easily transformed into anxiety.¹⁷¹ According to Reich, they were heavily influenced by his 1927 work on the function of the orgasm.¹⁷² Kathë was a seminar student of Reich’s. He came to dislike her because he believed she was not properly crediting his work.¹⁷³ In their published work, the couple endorses concepts such

¹⁶⁹ Reich *Speaks of Freud*, 79.

¹⁷⁰ W. Misch and K. Misch-Frankl, “Die vegetative Genese der neurotischen Angst und ihre medikamentöse Beseitigung,” *Nervenarzt* 5.8 (1932): 415-418.

¹⁷¹ Kathë Misch, “Die biologischen Grundlagen der Freudschen Angsttheorie,” *Internationale Zeitschrift für Psychoanalyse* 21 (1935): 65.

¹⁷² Reich, *Bioelectrical Investigation*, 33.

¹⁷³ See his letter to her on 11 June 1935 (#202), Wilhelm Reich Archives, Correspondence Box 5.

as “libido-stasis anxiety,” and they assert that in all cases of anxiety they observed “there was found some sexual damage, such as the inhibition of normal relief, and since the anxiety could be removed both by the prevention of this and by choline medication, this confirms Freud’s theory of the damming up of libido, and Reich’s theory of the origin of anxiety being due to a sympathetic-toxic action of the sexual hormone.”¹⁷⁴

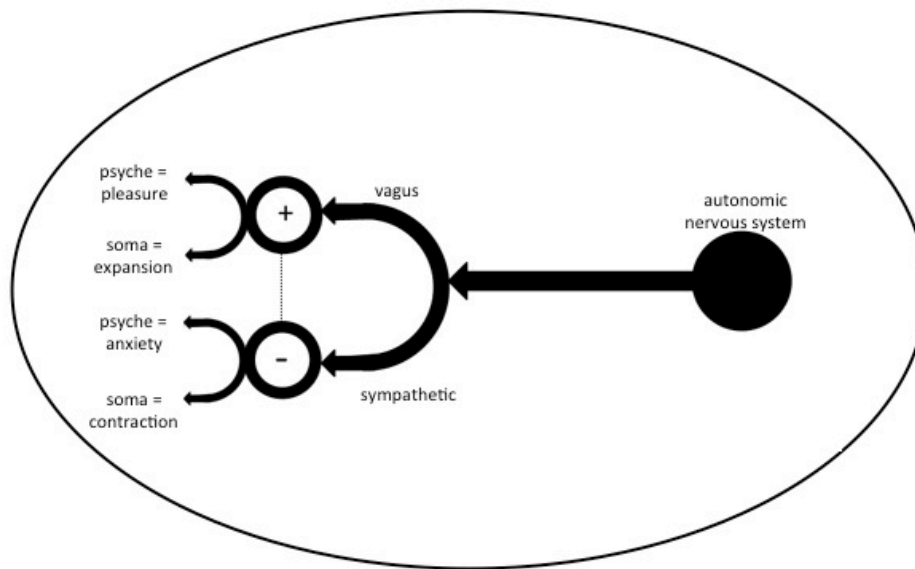


Figure 3.3: My depiction of Reich’s schema of the autonomic (vegetative) nervous system. I have enclosed it within a periphery to show how Reich envisioned this system as providing a form of basic motion. (Created by author.)

Figure 3.3 is my own schematic illustration of Reich’s theory. If one flips his famous orgone symbol on the side, it is easier to understand the train of his thought. The autonomic nervous system is the core of the organism. From it extend the vagus nerves and the sympathetic nerves. These nerves function in opposition to each other. The vagus nerve is responsibility for the psychic sensation of pleasure and the somatic experience of

¹⁷⁴ Walter Misch, “The Syndrome of Neurotic Anxiety: The Somatic and Psychic Components of its Genesis and Therapy,” *British Journal of Psychiatry* 81 (1935): 389.

expansion. It represents a positive stance of an organism facing the world. The sympathetic nerves are responsible for the psychological experience of anxiety and for a somatic contraction. It represents a negative stance towards the external environment. The sympathetic and parasympathetic system exist in a state of tense equilibrium. Movement is created by oscillations of energy created either by an expansion, when the vagus nerve fills with charge and repels the sympathetic nerves, or contraction, when energy is channeled into the sympathetic system, decreasing its negativity and drawing it towards the vagus. What was the nature of this energy? Reich suggested that it was libido and that it is electrical.

Sexuality and anxiety are mapped onto the basic forms of motion Reich sees as occurring within the amoebae. Anxiety corresponds to a desire to move away from the world, a centripetal flow, and the occurrence of a sphere-like shape. Sexuality corresponds to a movement towards the world, a centrifugal flow, and the extension of pseudopodia. Based on his understanding of the work discussed above, Reich concludes: “Anxiety is to be understood fundamentally as a central stasis of fluid (in psychological terms, central excitation), and pleasure in general, as well as sexual pleasure in particular, is to be seen as a peripheral expansion of bodily fluids (in psychological terms, peripheral excitation).”¹⁷⁵ Reich rejects the idea that surface tension alone determines the flow of plasma, and argues that it is the addition of bioelectricity to the mechanical tension/relaxation cycle that is the nature of life.

¹⁷⁵ Reich, *Bioelectrical Investigation*, 47.

The Psychogalvanic Skin Response

Reich chose to use the psychogalvanic skin response as an indicator of bioelectrical activity. His choice of device highlights his emphasis on surfaces and prompts a discussion of the role of the skin in psychoanalysis.

The skin, the human body's largest organ, exists as a physical barrier between the *milieu intérieur* and everything in the outside world.¹⁷⁶ Speaking in terms of material reality, it is literally a container that gives shape to everything internal and holds us in form. A complex series of semi-permeable membranes, our skin allows for molecular exchange with the environment while simultaneously screening for and protecting its contents from specific forms of penetration.¹⁷⁷ Of course, the skin also functions as a release valve for bodily humors and energy: excess heat is dissipated through sweating; cutaneous respiration helps to constantly rid the body of carbon dioxide; a wide range of waste products are secreted from the pores of the skin.¹⁷⁸ Although we will not delve into the phenomenological implications here, the surface of our bodies is also the landscape of a microscopic ecosystem: There are numerous bacteria that can only survive on the human skin, living out their own unique dramas unbeknownst to us.¹⁷⁹

From a psychological standpoint, the skin demarcates the outer surface of the self and is the part of a person most readily accessible to the observant eye; it therefore “appears to be the most appropriate site for the somatic transformation of subjective

¹⁷⁶ Claude Bernard, *Experimental Medicine* (New Brunswick: Transaction, 1999).

¹⁷⁷ J.H. Byrne and S.G. Schultz, *An Introduction to Membrane Transport and Bioelectricity*, 2nd ed. (New York: Raven Press, 1994).

¹⁷⁸ Nina G. Jablonski, *Skin: A Natural History* (Berkeley: University of California Press, 2006).

¹⁷⁹ Mary Marples, “The Human Skin as an Ecosystem,” *Ecology in Theory and Practice*, ed. Jonathan Benthall (New York: Viking Press, 1973), 114-128.

psychological contents.”¹⁸⁰ It should come as no surprise that throughout history various forms of skin reading have enjoyed popularity, from physiognomy to palmistry.¹⁸¹ Today, terms like “thick skin” and “thin skin” remain evocative, while words like oily, slick, or greasy can be understood when applied to both personality and countenance.¹⁸² Since the skin seems to say something about the character of an individual, blemished or diseased skin often symbolizes sinfulness or impurity.¹⁸³

Freud thought that the skin was the biological organ most easily invested with libidinal energy, and was therefore the body’s “erotogenic zone par excellence.”¹⁸⁴ In other words, the skin is a genital-substitute subject to the id and capable of excitability and hysterical conversion. In fact, all external sensations are mediated by the skin: sound is transformed into a message decodable by the neurons in the brain thanks to small hairs on the surface of the inner ear, similarly for smell; taste is registered through the skin cells of the tongue; sight is possible because of light refracting through the transparent membrane covering our eyeballs; and, of course, all stimulation from the outside world is registered by the cells of the epidermis covering our bodies.

Biologically, the skin is derived from the same embryonic tissue as the central nervous system, and “there is an ongoing two-way physiologic dialogue between

¹⁸⁰ Alberto Cossidente and Mario G. Sarti, “History and Fundamentals of Psychosomatic Dermatology,” *Clinics in Dermatology* 2.4 (1984): 8.

¹⁸¹ J. Zeigler, “Skin and Character in Medieval and Early Renaissance Physiognomy,” *Micrologus* 13 (2005).

¹⁸² Steven Connor, *The Book of Skin* (Ithica: Cornell University Press, 2004).

¹⁸³ Ted Grossbart, *Skin Deep: A Mind/Body Program for Healthy Skin* (New York: W. Morrow, 1986). It should be noted that Reich suffered from psoriasis and had personal insight into the psychological ramifications of skin disease.

¹⁸⁴ Sigmund Freud, “Three Essays on the Theory of Sexuality,” 1493.

functioning and emotional input, on the one hand, and cutaneous expression, on the other.”¹⁸⁵ The full ramifications of this fact remain poorly understood, but the embryonic link between skin and nerves functions as a starting point for psychoanalytic theorists interested in quantifying psychological or libidinal energy in a laboratory setting. For Reich, when the human body was reduced to the structure of a living cell, the epidermis was the surface or the cell membrane, and the nucleus was the nervous system. This was in line with thinking that held that the nucleus and cell wall were made of similar material.

Exactly what is being measured by the psychogalvanic skin response is not clear, but it is understood to be a biological response to an external stimuli. One reviewer describes: “Like other autonomic responses, it usually cannot be voluntarily inhibited, when an adequate stimulus situation is present, though it may sometimes be voluntarily produced.”¹⁸⁶ From a physiological standpoint, there are three possibilities: vascular dilation, the secretory activity of sweat glands, and involuntary muscular activity. These theories originate from three different scientists: Féré, Tarchanoff, and Sommer.

Interest in the electrical potentials of the skin emerged in the mid-nineteenth century thanks to a proliferation of physiological instruments. D’Agostino notes that by the 1840s, “electric instrumentation in steady or slowly varying currents and static potentials had reached a remarkable standard of precision in Germany and the United Kingdom.”¹⁸⁷ In one of the first psychophysiological experiments, Ernst Heinrich Weber

¹⁸⁵ Caroline S. Koblenzer, “Psychodermatology of Women,” *Clinics in Dermatology* 15 (1997): 127.

¹⁸⁶ G.H. Wang, “The Galvanic Skin Reflex: A Review of Old and Recent Works from a Physiologic Point of View II,” *American Journal of Physical Medicine* 37.1 (1958): 97.

¹⁸⁷ Salvo D’Agostino, “German Electrodynamics in the 1870’s,” in *A History of the Ideas of Theoretical Physics: Essays on the Nineteenth and Twentieth Centuries* (Boston: Kluwer Academic, 2002), 115

took measurements on perception of the distance between two pinpricks on the skin in the 1850s.¹⁸⁸ In 1888, Féré was the first to publish on the physiological cause of the psychogalvanic skin response.¹⁸⁹ He measured changes in skin resistance and suggested that it was a measure of vasodilation, and the theory was later revised to that of vasoconstriction. “Féré showed that in patients with hysteria a variety of excitations—visual, auditory, gustatory, olfactory, and emotional—decrease the resistance that the body offers to the passage of a minute directional current.”¹⁹⁰

Tarchanoff also published on the psychogalvanic skin response, but he measured differences in skin potentials.¹⁹¹ The Tarchanoff method took measurements of electrical resistance at the skin’s surface with no externally imposed current, and it is still used today. Unlike other methods of measurement, it records weak currents actually produced by the organism. Ivan Romanovitch Tarchanoff (1848-1908), chair of physiology at the University of St. Petersburg, was a student of Claude Bernard.¹⁹² He was also a student of Ivan M. Sechenov, the so-called “father of Russian physiology,” who discovered the

¹⁸⁸ Mitchell G. Ash, “Making A Science of Mind: Styles of Reasoning in Sensory Physiology and Experimental Psychology,” in *Gestalt Psychology in German Culture, 1890-1967: Holism and the Quest for Objectivity* (New York: Cambridge University Press, 1994), 59.

¹⁸⁹ C. Fere, “Note sur des modification de la resistance electrique sous l'influence des excitations sensorielles et des emotions,” *Comptes Rendus des Stances de la Societe de Biologie* 40 (1888), 217-219.

¹⁹⁰ Curt P. Richter and Frederick G. Whelan, “Description of a Skin Galvanometer that Gives a Graphic Record of Activity in the Sympathetic Nervous System,” *Journal of Neurosurgery* 6.4 (1949): 279.

¹⁹¹ A.C. Mundy-Castle and B.L. McKiever, “The Psychophysiological Significance of the Galvanic Skin Response,” *Journal of Experimental Psychology* 46.1 (1953): 15.

¹⁹² Rothschild, *History of Physiology*, 271. See also: Merab G. Tsagareli, “Ivane Tarkhnishvili (Tarchanoff): A Major Georgia Figure from the Russian Physiological School,” *Journal of the History of the Neurosciences* 21 (2012): 393–408; and Jan Widacki, “Ivane Tarkhnishvili (Ivan Tarchanoff) and his Links with Poland,” *Journal of the History of the Neurosciences* 25 (2016): 204–212.

central inhibition mechanism for reflex processes occurring in the nervous system.¹⁹³

Tarchanoff suggested that sweat glands responded to electrical stimulation by changes in cell membrane permeability. It was suggested that the skin secreted more or less sweat in response to “sensory stimulations, actual affective states and emotions, but also . . . the mere memory and representation of such states.”¹⁹⁴ This theory has since been disproven, but it was acceptable in the early twentieth century, as evinced by Philipp Keller’s experiments, described earlier. Finally, Sommer’s 1902 theory identifies muscular contraction as the agent behind the psychogalvanic skin response.¹⁹⁵

In 1904, the manifestation of psychological affect in changes in resistance to galvanic current was independently discovered by Swiss electrotherapist Erich Konrad Muller. Otto Veraguth was introduced to the phenomenon and he coined the name “psychogalvanic reflex.”¹⁹⁶ Veraguth used photographic recording methods to monitor physiological reactions to Carl Gustav Jung’s word association tests.¹⁹⁷ According to Vergauth: “We cannot prevent the electric confession of our skins.”¹⁹⁸ He came to the

¹⁹³ Roths Schuh, *History of Physiology*, 329. The Russians excelled in electrophysiology. In a diary entry from January 3rd, 1935, Reich writes, “In the Soviet Union they have supposedly proved the electrical nature of living matter!” Reich, *Beyond Psychology*, 17.

¹⁹⁴ Boris Sidis and Louis Nelson, “The Nature and Causation of the Galvanic Phenomenon,” *Psychological Review* 17.2 (1910): 99.

¹⁹⁵ R. Sommer, “Zur weiteren Entwicklung der wissenschaftlichen Pyschiatric,” *Beitrage zur psychiatrischen Klinik* 1.1 (1902).

¹⁹⁶ Otto Veraguth, *Das psychogalvanische Reflexphänomen* (Berlin: Von S. Karger, 1909).

¹⁹⁷ L. Binswanger, “On the Psychogalvanic Phenomenon in Association Experiments,” in *Studies in Word-Association: Experiments in the Diagnosis of Psychopathological Conditions Carried Out at the Psychiatric Clinic of the University of Zurich, Under the Direction of C.G. Jung*, ed. C.G. Jung (New York: Moffat, Yard, and Company, 1919), 446-531.

¹⁹⁸ Otto Veraguth, “Measuring Joy and Sorrow,” *Scientific American Supplement* 67 (February 6, 1909), 87. Quoted in Otniel E. Dror, “Creating the Emotional Body: Confusion, Possibilities, and Knowledge,” in *An Emotional History of the United States*, ed. Peter N. Stearns and Jan Lewis (New York: New York University Press, 1998), 183.

conclusion that it was not sweat, or even the circulation of blood that was responsible for the phenomenon, but rather “variations of body conductivity.”¹⁹⁹ Unfortunately, the stimulation curves he obtained were believed to be artefacts of his experimental method, in which subjects gripped nickel-plated electrodes.²⁰⁰ His work interested Jung, and the apparatus was demonstrated for him. Jung got permission from Bleuler to use it to carry out experiments contrasting hysteria with dementia praecox.²⁰¹ Although Jung himself continued to develop the psychogalvanic method and introduced it to the United States, where it eventually evolved into the standard polygraph “lie detector” test, Veraguth’s work was widely denigrated in the psychoanalytic community.²⁰²

For critics the psychogalvanic response was not a reliable measure of anything.

As one commentator noted:

The fascination which the psychogalvanic reflex has held for psychologists in general, is a remarkable thing. I think this attraction is based principally on two things. The psychologist would like to believe that at last he had a method by which he might detect, and perhaps measure, that variety of human experience known as emotion. The second, and perhaps the greater lure, is that in measuring these changes he makes use of electrical instruments which at least give a semblance of physical exactness to his research.²⁰³

¹⁹⁹ Sidis and Nelson, “The Nature and Causation of the Galvanic Phenomenon,” 102.

²⁰⁰ Sidis and Nelson, “The Nature and Causation of the Galvanic Phenomenon,” 103.

²⁰¹ Eugene Taylor, “Jung Before Freud, Not Freud Before Jung: On the Reception of Jung’s Work in American Psychoanalytic Circles Between 1904 and 1909,” *Journal of Analytical Psychology* 43 (1998): 104.

²⁰² See: Freud, *The Correspondence of Sigmund Freud and Sándor Ferenczi*, 258. Ernest Jones showed similar disdain for the practice. See, Brenda Maddox, *Freud’s Wizard: Ernest Jones and the Transformation of Psychoanalysis* (Cambridge, Mass.: Da Capo Press, 2007), 56. Jung frequently made disparaging comments about Veraguth, implying he was a “hillbilly” who did not understand psychoanalysis. See John Kerr, *A Most Dangerous Method: The Story of Jung, Freud, and Sabina Spielrein* (New York: Knopf, 1993), 203.

²⁰³ Carney Landis, “Psychology and the Psychogalvanic Reflex,” *Psychological Review* 37.5 (1930): 381.

By the 1930s, many psychologists had already given up on using the reflex to measure emotions and looked for more practical applications.²⁰⁴ However, the interest in electrical measurements of the psyche did not wane.²⁰⁵

It is interesting to note that prior to Reich's experiments there were a handful of published reports about the psychogalvanic reactions of people with pathological psychiatric conditions. Örnulv Ödegaard, a psychologist working in Oslo, for example, published several studies on the subject. For him, the lines produced by the measuring apparatus were thought to represent "a sort of simple, graphic picture of the *stream of mental activity* (from its emotional-vegetative side)."²⁰⁶ Ödegaard used a string-galvanometer with zinc-electrodes, according to the protocol established by Richter. He observed four different types of possible reaction: positive, negative, biphasic, and prolonged negative. Reich does not appear to have been aware of Ödegaard's work or to have made an attempt to reach out to him.²⁰⁷

Indeed, Reich worked in relative academic isolation during the course of the bioelectrical experiments. His closest collaborators were Harald Schjelderup, his

²⁰⁴ Ging Hsi Wang, "The Galvanic Skin Reflex: A Review of Old and Recent Works from a Physiological Point of View," *Review of Physical Medicine and Rehabilitation* 37.1 (1958): 298.

²⁰⁵ There is something inherently appealing about translating emotions into electrical recordings. For example, in Germany, in 1926, Emil Ludwig proclaimed excitedly that by electrically stimulating certain areas on the surface of the head he could produce a psychogram, a personality profile of an individual. For more on the uses of electricity to record the psyche, see Cornelius Borck, "Electricity as a Medium of Psychic Life: Electrotechnological Adventures in Psychodiagnosis in Weimar Germany," *Science in Context* 14.4 (2001): 566. Since the 1960s, the use of the psychogalvanic skin response has evolved, especially in neuroscience where it is referred to as the peripheral autonomic surface potential (PASP) or the sympathetic skin response (SSR). See Jose A. Gutrecht, "Sympathetic Skin Response," *Journal of Clinical Neurophysiology* 11 (1994): 519–524.

²⁰⁶ Örnulv Ödegaard, "The Psychogalvanic Reaction in Normals and in Various Psychopathic Conditions," *Acta Psychiatrica Scandinavica* 5.1 (1930): 55. Emphasis original.

²⁰⁷ We may get a clearer picture if Norwegian scholarship on Reich is translated into English.

colleagues and students, and his two technical assistants, and there is no evidence that Reich made any effort to integrate his experiments into a larger body of research on the psychogalvanic skin response. The reasons for this, as well as the details of Reich's experimental method and the results he obtained will be discussed in detail in the next chapter.

Chapter 4:
Orgasm Theory Enters the Lab

This chapter closely follows Reich's entrance into the lab or, we might say, human orgasm's (attempted) entrance into the lab. Reich was never able to take actual measurements of human coitus because "[experimental] manipulation alone would suppress any excitation. And direct measurement is not totally free from mechanically induced fluctuations in the values obtained; e.g., disruptions may be caused by a broken contact."¹ Reich had difficulty just getting the electrodes to stay attached in the first place. In this chapter I describe some of the minutiae of the experimental set up and introduce Reich's personality during his first work in the laboratory.

In describing the oscillograph and electrodes in some detail, I also present the constant struggles of a psychoanalyst breaking into the new environment of the lab. Far from being the only psychoanalyst to do such work, as described in chapter 2 with the experiments of Bernfeld and Feitelberg, Reich was one of several analysts to work in the lab. This chapter therefore can function as a lens into the struggles of interwar analysts working with experimental methods as a whole. From confusion about how to use the device, solved through a gradual effort of constant tweaking, to disagreements over how to interpret the data, to the many breakdowns of the machinery itself, I provide the behind the scenes background to the published results.

As far as Reich's conduct as a scientist is concerned, I make the argument that many of the problems that arise with thinking about Reich as an electrophysiologist can be easily explained if we shift frameworks to think about Reich as an independent inventor. By this time, he was operating his own journal and training students in his own form of medical treatment, and he was certainly a charismatic personality. However, his

¹ Wilhelm Reich, *Bioelectrical Investigation*.

appeal goes beyond mere charisma. He was working to give birth to a new way of thinking about and approaching orgasm, and this sense of productivity is best explained through the paradigm of the inventor. It should be remembered that Reich was a pioneer in the study of human sexual arousal in a laboratory setting, and the sexological and psychoanalytic work of his predecessors on which he based his theories were typically not the result of experimental investigations.² Although this chapter is specific to Reich, could be useful as a case study for a comparative study of other scientific pioneers, especially the sexual pioneers. I have already drawn some parallels between Reich and Freud, but there is certainly comparative work that could be done on the personalities of Reich and Kinsey, and so on.

In many ways, Reich was a man outside of his time. He was seen as ahead of his time, “epoch making”—too taboo, too radical.³ This is a convenient way of excusing the failure of his contemporaries to embrace his ideas. But it is not necessarily the most useful way of thinking about Reich. Certainly, he was an outsider, but in many ways he was stuck in the past. His personality as a researcher was very much aligned with that of the heroic scientist of the nineteenth century.⁴ Part of the reason he was so misunderstood and rubbed so many of his colleagues the wrong way is because he was behaving in a way that had become anachronistic. Reich was keenly aware of the history of science and

² An exception to this is Ivan Tarchanoff, who did work on the sexual excitement of frogs. His experiments led him to believe that the filling and emptying of the seminal vessels was the biological source of sexual arousal. (Published in German as J.R. Tarchanoff, “Zur Physiologie des Geschlechtsapparates des Frosches,” *Archiv für die gesamte Physiologie des Menschen und der Tiere* 40 [1887]: 330–351.) It is not clear, however, that Reich was familiar with this aspect of Tarchanoff’s work. He cites him in connection with his later work on bioelectricity.

³ See, for example, a letter sent to Reich praising his work on orgasm. Letter from Sir Thomas Bazley, 9 January 1953, Wilhelm Reich Archives, Correspondence Box 37.

⁴ James Strick is in agreement with me on this point. See his section on “Vienna, Biology, and Medicine in the 1920s and 30s,” in *Wilhelm Reich: Biologist* (Cambridge, MA: Harvard University Press, 2015), 19–21.

its interpretations of genius, and appears to have purposefully fashioned himself as a sort of rebel scientist.⁵ It is as if he was already thinking about his work in terms of a Nobel Prize, which was still frequently being awarded to individuals who fit an “image of the heroic lone investigator.”⁶ As such, priority of ideas was important to him. In a letter from Liebeck, she cautioned Reich, “the damage you’re doing to the cause lies in the fact that sometimes one gets the impression that in the final analysis you worry more about priority than about the heart of the matter.”⁷

As it quickly became clear that his experimental program would receive little official funding, financial need caused Reich to gravitate towards a career as an independent inventor.⁸ Reich did not begin pursuing patents until after he immigrated to the United States, and even then he was far from a “patent-chaser,” but his sojourn in Norway represents a period of transition, as Reich cut ties with professional psychoanalytic and political organizations and began to pursue an independent scientific career that necessitated a self-sustaining funding system.⁹

⁵ Freeman Dyson, “The Scientist as Rebel,” in *The Scientist as Rebel*. (New York: New York Review Books, 2006), 1-11. The Institute of the History of Medicine at the University of Vienna was founded in 1914. Reich’s interest in history may have been encouraged by the presence of this institute during his medical training. See, Erna Lesky, “Institute of the History of Medicine, University of Vienna,” *Journal of the History of Medicine and Allied Sciences* 20.2 (1965):166.

⁶ Daniel P. Todes, “Pavlov’s Physiology Factory,” *Isis* 88 (1997): 206. More recently: *Ivan Pavlov: A Russian Life in Science* (New York: Oxford University Press, 2014).

⁷ Wilhelm Reich Archives, Correspondence Box 5, Letter from Lotte Liebeck to Reich, 5 December 1934, #144.

⁸ Strick notes that, while in Oslo, Reich received most of his financial backing from the wealthy Norwegian whaling magnate Lars Chirstensen. It is unclear how their relationship developed. Strick, *Wilhelm Reich: Biologist*, 335. Reich also made an unsuccessful attempt to secure funding from the Rockefeller Foundation for his experimental work, sending a letter of application to their Paris office on 19 October 1936 with a copy of the bioelectrical experiments enclosed. Wilhelm Reich Archives, Correspondence Box 9.

⁹ It should be noted that Reich alleged he only wanted to file patents in order to protect his inventions: “I do not wish to prosecute any patents and . . . I am satisfied if only applications are filed. I never intended to exploit my discovery, but I do not want that others do exploit it. Therefore the application. It is of no

Reich's charismatic personality provided a middle ground between his fruitful career as a psychologist and his later existence as a relatively successful freelance inventor. During his stay in Oslo, Reich was rapidly encountering the economic difficulties inherent in pursuing his own research program. Nevertheless, driven by his conviction and perhaps also his allegiance to Marxism, Reich rejected rational economic conduct and pursued his own theories with abandon.¹⁰ The goal of all his behavior became proving his theory of orgasm, and he anxiously pursued this work, ignoring the financial burden. Reich was driven by a fanatical enthusiasm that characterizes the creative personality.¹¹ He did not yet conceive of himself as an inventor, but still as the heroic scientist struggling to prove something fundamental that the rest of the world had overlooked.

Archival sources, including lab notebooks, correspondence, and notes, do not reflect a highly organized experimental enterprise, but are much closer to the frenetic and piecemeal work of an inventor. Of course, as James Strick has noted, it is not clear how much of Reich's earlier work has been preserved.¹² In what does remain, Reich seems at times excessively confident or suspicious—almost obsessive in his determination and somewhat narcissistic in his self-aggrandizement and the connections he draws between

importance whether it is denied or granted. The main thing is to be registered." Wilhelm Reich Archives, Correspondence Box 37, Letter to Derek Eastmond, 22 July 1946.

¹⁰ Max Weber speaks to this aspect of the charismatic personality, *On Charisma and Institution Building* (Chicago: The University of Chicago Press, 1968), 21.

¹¹ H. Stafford Hatfield, *The Inventor and His World*, 2nd ed. (Great Britain: Penguin Books, 1948), 40.

¹² Strick, *Wilhelm Reich: Biologist*, 10.

ideas.¹³ This behavior can be easily explained through the paradigm of the individual inventor. Part of Reich's own confusion lay in his insistence that the goal of his work was purely scientific. The bioelectrical experiments were self-published in Reich's Marxist sex-political journal, and they were clearly meant to have an effect beyond the simple extension of knowledge. There was a radical agenda, and orgasm was far more than a physiological phenomenon, it was a tool for revolution. A quote from Fowler illustrates the parallels between scientific invention and Marxism: "Just as a theory in the sphere of the physical sciences seeks not only to describe or explain, but also to provide opportunities for action, so Marx's theory was not only an instrument of explanation, but also a tool for the *alteration* of human society."¹⁴ For Reich, proper understanding of the physiology of orgasm would reveal something so fundamentally meaningful about the nature of life that it would serve as a foundation on which a humanistic utopia could establish itself. In more practical terms, the orgasm reflex (which Reich began to refer to as the Org.-Reflex) was a way to free up energy that could be channeled into revolutionary activity. It was a way to prepare the bodies and minds of the proletariat. Reich was, in a sense, developing a weapon to destroy capitalism. He was also convinced that the key to understanding fascism lay in sexual repression. An orgasmically potent society would never succumb to a leader like Hitler. His bioelectrical experiments were therefore extremely important in a political sense. Surely there must have been a sense of being pressed for time, with World War II looming on the horizon.

¹³ Of course, as I discuss in the conclusion, had his work bore its expected fruits, we would read into his commentary very differently.

¹⁴ W.S. Fowler, *The Development of the Scientific Method*. (New York: Macmillan, 1962), 76-77.

The Characteristics of the Independent Inventor

In reading this chapter, it will be useful to keep in mind many of the characteristics of the independent inventor in the early twentieth century, and I present this information first. H. Stafford Hatfield's monograph on *The Inventor and His World* provides a useful lens for examining Reich's bioelectrical work. Originally published in 1933, Hatfield updated his book after the war. Hatfield provides a psychological profile of the inventor that captures all the essentials of Reich's personality and the decisions he made during his bioelectrical experiments. It is interesting that Hatfield employs the same metaphors as Reich to explain personality structure. In describing the creative mind, Hatfield divides humanity into two groups: the flexible and the rigid:

Every mind worth while possesses a structure; it is not a formless mass. But in some, this structure is hard, impervious, bony, "calcified," as the pathologist says of our bodily structures. In others it is living, flexible, organic, able to yield, to admit ideas, and to modify itself so as to accommodate them.¹⁵

In this chapter, I examine Reich's work and his personality as a laboratory scientist studying orgasm. In doing so, I am enriching the historical narrative recently set out by historian of science James Strick. In *Wilhelm Reich: Biologist*, Strick argues that Reich was a competent experimental biologist who was shunned by his fellow scientists primarily because of his political affiliation and competition for limited funding from the Rockefeller Foundation.¹⁶ I expand on this narrative and suggest that several misunderstandings have arisen about Reich's career because it is being analyzed in the wrong framework. Considering his career in its entirety, it is appropriate to describe

¹⁵ Hatfield, *The Inventor and His World*, 30. This is useful for thinking about Reich's political ideology, "work democracy." Reich envisions creative energy, or work, as the same as orgasmic energy.

¹⁶ James Strick, *Wilhelm Reich: Biologist* (Cambridge, MA: Harvard University Press, 2015).

Reich as an inventor. He invented sex-economics and later vegetotherapy. He certainly ended his life in this mode. Thinking in this way opens up new questions and new forms of analysis: What differentiates a scientist from an inventor? How did Reich's economic reality mold his personality and direct his research? These questions will not be answered here, but there are certainly enough financial documents in the archives to begin to answer the second question. The first question is far more complicated, although it is clear that creativity and charisma are the main factors that link both the successful scientist and the independent inventor.¹⁷

As Aharon Kantorovich points out, the major distinction between scientific discovery and invention is that the former "is the process of exposing something which exists independently of the inquiring mind. . . . Invention is a process of generating something new according to human design, to achieve certain purposes."¹⁸ As he shows, however, this is a rather naïve view of scientific discovery that suggests nature contains objective secrets waiting to be uncovered.¹⁹ This is not true because the scientist operates within a created conceptual system, and furthermore he must generate instruments and experimental methods to test his hypotheses.²⁰ The process of scientific discovery is less an unveiling of secrets and more the creation of the very objects of inquiry. In this way, "a discovered theory may be viewed as an invention designed for the task of providing

¹⁷ Hatfield also considers elaborating on the distinction between the mentality of the scientist and the inventor to be too complicated a task. Hatfield, *The Inventor and His World*, 39.

¹⁸ *Scientific Discovery: Logic and Tinkering*. (Albany: State University of New York Press, 1993), 37.

¹⁹ That is not to say that Reich did not believe this to be true. Indeed, the title *Die Entdeckung die Orgasmus* implies a pulling away and a revealing of the "secret" of the orgasm.

²⁰ For an overview on the use of instruments in experimental psychology, see Thomas Sturm and Mitchell G. Ash, "Roles of Instruments in Psychological Research," *History of Psychology* 8 (2005): 3-34.

explanation.”²¹ With this in mind, there is less need to strictly divide the category of individual invention and scientific discovery.

The concept of the independent inventor is relatively undeveloped. Nowadays, the term is primarily used in the context of patent law and by psychologists interested in the nature of curiosity and brilliance. The paradigm of the nineteenth-century inventor is described as follows:

Inventors were the mediators between science and technology, and cannot easily be pigeonholed in either category. They were familiar with the world of academia and were often professionally linked to universities, and their inventions could be the outcome of theoretical research. However, they were aiming at a use of their findings that exceeded contributing to the extension of human knowledge.²²

Hatfield describes the independent inventor of the 1930s as an extremely charismatic individual. His personality is spontaneous. He not a follower. He is free but also lonely: “self-will, and refusal to be led, characterizes the person all throughout. It is his fate, often a hard and bitter one, to stand alone.”²³ The inventor possesses and is motivated by keen intuition, and this is rooted in “a positive life-feeling, a love of life—that is their secret.”²⁴ His charismatic personality infects everyone and draws out their own creative energy.²⁵ These are all characteristics of orgasmic potency in Reich’s terminology.

There are several other characteristics associated with the individual inventor:

²¹ Kantorovich, *Scientific Discovery*, 39.

²² John Peter Collett, “The History of Electronics: From Vacuum Tubes to Transistors,” in *Science in the Twentieth Century*, ed. John Krige and Dominique Pestre (Amsterdam: Harwood Academic Publishers, 1997), 254.

²³ Hatfield, *The Inventor and His World*, 31.

²⁴ Hatfield, *The Inventor and His World*, 32-33.

²⁵ Hatfield, *The Inventor and His World*, 83.

1. Obsession with an idea to the detriment of family, friends, and colleagues. The beginnings of a fixation are often recognizable in early childhood experience.²⁶
2. A willingness to exhaust all financial resources.²⁷
3. Highly mobile, displaying a willingness to relocate in order to pursue new opportunities, and a pattern of frequent moves. This is often with disregard for the family.²⁸
4. Concentrated, piecemeal research that will assist in the birth of the invention.²⁹
The inventor “is usually an indifferent master of his branch of technology.”³⁰
Rather than mastering a field, he takes only what he needs. This is one of the major areas of disagreement between the academic and the inventor. It is often to the inventor’s advantage that he draws on different branches of science while possessing only amateur knowledge of each.³¹

²⁶ Edmund Morris, “Edison Illuminated: The ‘Life and Phenomenon’ of an Inventor,” *This Living Hand and Other Essays* (New York: Random House, 2012), 435-441. Also, Roger Cullis, “Faith, Hope, and Clarity: The Inventor’s Role,” *Patents, Inventions, and the Dynamics of Innovation: A Multidisciplinary Study* (Northampton: Edward Elgar, 2007), 124.

²⁷ Hatfield, *The Inventor and His World*, 30.

²⁸ Naomi R. Lamoreaux and Kenneth L. Sokoloff, “The Decline of the Independent Inventor: A Schumpeterian Story?” in *Perspectives on Commercializing Innovation*, ed. F. Scott Kieff and Troy. A Paredes. (New York: Cambridge University Press, 2012), 373.

²⁹ W. Bernard Carlson, “The Competitive Advantages of the Inventor’s Workshop: Lessons from the Career of Nikola Tesla, 1886-1905,” in *De l’atelier au laboratoire: Recherche et innovation dans l’industrie électrique, XIXe-XXe siècles*, ed. Yves Bouvier (New York: P. Lang, 2011), 18.

³⁰ Hatfield, *The Inventor and His World*, 22.

³¹ Hatfield, *The Inventor and His World*, 94.

5. Failure to cite contemporaries and major contributors to a field unless they have direct influence on the development of an idea.³²
6. Tends to only conduct tests of his ideas that are likely to be successful and exhibit the best features of an invention. Rarely remembers to conduct experiments that could disprove or highlight the worst features of his work.³³
7. Cognitive dissonance about the greatness of his ideas. Jealousy over reputations, and rivalry with others.³⁴
8. Prefers employees that are weak, exploitable, and will follow orders.³⁵ In the words of Hatfield: “every effort should be made to avoid relying . . . upon other people, excepting the inventor’s own paid assistants. . . . It is much better in the end for the inventor to purchase the necessary equipment . . . and then employ a suitable person to assist him.”³⁶

We will see all of these characteristics play out in Reich’s work on the bioelectrical experiments, but to provide a brief summary: The first qualification is easily satisfied; sexuality would be the core theme of his entire life, and this can be traced back to early childhood experiences. The obsessive nature of Reich’s thought, and the

³² Siegmund Probst, “Leibniz as Reader and Second Inventor: The Cases of Barrow and Mengoli,” in *G.W. Leibniz: Interrelations between Mathematics and Philosophy*, ed. by Norma B. Goeth, Philip Beeley, and David Rabouin (Dordrecht: Springer, 2015), 111-134.

³³ Hatfield, *The Inventor and His World*, 71.

³⁴ Cullis, “Faith, Hope, and Clarity,” 125-126.

³⁵ Cullis, “Faith, Hope, and Clarity,” 120

³⁶ Hatfield, *The Inventor and His World*, 72. This was certainly, in part, due to his desire for precedence in his discoveries. For a classic piece on the importance of priority in scientific discovery, see Robert K. Merton, “Priorities in Scientific Discovery: A Chapter in the Sociology of Science,” *American Sociological Review* 22.6 (1957): 635–659.

sometimes detrimental effects of his career on his family are well-known, and were easily illustrated by his daughter Eva in her communications to her father in Oslo. She sent him a drawing where he is sitting at a chair, thinking obsessively his “three thoughts” about communism, neuroses, and when he would ever see his children again.³⁷ Other illustrations depict his at times rather desperate financial situation, the second quality of the individual inventor. As for the third, it is well known that Reich was highly mobile both for research interests and by necessity. He was forced to emigrate throughout Europe due to the rise of fascism

Regarding items four through seven, Reich’s bioelectrical experiments were conducted rapidly with relatively few trials. Their main purpose was to make progress: to discover small facts in a larger picture. He did make a nod towards more rigorous research methods when he initiated a separate study of bioelectricity in catatonic inpatients at a local hospital, but he quickly lost control of his assistants and the research program. Reich is notorious for making few, if any, footnotes in his work and omitting most references to other scholars. Cognitive dissonance is clearly distinguishable in all of Reich’s work, from the beginning. And the final characteristic is easily demonstrable in the domineering personality of Reich, who tolerated only complete agreement with all of his ideas.

By the early decades of the twentieth century, the individual inventor faced serious crisis. By the 1950s they were disdained. Writing on the eclipse of the independent inventor, van Deusen remarks: “The lone, unaided inventor can do little but concentrate on the mechanical-type inventions, the better mousetraps, that were the

³⁷ Wilhelm Reich Archives, Personal Box 9, “Correspondence – Annie, Eva, Lore, 1933–35.”

marvel of the nineteenth century but today are considered to be only gadgets.”³⁸

Industrial laboratories, where many scientists conducted research that would be patented by the company they worked for, were on the rise. It was financially impractical to be a lone wolf. Electrical work was an area of exception to the rule. The commercial potentials of communication technologies like telephone, radio, and television kept the field of electrical work open to individuals who wanted to strike it rich with a unique invention.³⁹

Experimental Hypotheses

During the summer of 1934, questions about the bioelectrical nature of sexuality that had been brewing for some time solidified into a clear research agenda. Reich had begun thinking about his experiments as early as May of 1933. He was interested in knowing how sexual energy functioned. Reich recalled, “I wanted to understand *what* erects the nipple, *what* stretches out.”⁴⁰ In order to satisfy these questions, Reich began reading in a wide variety of fields, and meeting with different professionals to talk about his concerns.

Reich first consulted with a physiologist about the possibilities of an experiment utilizing the psychogalvanic skin response in December of that year. In a typed chronology, perhaps meant to be used to organize an autobiography, he has an entry for

³⁸ Edmund L. van Deusen, “The Inventor in Eclipse,” in *The Mighty Force of Research* (New York: McGraw-Hill, 1956), 76.

³⁹ Carlson, “The Competitive Advantages of the Inventor’s Workshop,” 13-42.

⁴⁰ Wilhelm Reich, *Reich Speaks of Freud* (New York: Farrar, Straus and Giroux, 1967), 55. Emphasis original.

December of 1933 that reads, “spoke with physiologist Wright.”⁴¹ He is referring to Russian born physiologist Samson Wright (1899–1956), who immigrated to London with his Jewish parents at the age of two.⁴² Wright was a well-respect physiologist, who had been elected Fellow of the Royal College of Physicians that same year. Wright’s major laboratory work concerned respiration and circulation, although in later life he became involved in researching chemical transmitters in the nervous system. There is no documented correspondence in the archive, as the discussion took place in person during a four-week trip Reich made to London, Paris, Zurich, the Tyrol, and Vienna. Sharaf describes this trip as, “the only time Reich traveled widely not out of necessity but choice.”⁴³

Reich also records that he had a “correspondence with Kraus” sometime after February in 1934, which would have been after he returned from a brief visit to Vienna and Berlin and during his stay in Malmö, prior to living illegally in Denmark under the pseudonym Peter Stein.⁴⁴ I could not locate a copy of this early correspondence, and at one point Reich requests of a friend to please write to Kraus on his behalf, suggesting

⁴¹ Archives of the Wilhelm Reich Infant Trust, Personal Box 2, Folder 3. “Chronicle of Events, 1923-37.”

⁴² Alex Sakula, “Samson Wright (1899-1956): Physiologist Extraordinaire,” *Journal of the Royal Society of Medicine* 92 (1999): 484.

⁴³ Myron Sharaf, *Fury on Earth: A Biography of Wilhelm Reich* (New York: De Capo Press, 1994), 197.

⁴⁴ Wilhelm Reich Archives, Personal Box 2, Folder 3. Of Reich’s time in Denmark: “Reich was received by some people in Denmark as a prophet who could renew society, and especially sexual life. By others, he was perceived as a dangerous man who could tear down walls around morality and values which had acquired the status of sacredness.” Reimer Jensen and Henning Paikin, “On Psychoanalysis in Denmark,” *Scandinavian Psychoanalytic Review* 3 (1980): 106. For more on this time, see Lea Korsgaard, *Orgasmeland: Da den seksuelle revolution kom til Danmark* (Copenhagen: Gyldendal Fakta, 2014). On Danish Gestalt psychology in this period, Jörgen L. Pind, *Edgar Rubin and Psychology in Denmark: Figure and Ground* (Berlin: Springer, 2014).

their relationship was not as close as it could be.⁴⁵ Nevertheless, as was shown in the previous chapter, it is quite clear that Reich considered Kraus to be a major source of intellectual inspiration. He was also interested in Kraus's work with Samuel G. Zondek on the impact of ions on the heart.⁴⁶ This is clear from his correspondence with Fenichel from this period, where Fenichel tells him that he is "curious to see the final clarification of the Kraus-Zondek doctrine," to which Reich replies, "I never thought I was the first to assume the identity of psyche and soma; but I believe I'll be the first to solve the problem dialectically."⁴⁷

Reich would later send Kraus a letter, in which he enclosed a report of his bioelectrical experiments:

26 May 1937

Dear Professor!

I take the liberty to send you the enclosed experimental work, which is very highly indebted to your work in the field of potassium-calcium physiology.

I ask you kindly to write me your opinion about it.

With many thanks.

Yours,
W.R.⁴⁸

⁴⁵ On April 1st, 1935, Reich asked his friend Lotte Lieback to contact Kraus for him. See: Wilhelm Reich, *Beyond Psychology: Letters and Journals, 1934-1939* (New York: Farrar, Straus and Giroux, 1994), 42.

⁴⁶ Reich, *Bioelectrical Investigation*, 58. Zondek published an important work on electrolytes: *Die Elektrolyte: Ihre Bedeutung für Physiologie, Pathologie und Therapie* (Berlin: J. Springer, 1927). Together with Kraus, he "extended the concept of the autonomic nervous system to that of 'autonomic system,' which comprises the autonomic nervous system, the endocrine glands, and the electrolytes," in Joseph Wilder, *Stimulus and Response: The Law of Initial Value* (Cambridge, UK: Elsevier, 2014), 92.

⁴⁷ He continues, "... Unfortunately, I'm unable to consult my old notes and books on this subject." Wilhelm Reich Archives, Correspondence Box 5, 17 January, 1934.

⁴⁸ Wilhelm Reich Archives, Correspondence Box 9. This date must be incorrect, although it is typed on the letter as "Oslo, den. 26. Mai 37." Translation my own.

This is a confusing letter, as Kraus died in Berlin on 1 March 1936, and this letter was sent after his death. Reich must not have been aware of it. Strick has located an earlier letter of response to Reich's work sent by Kraus on 6 January 1935 in the U.S. State Department files.⁴⁹

We see in these interactions that Reich is committed to the third characteristic of the individual inventor: piecemeal research. When he was not lecturing at the University of Oslo, his free time was spent seeking validation for very specific aspects of his theory from individuals who have proved themselves in the profession. This is used as a form of evidence for a specific idea. Each time an idea is validated, it becomes free for use in his larger theory of sexuality and orgasm.

By August of 1934, Reich had decided to focus his energy on experimental research to prove his orgasm theory: "It's perfectly clear: the orgasm theory leads to the solution of the life problems! So obvious! It was really quite a feat to have overlooked the Orgasm! Overlooked the basic phenomenon of life! . . . Switch to biochemistry."⁵⁰ In his notes, Reich outlined his "Experimental Design to Verify the Electrophysiological Nature of Sexuality" as follows:

Theoretical assumptions: According to the sex-economic view, the libidinal anxiety system is functionally identical to the fluid system of the organism. Accordingly, libidinal excitement fully corresponds to the vagus [parasympathetic] effect, and anxious excitement to the sympathetic effect. This leads to the necessary assumption that electrical charge of hyperemic skin and mucous membranes occurs through the Vagus-Sex-Function. Similarly, orgasm occurs through the electrophysiological

⁴⁹ Strick records that Kraus was interested in Reich's work, and requested a visit with Reich in Berlin to discuss it. *Wilhelm Reich: Biologist*, 408. There is also an English translation of an excerpt of this letter from Kraus to Reich in the Wilhelm Reich archives.

⁵⁰ Wilhelm Reich Archives, Personal Box 5a.

discharge of involuntary muscle clonus. Stored excitation in the nerves is broken down by means of muscular contractions.⁵¹

Reich identifies, by means of capital letters, the Vagus-Sex-Function as the object of his experiment. He is seeking to prove the existence of a biological process through which the body's periphery, its skin, becomes electrically charged as the result of processes occurring within and parallel to the fluid system of the organism. Reich would continue throughout his career to coin new words and use capitalization and abbreviation to indicate which aspects of his theory he considered to be of his own invention. In this case, the Vagus-Sex-Function is less of a discovery and more of a simple renaming. Reich used L.R. Müller's research on the vegetative nervous system (discussed in the previous chapter) and he substituted the word pleasure for the vagus or parasympathetic nerves, and anxiety for the sympathetic. Since Müller had already described the opposing effects of the parasympathetic and sympathetic innervation, Reich simply needed to observe that anxiety states produce physical symptoms matching those described by Müller occurred under sympathetic innervation. He posited that since pleasure produces the same effects as parasympathetic stimulation, sexuality or libido was the energy that stimulated the vegetative nervous system.

Reich continues outlining his experiment by providing three hypotheses or arguments in the form of questions to be verified:

Argument 1

- 1) Is vaginal secretion an electrolyte? (Jonen-nature, Resistance)
- 2) If so, are there differences in the conductivity according to chemiophysiological composition of the secretion?
- 3) What is the source of difference in the electrical conductivity of the two postulated types of vaginal secretion?⁵²

⁵¹ Wilhelm Reich Archives, Orgone Institute Box 6, Folder 6. Translation my own.

The first argument may be reframed as the hypothesis that vaginal secretions are colloid solutions. Jonen-nature uses the word ‘Jonen,’ a term used in the early twentieth century to refer to “ingredients precipitated from chemical compounds via current.”⁵³ The electrolytic nature of vaginal secretions could be proven if, after the introduction of an electrical potential, the positive and negative particles in the solution separated and gathered at opposite poles. Reich was particularly concerned with the interaction of calcium (Ca^{2+}), the most abundant cation in the human body, bound to proteins in the bloodstream, and potassium (K^{+}), which is concentrated inside the cells of the body.⁵⁴ Reich had already deduced from his clinical work, and perhaps his own experience, that vaginal secretions appeared in two forms: “watery” or “squishy” and “oily” or “thick” and abundant.⁵⁵ Belaying his belief that vaginal secretions are, in fact, electrolytes, Reich also assumes that there is a difference in conductivity between these two types and postulates a specific source for this discrepancy. The first hypothesis seems provable only if vaginal secretion, both thick and watery, could be collected and voltage applied with an ion-selective electrode. It is not clear when Reich began working with such specimens.⁵⁶

⁵² Wilhelm Reich Archives, Orgone Institute Box 6, Folder 6. Translation my own.

⁵³ Georg Langbein, *Handbuch der elektrolytischen Metallniederschlaege* (Leipzig: J. Klinkhardt, 1903), 44.

⁵⁴ Manoj Parikh and Stephen T. Webb, “Cations: Potassium, Calcium, and Magnesium,” *Continuing Education in Anesthesia, Critical Care, and Pain* 12.4 (2012); 195-198.

⁵⁵ Wilhelm Reich, *The Bioelectrical Investigation of Sexuality and Anxiety* (New York: Farrar, Straus and Giroux, 1982), 5.

⁵⁶ His lab notes do contain a brief scrawl that mentions blood and vaginal secretions with positive and negative marks, but the meaning is unclear. See OI Box 6. Sharaf notes that while in America, Reich conceived of a precursor to the popular “pap-smear” standard at gynecological exams today, but his idea was dismissed and he was disregarded as a pervert. Sharaf, *Fury on Earth*, 296.

Argument 2

- 1) Are electrical currents derived from uninjured skin and mucous membranes (presentation of a positive or negative nature)?
- 2) If this is the case, the intensity of the surface tension is connected in a lawful manner with the turgor of the relevant parts (charge grows with increasing turgor and vice versa).
- 3) Is there mechanical surface tension of the skin without simultaneous electric charge (e.g. cold erections)? If so, what specific movement is necessary to transform the mechanical surface tension into a state of electrical charge?
- 4) Is friction or variation of contact a sine qua non for generating electrical surface tension (examination of the nature of the tickling stimulus)?
- 5) How do the following behave physiologically?
 - a. Two uninjured skins together in a peaceful and mutual friction?
 - b. An uninjured mucous membrane and unbroken skin in the same state as above?
 - c. Two mucous membranes?
- 6) What is the relationship of two mutually contacting skins or mucous membranes
 - a. in a state of dryness?
 - b. with water in between them?
 - c. when oiled?
 - d. when an electrolyte is interposed between them (salt or colloid electrolyte)?⁵⁷

The second argument harks back to late eighteenth century experiments on animal electricity,⁵⁸ the nervous or “vital fluid” that animated living creatures. The famous disagreement between Luigi Galvani, who believed that electricity accumulated inside of an organism due to a condition of disequilibrium between the interior and exterior of a muscle fiber, and Alexander Volta, who saw muscles merely as conduits for an external charge.⁵⁹ Galvani’s experiments were continued by Carlo Matteuchi, who showed that

⁵⁷ Wilhelm Reich Archives, Orgone Institute Box 6, Folder 6. Translation my own.

⁵⁸ “By this term, Galvani intended to convey his belief that animal tissue contains a heretofore neglected innate vital force which could activate nerves and muscles when spanned by metal probes . . . Furthermore, he thought that this animal electricity was secreted by the brain with the nerves conducting it to the muscles.” Francois Boller, Nanci C. Keefe, and Pierluigi Zoccolotti, “Luigi Galvani, Body Electricity, and the ‘Galvanic Skin Response,’” *Neurology* 39 (1989): 868.

⁵⁹ Marco Piccolino and Marco Bresadola, *Shocking Frogs: Galvani, Volta, and the Electric Origins of Neuroscience* (New York: Oxford University Press, 2013), 3. Naum Kipnis, “Luigi Galvani and the Debate

electricity could be elicited without the use of metals. Matteucci demonstrated the so-called “injury current”—a current could be produced in two nerveless preparation of frog thigh when an injured muscle was put into to contact with an intact one.⁶⁰ Emil Du-Bois Reymond would be inspired to spend a lifetime proving that nerves conduct electricity after his mentor, Johannes Müller, provided him with a copy of Matteucci’s publication on animal electricity in 1841.⁶¹

Reich, in fact, sought to position his own work and thinking with that of Reymond, one of the members of the so-called 1847 school of biophysics.⁶² Reich cites famous physiologists to vindicate his experimental method, including Carl Ludwig and Reymond, whose correspondence he cites as the “first reports about the skin as the seat of electromotive forces.”⁶³ Actually, little is made of skin electricity in the published correspondence, beyond a passing reference to a treatise on skin currents written by Reymond, which he describes as “the most awful work I have ever done; I got grey hair

Neurophysiology (New York: Oxford University Press, 2011); and William Turkel, *Spark From the Deep: How Shocking Experiments with Strongly Electric Fish Powered Scientific Discovery* (Baltimore: Johns Hopkins University Press, 2013).

⁶⁰ Piccolino and Bersadola, *Shocking Frogs*, 272.

⁶¹ Gabriel Finkelstein, *Emil du Bois-Reymond: Neuroscience, Self, and Society in Nineteenth-Century Germany* (Cambridge, Mass.: MIT Press, 2013), 57.

⁶² Also referred to as the 1847 group, the 1847 program, or the Berlin group. See: Paul F. Cranefield, “The Organic Physics of 1847 and the Biophysics of Today,” *Journal of the History of Medicine and Allied Sciences* 12.10 (1957): 407-423. It should be noted that Rudolf Virchow also believed that “the nervous system operated on electrical processes similar to those inside telegraph wires.” See S.D. Lamb, *Pathologist of the Mind: Adolf Meyer and the Origins of American Psychiatry* (Baltimore: Johns Hopkins University Press, 2014), 63. This same electricity would later be thought to cause a range of nervous ills: see Andreas Killen, *Berlin Electropolis: Shock, Nerves, and German Modernity* (Berkeley: University of California Press, 2006); and Linda Simon, *Dark Light: Electricity and Anxiety from the Telegraph to the X-ray* (Orlando: Harcourt, 2004).

⁶³ Reich, *Bioelectrical Investigation*, 73.

over it, though these have disappeared again (seriously).”⁶⁴ Of course, Reymond would pen a famous text on bioelectricity (*Untersuchungen über thierische Elektrizität*, 1848), and according to one historian, “His career as a physiologist may almost be summarized by the statement that he studied the electrophysiology of nerve and muscle, and the electric organs of fish.”⁶⁵ Reich very infrequently used full citations (characteristic 5), but in this instance he includes the publisher and year of the correspondences parenthetically, suggesting that the work is of particular significance to him. Reich would come to refer to himself as an “orgone biophysicist,” evoking the work conducted by Reymond and his colleagues.

In his later recollections, Reich would note: “The study of muscle contractions had been an important area of investigation in physiology for decades. I did not understand why muscle physiology did not find the connection with general animal electricity.” Displaying his interest in holism and his appreciation of Kraus’s work, Reich followed this up by remarking that “since the muscles in the body are in contact with each other and are connected with the total organism by means of body fluid, every muscle action would have a stimulating influence on the total organism.”⁶⁶

Notably, Reich would experience many of the same setbacks as Reymond did with his galvanometer: the instrument took a long time to arrive, calibration was difficult, the device was subject to constant errors induced by outside electricity (Reich would

⁶⁴ From a letter sent from Du-Bois Reymond to Ludwig, Berlin, August 2, 1852. In Paul F. Cranefield, ed., *Two Great Scientists of the Nineteenth Century: Correspondence of Emil Du Bois-Reymond and Carl Ludwig* (Baltimore: Johns Hopkins University Press, 1982), 74.

⁶⁵ Paul Cranefield, “The Philosophical and Cultural Interests of the Biophysics Movement of 1847,” *Journal of the History of Medicine and Allied Sciences* 21.1 (1966): 4.

⁶⁶ Reich, *The Function of the Orgasm*, 281.

solve this by purchasing and employing a Faraday cage), and from the start the machine was in need of constant repairs, something that gave Reymond nightmares.⁶⁷

In his second set of questions, Reich, who is not dealing with nerves but rather with the electrical conductivity of the skin, returns to question whether electricity is produced in an absence of a current of injury. Reich proposes that the turgor of the blood creates a positive or negative charge that interacts with the skin to create an electrical potential. However, he furthers this question by asking if the skin and the blood function in a dialectical relationship. In other words, does the skin merely respond to the changes occurring beneath it, or does it too become aroused or turgid, creating a complex interaction between two charged systems? The question of cold erections and of tickling are meant to speak to the nature of an “erection at the skin.” Similarly, in this second argument, vaginal secretion becomes a conducting fluid that would aid in the transfer of electricity between two electrically-charged surfaces. The second argument can be reformulated as the hypothesis that the skin possesses an electrical charge that occurs in addition to mechanical surface tension. Mucous membranes are singled out, in particular.

Argument 3

- 1) Is Blumenfeld[t]’s experiment correct, that electrical stimulation of a nerve-muscle preparation with potassium reduces the rheobase and chronaxie and increases the irritability of the muscle, and vice versa with the addition of calcium?⁶⁸
- 2) Is a surplus of potassium present in the fluid of the tissues of the living organism during libidinal excitement, and a surplus of calcium present with anxious excitement?
- 4) Check Kraus’s experiment. Calcium and oxygen consumption of the heart muscle increase, while potassium decreases.

⁶⁷ Finkelstein, *Emil du Bois-Reymond*, 61.

⁶⁸ Reich uses Lapique’s terms: “rheobase” is the smallest possible current used to stimulate a nerve, and “chronaxie” is the time taken to stimulate a nerve with a current twice its strength. See: McComas, 88.

- 4) What is the potassium-calcium metabolism in bronchial asthma, cardiac neurosis, acute anxiety, catatonia, affective disorders, vagus neurosis in a shock state, etc.? (Assumption: instability in the so-called vagus lability exists in the peripheral system as hyposexuality due to calcium surplus or potassium deficiency).⁶⁹

Ernst Blumenfeld published on the role of potassium excretion under normal and pathological conditions.⁷⁰ Chronaxie was a time stimulus provision derived in order to eliminate errors in galvanic and faradic measurements of bioelectricity.⁷¹ According to Louis Lapicque, “every anatomical element, every kind of cell, recons time according to a particular standard, say thousandths or perhaps hundredths of a second. In a given neurone, nervous impulses on the one hand, and excitability, on the other, are governed by this particular time standard.”⁷² Georges Bourguignon applied Lapicque’s concept to his work on humans. He came to believe that illness could be measured in terms of disturbances of chronaxie.⁷³ For Reich, sensibility could be measured electrically and chronologically. Potassium increases a nerve’s awareness of a stimulus, and it increases the force of the reaction. Calcium decreases irritability and makes the nerve less excitable. We might also think of this in terms of elasticity, per the assumption in Reich’s fourth point. The elasticity or lability of the parasympathetic nerves is hampered by hyposexuality—a concept Reich would develop into “anorgonia.” This is also related to

⁶⁹ Wilhelm Reich Archives, Orgone Institute Box 6, Folder 6. Translation my own.

⁷⁰ Ernst Blumenfeldt, “Beiträge zur Kaliausscheidung unter normalen und pathologischen Verhältnissen,” *Zeitschrift für experimentelle Pathologie und Therapie* 12.3 (1913): 523-528.

⁷¹ Ernst Blumenfeldt, “Die Chronaxie und Ihre Bedeutung für die Elektrodiagnostik,” *Klinische Wochenschrift* 7.3 (1928): 97-100. Reich was in communication with Lapicque, however, he was more interested in sharing with him his work on bions.

⁷² Louis Lapicque, “The Chronaxic Switching in the Nervous System,” *Science* 70.1807 (1929): 152.

⁷³ For example: G. Bourguignon, “Neuro-muscular and Vestibular Chronaxies in Multiple Sclerosis,” *Sixth Annual Conference on Neurology*. He also believed that it could be a tool for diagnosing hysteria: “Signes objectifs fournis par la chronaxie dans l’hysterie,” *Les entretiens de Bichat* 29.6 (1948): 12-6.

his theory of character armoring: as certain areas of the peripheral nervous system lose elasticity they form a muscular armor that chronically inhibits certain movements and expressions. One goal of Reich's vegetotherapy was to release muscular tension through physical pressure and emotional release. The orgasm reflex promoted the release of stored energy in the nerves and allows for a return to a state of flexibility.

Reich's next hypothesis is that libido increases nervous irritability and sensitivity, and it corresponds to potassium. Libido primes the organism for an active response to its environment. Anxiety, on the other hand, is analogous to calcium. It encourages a slower retraction of the nervous system. This corresponds to Reich's notion of "turning away from the world" from the previous chapter. It might also be remembered that anxiety had a more nuanced meaning at the time, and included symptoms of depression. The nerves were considered to be less irritable; they are mechanically weakened in a state that echoes the idea of neurasthenia. Sexuality was reducible to a dance of particles: calcium and potassium fluctuations stimulate or decrease desire. There is some confusion in Reich's notes about the role of libido/sexuality. In some instances, it is described as the governing energy that excites the nervous system, in other instances it is opposed to anxiety and both sexuality and anxiety are capable of stimulating the nervous system.

This notion was further linked to a whole host of disorders, including asthma and cancer, that Reich believed were caused by chronic anxiety. Reich clearly felt that the orgasm was key to understanding a huge range of psychiatric problems. If he could determine the physiology of orgasm he could understand its function in health and disease and begin providing therapeutic solutions for nearly every state of ill health. This undoubtedly struck many of his colleagues as boastful. Following the seventh

characteristic of the independent inventor, Reich was overextending his reach, assuming an intellectual grandeur that was undeserved. His experimental hypotheses were similarly both sweeping and abundant. Each question is a piece of a larger puzzle, but they require different experimental methods and are laden with heavy theoretical assumptions. It is easy to get lost in the minutiae and lose sight of the larger question. What for Reich was an exciting, multifaceted research agenda may have appeared hopelessly complicated to the outsider.

Getting the Experiment off the Ground

As was discussed in the previous chapter, Reich completed two thought-experiments that he self-published in the summer of 1934.⁷⁴ Excited about his work, in his diary for 8 October 1934, Reich writes: “Complete success in Oslo. Experiment not declared ‘insane’ but received *very seriously*.”⁷⁵ In fact, Reich would experience significant difficulties getting other scientists to cooperate with his research agenda. Initially, however, he had every reason to be hopeful, he had received a letter from Harald Schjelderup, head of the psychology department at Oslo that looked promising:

Oslo, October 14th, 1934

Dear Dr. Reich!

⁷⁴ Coming from a psychoanalytic discipline, the thought experiment held significant weight for Reich that it did not hold for many of his contemporaries. For more on the role of the thought experiment, see Katerina Ierodiakonou and Sophia Roux, eds. *Thought Experiments in Methodological and Historical Contexts* (Boston: Brill, 2011). On the contributions made to scientific progress by thought experiments and a method for evaluating their meaningfulness, see Michael T. Stuart, “Taming Theory with Thought Experiments: Understanding and Scientific Progress,” *Studies in History and Philosophy of Science* 58 (2016): 24–33.

⁷⁵ Wilhelm Reich Archives, Personal Box 5a. Emphasis original.

Nic Hoel and I had a long meeting with Magister Nordbö. The results of this meeting seem to me quite satisfactory. Nordbö believes the first specific experimental task to be handled should be the measurement of the electric potential of an erect penis in relation to a “quiet” [*ruhigen*] area of skin and the potential of vaginal secretions under different circumstances. If you can find subjects, Norbö is willing to oversee at least the initial, orientational experiments. He will make a decision about participating further based on these results.

You may borrow an instrument from the Physiological Institute for the first experiments. The question about whether my instruments will also be needed can be decided later, once the order of magnitude of the possible potentials is known.

It makes me happy that this matter has developed so well and I am counting on you being able to do these experiments in Oslo.

With best wishes.

Yours faithfully,

Harald Schjelderup⁷⁶

It was not until November of 1934 that Reich was able to secure his own meeting with Nordbö, a physiologist at the university of Oslo, to help him identify the correct laboratory equipment and protocols necessary for his experiment.⁷⁷ The first meeting between the two purportedly took place on the eleventh.⁷⁸ A diary entry from the twelfth reads: “People are armored! One feels this in every attempt at progress. This coldness and professional disinterest. Finally had a session with Nordbö yesterday—extremely

⁷⁶ Orgone Institute, Box 6, No. 6. Translation my own.

⁷⁷ Strick records that “Reich consulted with physiologist Wilhelm Hoffmann on the technical details of the experiment,” *Wilhelm Reich Biologist*, 65. It is not clear at what point Hoffman replaced Nordbö. Strick had greater access to Norwegian translators and informants than I, so he may be able to shed further light on this question.

⁷⁸ In a letter to Lotte Liebeck, Reich writes: “Tomorrow will be the first decisive meeting with the physiologist. Am very excited.” *Reich Speaks of Freud*, 191. See also, Wilhelm Reich Archives, Correspondence Box 5, Letter #136-2.

difficult.”⁷⁹ R. Nordbö, a Norwegian physiologist, remained Reich’s uneasy collaborator throughout the process of experimental design.⁸⁰ Reich experienced frequent setbacks in his work with him, and he reached out to Lotte Liebeck, a German psychoanalyst and one of his students, for help finding a new assistant. In a letter dated 22 November 1934, Liebeck informed Reich

today I talked with the only competent authority, Engineer Goldschmidt, who works with the University and the local physiological institutes. He also offered to speak with the professor of physiology, but requires further information. He would like to have a drawing of the switch panel showing how the equipment is supposed to be connected. Furthermore, he would need literary references or a description of the *modus operandi* so that he can suggest suitable equipment. . . . Judging from the sketchy information he has, Engineer Goldschmidt does not think you need a vibration galvanometer.⁸¹

It was not until January of the following year that a decision was made about the “physiological measuring apparatus.”⁸² Reich sent Liebeck a letter on 27 January 1935: “Yesterday the apparatus, complete with camera equipment, was ordered by the University. I hope to be able to start next week, or at the latest in two weeks, both on my own cases and at the psychiatric clinic. Philip will assist, and then continue in Copenhagen.”⁸³

⁷⁹ Reich, *Beyond Psychology*, 5.

⁸⁰ There is little information on Nordbö. One of his publications was translated into English. See: “The Concentration of Ionized Magnesium and Calcium in Milk,” *Journal of Biological Chemistry* 128 (1939): 745-757.

⁸¹ Wilhelm Reich Archives, Correspondence Box 5.

⁸² Reich to Liebeck, January 7, 1935. *Reich Speaks of Freud*, 203.

⁸³ Wilhelm Reich Archives, Correspondence Box 5, Letter #172. We must assume that Philip refers to Tage Philipson (names are often abbreviated in Reich’s correspondence), a student of Reich’s who lived in Copenhagen. Philipson was also enlisted for help in the bion experiments. See Wilhelm Reich, *The Bion Experiments on the Origin of Life* (New York: MacMillan, 2013), 6; Strick, *Wilhelm Reich: Biologist*, 274. For more on Philipson’s work with Reich on vegetotherapy, and his theory of embodied identification, see

The experiments were slated to start in the beginning of February, and Reich boasted, “Oslo’s physiological and psychological institutes have declared their readiness to help.” Somehow, things must have gotten sidetracked.⁸⁴ The oscillograph did not arrive until late-March, and Nordbö did not share in his enthusiasm, despite Reich’s claim that the “apparatus is among the most modern there is.”⁸⁵ According to the specifications of assumingly Nördbo, although the undated note on the experimental set-up simply references the “university physiologist who ordered the apparatus,” the electrodes were about ¼ to ½ mm thick and about 6 mm wide and made of polarizable silver.⁸⁶ This went against the advice of the manufacturer of the device, who suggested that there was no need to use silver, and stainless steel, attached with leucoplast and lubricated with soapy water, would be better.⁸⁷ However, Reich later stated in a letter that the electrodes he used “were all silver.”⁸⁸

Reich’s device was indeed state of the art.⁸⁹ As late as 1948, physiologists were bemoaning the lack of experimentation utilizing the psychogalvanic skin response, noting

Jon Sletvold, “‘The Reading of Emotional Expression’: Wilhelm Reich and the History of Embodied Analysis,” *Psychoanalytic Dialogues* 21.4 (2011): 453–467.

⁸⁴ Reich to F. Deutsch, January 21, 1935. *Reich Speaks of Freud*, 208.

⁸⁵ Reich to Liebeck, March 30, 1935. *Reich Speaks of Freud*, 214.

⁸⁶ Wilhelm Reich Archives, Orgone Institute Box 6, “Note – Bioelectrical Experiment.”

⁸⁷ Letter from Peter Petersen to Wilhelm Reich, March 12, 1935. In Wilhelm Reich Archives, Orgone Institute Box 6, Folder 6.

⁸⁸ This is in a 1944 letter to Ned Plunkett. Wilhelm Reich Archives, Correspondence Box 12.

⁸⁹ Robert B. Campenot, *Animal Electricity: How We Learned that the Body and Brain are Electric Machines* (Cambridge, MA: Harvard University Press, 2016), 61. See also, A.L. Hodgkin, “Chance and Design in Electrophysiology: An Informal Account of Certain Experiments on Nerve Carried out Between 1934 and 1952,” in *The Pursuit of Nature: Informal Essays on the History of Physiology* (New York: Cambridge University Press, 1977), 5. Hodgkin notes that the set-up involving rotating mirror arms and moving film was “terribly cumbersome” and “wasn’t really fast enough.”

much of the delay was due to the fact that the “instruments that most workers used were difficult to operate and did not give reliable quantitative results; furthermore they gave no graphic record at all.”⁹⁰ The equipment cost Reich about 1,000 marks,⁹¹ and is described in *The Function of the Orgasm* as follows: “an apparatus consisting of a chain of electron tubes. The idea was that the electric potential of the body would disturb the steady current (‘anode current’) of the tubes, would be amplified by the apparatus, transmitted to an electromagnetic oscillograph, and made visible on a strip of paper by reflection from a mirror.”⁹²

For all of the device’s sophistication, Nordbö did not seem to be enticed by the lure of working with it. On 23 March Reich wrote: “The oscillograph arrived today—phew!—is it complicated—! And Nordbö is as stiff as a rod—how to approach him?” Only a week later, he noted, “The Nazis are making a fuss about the experiments—Nordbö is chicken hearted, isn’t willing to do it.”⁹³

Unfortunately, Reich had no idea how to use the expensive device. He wrote to his ex-wife Annie in late March:

It is a tremendously clever piece of equipment and I stand small and stupid alongside it, not understanding a thing about it. And the physiologist is stiff as a rod. I am filled with despair. I feel like an untrained tourist with mountain boots on my feet and an axe in my hand standing at the foot of

⁹⁰ Curt P. Richter and Frederick G. Whelan, “Description of a Skin Galvanometer That Gives a Graphic Record of Activity in the Sympathetic Nervous System,” *Journal of Neurosurgery* 6.4 (1949): 279.

⁹¹ Wilhelm Reich Archives, Correspondence Box 5, Letter from Reich to Liebeck, 1 April 1935, #190a. Other letters suggest that Petersen requested a total of 2050 Swedish krona for the complete experimental setup, including the oscillography, camera, episkotister, etc. Reich may have only purchased some of this equipment, up to 1275 Swedish krona, through Petersen. See OI Box 6, Letter from Petersen to Tage Phillipson, 12 Jan 1935.

⁹² Wilhelm Reich, *The Function of the Orgasm: Volume 1 of the Discovery of the Orgone* (New York: Farrar, Straus and Giroux, 1973), 369.

⁹³ Wilhelm Reich Archives, Personal Box 5a, 10.

Mount Everest. I do not know whether I should learn to operate the machine (it would take at least two years) or whether I should have an assistant come here from Germany. That would cost a lot of money. And what if the whole thing is a flop?⁹⁴

Despite any misgivings, Reich began to search for a German physiologist who would help him carry out his work. He requested that Liebeck, “try to find an unemployed electrophysiologist who is fully acquainted with the oscillograph and knows about the physiology of the skin and the vegetative nervous system.”⁹⁵ This was omniscient, as Nördbo indeed resigned a few weeks after the oscillograph arrived. According to Reich, “The apparatus has stirred up the public here, and as a result the physiologist got scared.”⁹⁶ It is not clear exactly what the commotion was about, but Reich was even concerned someone might attempt to vandalize the instrument in the disturbance.

Collaboration: Success and Failure

Reich was a notoriously difficult person to get along with. By the time he made it to Oslo he had alienated a number of his old friends and colleagues. Reich was invited by Harald Schjelderup, an early Norwegian exponent of Freud who, in 1928, had his Chair transferred from philosophy to psychology,⁹⁷ to lecture at the University of Oslo, where he attracted a new group of Scandinavian followers, most of whom remained loyal to

⁹⁴ Reich, *Beyond Psychology*, 39-40.

⁹⁵ Reich, *Beyond Psychology*, 214.

⁹⁶ Reich, *Beyond Psychology*, 42.

⁹⁷ Randolph Alnoes, “The Development of Psychoanalysis in Norway: An Historical Overview,” *Scandinavian Psychoanalytic Review* 3 (1980): 58.

Reich even after he moved to the United States.⁹⁸ Some members of this group, like Nic and Sigurd Hoel, participated as subjects in Reich's experiment.⁹⁹ But, when it came to conducting the experiments Reich's assistance came primarily from other places.

Following characteristic eight of the individual inventor, he sought assistants that knew as little as possible about the larger theories behind the experiments, feeling that they could not grasp the complexities of his thought. This caused significant problems, and Reich was generally unsuccessful in forming positive relationships with his lab assistants. The two physiologists that he hired, Hans Löwenbach and Wilhelm Hoffman, would quickly come into disagreement with him.

Lotte Liebeck helped Reich secure the services of Hans Löwenbach, who had worked with M.H. Fischer in electroencephalography research. A native of Dusseldorf, Löwenbach had left his position at the Kaiser Wilhelm Institute for Brain Research in 1934 during one of Hitler's purges. He had only one Jewish grandparent, but fled the country primarily on ethical grounds.¹⁰⁰ On 15 April Reich wrote to him requesting help:

I am conducting experiments with an oscillograph that was made in Denmark (four-tube amplifier), the purpose of which is to obtain information on surface potentials. . . . The subject matter is essentially new and presupposes certain theoretical assumptions that differ from the usual

⁹⁸ The Norwegian scholar Havard Friss Nilsen has gone so far as to argue that we should see the bioelectrical experiments less as connected to his communist activities, and more related to the interests of Schjelderup, who "wished to see psychoanalysis supported empirically, hoping to integrate it into mainstream academic psychology." See Philip W. Bennett, "Wilhelm Reich, the FBI, and the Norwegian Communist Party: The Consequences of an Unsubstantiated Rumor." *Psychoanalysis and History* 16 (2014): 99.

⁹⁹ Strick details the type of subjects used in Reich's experiment: "Volunteer subjects . . . included numerous associates and students of his. Willy Brandt, in exile at the time in Norway, knew most of Reich's supporters like Sigurd Hoel, Arnulf Overland, and Christian August Lange through socialist and social Democratic circles. His wife at the time, Gertrud Gaasland, was Reich's secretary, and Brandt was a subject in the bioelectrical experiments." *Wilhelm Reich Biologist*, 65.

¹⁰⁰ Berton Roueché, "A Reporter at Large: Zweckwissenschaft," *New Yorker*, August 9, 1947, 48. Löwenbach left Norway by becoming a doctor on a whaling ship, arriving in the US in 1938.

ones. . . . I do not think that you can really penetrate the subject matter. You can live comfortably in a guesthouse for about 130-150 kroner per month. . . . Unless you change your mind, I will expect you here on 2 May. The work will be performed either in the Psychological or in the Physiological Institute, as required. If possible, I may even set up a small laboratory.¹⁰¹

Although Reich mentions conducting the experiments at the University of Oslo, it is unclear where the majority of experiments took place. One scholar of psychoanalysis in Norway notes, “Reich carried out experiments in private apartments in Oslo.”¹⁰² However, in a timeline prepared by Kevin Hinchey (co-director of the Wilhelm Reich Infant Trust) for an upcoming documentary film on Reich, it is stated that the experiments took place at the Psychological Institute at the University of Oslo. Nevertheless, it does seem that some of the experimental trials and demonstrations took place in informal settings, perhaps due to the controversy that Reich recorded upon the arrival of his device and the loss of support from Nordbø.¹⁰³ The device was reported as being located at the University in April of 1937, well after the published trials had concluded.¹⁰⁴ A 1938 letter records the device at Reich’s apartment at Drammensvein 110H.¹⁰⁵

¹⁰¹ Reich, *Beyond Psychology*, 45-46. It is not clear why he says that he oscillography was made in Denmark, as the correspondence about the device is carried out with Peter Petersen of Lund.

¹⁰² Alnoes, “The Development of Psychoanalysis in Norway,” 75. Strick does not address this issue.

¹⁰³ This was not uncommon at the time, or even for today. For a modern take on the difficulty of conducting fundable work on bioelectricity, see: Robert O. Becker and Gary Selden, *The Body Electric: Electromagnetism and the Foundation of Life* (New York: Quill, 1985).

¹⁰⁴ Wilhelm Reich Archives, Correspondence Box 7, Letter from Schjelderup to Petersen, 7 April 1937.

¹⁰⁵ Wilhelm Reich Archives, Orgone Institute Box 6, no 6, Letter from Reich to Siemens Norsk, May 10, 1938.

There are no negative connotations to be found regarding whether the experiments took place in a formal or domestic setting.¹⁰⁶ Indeed, laboratory life for electrophysiologists was quite informal at this time, with most investigators simply building their own equipment in an empty room.¹⁰⁷ Reich's set up was undoubtedly sufficient, especially when we consider the fact that Reich employed a faradic cage during his experiments. The device is listed in a December 1936 inventory of essential equipment as: "1 Faraday cage for containing electric waves from the examination room [*Untersuchungsraum*] for fine measurements of biological electricity, valued at about 500 Norwegian Kroner."¹⁰⁸ Reich would ultimately establish his own Institute for Sex-Economic Research, a private laboratory in his home equipped with microscopes, time-

¹⁰⁶ The lack of a proper lab is not necessarily something that counts against taking Reich seriously as a scientist. Not only was this pretty standard for those working in the relatively new field of electrophysiology, and in fact it carried on a long tradition of physiological experimentation: "Most eighteenth-century experimental philosophers and naturalists who studied the mechanical movement of bodies, the effects of heat, magnetism, and electricity, or the circulation of the blood, respiration, and other physiological phenomena performed their experimental trials in any suitable room—and that room would be used for many other purposes as well." Ursula Klein, "The Laboratory Challenge: Some Revisions of the Standard View of Early Modern Experimentation," *Isis* 99.4 (2008): 772. Similarly, Claude Bernard, whom Reich cites in his published experimental results in order to draw attention both to his appreciation of this great figure, sometimes called the father of experimental physiology, and also to the similarities in thought and in pioneering efforts. Bernard, as is famously known, conducted the majority of his experiments at his own home or in the borrowed laboratory space of friends. See Atia Sattar, "The Aesthetics of Laboratory Inscription: Claude Bernard's Cahier Rouge," *Isis* 104.1 (2013): 66. Even Wilhelm Wundt, often considered to be the father of experimental psychology, started with a lab that was nothing more than an appropriated small lecture space, and William James' lab was located in two rooms in the basement of Harvard's Lawrence Hall. Robert S. Harper, "The First Psychological Laboratory," *Isis* 41.2 (1950): 158-161.

¹⁰⁷ Hodgkin, "Chance and Design in Electrophysiology," 4. For more on the importance of the "laboratory" in legitimating knowledge during this period, see B. Robert Owens, "'Laboratory Talk' in U.S. Sociology, 1890-1930: The Performance of Scientific Legitimacy," *Journal of the History of the Behavioral Sciences* 50 (2014): 302-320. For an ethnographic approach to the construction of facts in the lab, see Bruno Latour and Steve Woolgar, *Laboratory Life: The Construction of Scientific Facts* (Princeton: Princeton University Press, 1986).

¹⁰⁸ Wilhelm Reich Archives, Orgone Institute Box 6, "Laboratory Inventory"

lapse movie cameras, and other high-tech equipment a few weeks after he completed his monograph on his electrical sex research on 20 January 1936.¹⁰⁹

Löwenbach agreed to help Reich and assisted Reich in executing the first round of bioelectrical experiments in May of 1935. It is worth pointing out, again, Reich's unwillingness to engage in collaborative thinking, and the manner in which he protects and maintains sole ownership over his ideas. He dismisses Löwenbach's ability to comprehend the experiment before he has even explained what it is about. Löwenbach is, from the start, positioned as hired help lacking the intelligence or insight that Reich possesses as the lead investigator. Despite the fact that Reich cannot operate the oscillograph without Löwenbach's help, the latter is to be nothing more than a warm body carrying out purely technical duties. Reich does not need him to comprehend the theories the experiment is meant to test; he just needs him to operate machinery. Salary is not even discussed in this proposal; indeed, Reich presents this as a useful opportunity for Löwenbach. The cost of moving and living in Norway is offset by the opportunity for asylum and the privilege of working on what Reich is already framing as an unconventional, potentially subversive experiment.

Sadly, and perhaps inevitably considering the circumstances, Löwenbach did not agree with Reich's interpretation that the experiments were a success. Reich recorded in his diary: "The physiologist keeps mentioning that nothing can be accomplished with electricity nowadays. But it it's also clear what—and how—he is going to steal from me

¹⁰⁹ Wilhelm Reich Archives, Personal Box 5a, 18. Reich's lab equipment only grew throughout his stay in Oslo: he also possessed a pantostat for the electrical treatment of colloidal solutions estimated at the same price, a diathermy apparatus, and presumably his oscillograph was at Dikemark by this time but may have been included in a list of debt for previously purchased equipment (3,000 Norwegian Kroner). Reich also lists in his note about lab equipment the necessity of a laboratory technician appointed on a yearly basis.

some day.” In 1950, Reich added the comment, “How true in 1937.”¹¹⁰ Löwenbach would eventually make a name for himself as a psychiatrist skilled in electrophysiology and electric shock, working in the Department of Neuropsychiatry at the Duke University School of Medicine.¹¹¹ He would be selected by the Technical Industrial Intelligence Division of the United States Department of Commerce to collect and evaluate medical reports from Nazi Germany.¹¹²

At some point, Hoffman joined on as an assistant. The first reference to him in the lab notebooks is from an entry dated 7 October 1935, but Hoffman began working with Reich earlier than this. He and Löwenbach carried out experiments in the summer of 1935 while Reich was abroad lecturing for six weeks.¹¹³ Perhaps Hoffman’s presence was in part meant to temper the strong disagreements between Reich and Löwenbach. By the end of September 1935, well before many of the published electrophotographs were made, Löwenbach and Reich were at complete odds with each other. “Löwenbach is an intrigant,” Reich writes:

Tried to rile up Hoffman with lies. The schemers of this world have it easy. You can only confront them with straightforwardness, but for that you always pay the price. During the electrode experiment with Hoffman, Löwenbach didn’t have a single argument to advance. (1-10 Mv). Hoffman had no impressions of the initial experiments—the “wandering,”

¹¹⁰ Wilhelm Reich Archives, Personal Box 5a, 11.

¹¹¹ “Is a Possum Neurotic?” *Time Magazine* 64.16, October 18, 1954. Also: E.J. Stainbrook and H. Löwenbach, “The Reorientation and Maze Behavior of the Rat after Noise-fight and Electroshock Convulsions,” *Journal of Comparative Psychology* 34.3 (1942): 293-299.; C. Joseph Ross, John B. Hickam, William P. Wilson, Hans Lowenback, “Reflex Venoconstrictor Response to Strong Autonomic Stimulation,” *American Heart Journal* 57.3 (1959): 418-422.

¹¹² Roueché, “A Reporter at Large,” 46-53.

¹¹³ Strick, *Wilhelm Reich: Biologist*, 71.

etc. and so he was taken in by Löwenbach. Löwenbach is the prototype of a fart . . .¹¹⁴

It is clear that Reich could not tolerate dissent among his supporters. This fact was already proven during the fallout with Fenichel, and it would continue to characterize Reich's attitude for the rest of his life. His charismatic personality and the excitement with which he conveyed his theories drew followers wherever he went.¹¹⁵ While it does seem clear that Reich displayed an intolerance for disagreement, Strick highlights how the technical expertise of Reich's lab assistants, who carried out procedures with a faultless, mechanical precision, interfered with their ability to comprehend more practical aspects of the research agenda. For example, they failed to realize how the discomfort a test subject might feel from having glass cups taped over their nipples could interfere with the experimental results.¹¹⁶

There were several points of controversy, including whether or not positivity was demonstrated electrically and whether electrical charges existed in inorganic matter. In spite of these disagreements, Reich felt his experiments were successful. On 24 May 1936, Reich records: "The earth convulses when charged!!! That much is certain!! Galvanometer drops during convulsion— 'orgasm' in inorganic matter—Insane!"¹¹⁷ And

¹¹⁴ Wilhelm Reich Archives, Personal Box 5a, 12.

¹¹⁵ Indeed, Reich was able to effectively oust Fenichel from Oslo by gathering all the young psychoanalysts to his side. According to Russell Jacoby, the Fenichel/Reich group split primarily because Reich was very forceful in having the opposition follow his own ideas, especially his orgasm theory: "For Reich there was only one way to go, and Fenichel declined," *The Repression of Psychoanalysis: Otto Fenichel and the Political Freudians*. (New York: Basic Books, 1983), 86.¹¹⁵

¹¹⁶ Strick, *Wilhelm Reich: Biologist*, 72. I must protest here, however, that as Reich's conviction in the power of orgasm grew, it became a weapon for expelling dissenting students and assistants, and dismissing any negative external reactions. In this way, Reich is closer to a sort of cult figure. Any opinion that seemed to contradict his own could be summed up as the result of incorrect thinking brought on by a poor sex life. There is really no room for logic in this sort of set-up.

¹¹⁷ Wilhelm Reich Archives, Personal Box 5a, 22.

on 6 October, “Only sexuality can produce an electrical charge. *Sexuality equals life*. . . . *We must rescue life!!!*”¹¹⁸ Here again, the elements of the charismatic personality emerge. Reich is no longer a researcher or even an inventor developing tools for revolution. Now, he considers himself privy to a special knowledge that has the power to rescue life. Reich would continue in his belief that he had discovered a sort of esoteric secret that had world saving powers. Any disagreement with his theories became an act of aggression and intolerance.

Reich purposefully circumvented his assistants’ opinions and sought answers that validated his own beliefs from other sources. The deteriorating relationship between Reich and his physiologists is illustrated well in a letter from Hoffman. Like Böhm, it appears that Hoffman was made to participate, or at least pay for membership in Reich’s Sex-pol:

Dikemark 12 February 1936

Dear Dr. Reich,

We have already spoken several times together about what form the electrodes for the skin-conduction tests to be done by me and Löwenbach are most appropriate to those described by you. Attached you will find a report, which we regard as sufficient and correct. It should be taken only as a description about the physical properties of the electrodes. If the electrodes come to be so widely used that you think a write-up appears desirable, then we have nothing against this—in the form proposed by us. I have not received any plating orders for a while. Perhaps it would be faster to go through a plating-company. If you would like to try this yourself, maybe the sketch here could be of use to you, as the simplest tools are required. I am not quite well in arrears with my Sex-pol contribution. Please tell me how much is the full amount and I will send it. On the other hand, I think I will now quit. Over the Christmas holidays, I had time to do a brief overview of the publications, and I see that their contents are actually of little interest to me. Perhaps you have a brown

¹¹⁸ Wilhelm Reich Archives, Personal Box 5a, 28. Emphasis original.

"Eversharp" pen that I left at your place? Do you want to enclose it with the invoice for Sex-Pol?

With best wishes,
Wilhelm Hoffman

[a note is written: erl. ges. kr. 30]¹¹⁹

In spite of their disagreements, Reich allowed Hoffman and Löwenbach to carry out their own series of experiments on resting skin potentials in catatonics at Dikemark Psychiatric Hospital in the summer of 1935.¹²⁰ Work on bioelectrical skin potentials at Dikemark continued for some time, although the chronology is somewhat unclear. The experiments continued under the approval of the hospital's head clinician, with whom Reich was in not infrequent correspondence with.

Rolv Gjessing (1887–1959) was the director of the Dikemark Hospital and a pioneer in biological psychiatry who specialized in catatonia. Gjessing began his career as a medical officer in the arctic North, later publishing his anthropological observations on the Lapp people in monograph form.¹²¹ Using his own funds, later supplemented with a grant from the Rockefeller Foundation, Gjessing transformed the Dikemark Sykehus into one of Norway's premiere centers of psychiatric research. Gjessing learned his research technique from the geophysicist Bjerknes, who taught him to carry out precise daily measurements over long intervals of time.¹²² Through careful metabolic research, Gjessing discovered changes in protein metabolism and nitrogen balance that he

¹¹⁹ Wilhelm Reich Archives, Correspondence Box 9. Translation my own.

¹²⁰ Wilhelm Reich Archives, Correspondence Box 39, Letter from Reich to Löwenbach, July 2, 1935.

¹²¹ "Rolv Gjessing," *The Lancet* 276.7157 (1960): 970.

¹²² H. Frøshaug and N.B. Johannessen, "The Seventieth Birthday of R. Gjessing," *The British Journal of Psychiatry* 104.436 (1958): 822.

correlated with disturbances in the vegetative nervous system. As a result, he began using thyroid stimulating medications to combat psychotic episodes. Insulin and cardiazol shock treatments were used experimentally from 1935–40, and eventually discontinued in favor of occupational therapy.¹²³

Reich would later come to believe in the importance of atmospheric conditions on organic energy regulation, an idea that may have partly been inspired by the suggestion of Böhm, but perhaps further encouraged by Gjessing's observations on the importance of weather on individual metabolism. Gjessing was also one of the first prominent Norwegians to defy the Nazi regime.¹²⁴ In May of 1941, after Reich had left for America, Gjessing was arrested for refusing to appoint a Nazi to the position of chief nurse, but was subsequently released when all of Oslo's chief medical officers threatened resignation.¹²⁵

Gjessing and Reich carried on a cordial correspondence, with the former permitting not only experimentation on his patients but also film to be recorded, as per Reich's request:

21 November 1936

Dear Doctor,

I give myself the liberty once again to ask for your help. We are currently compiling a film on the function of the vegetative apparatus based on clinical materials. In this case the muscular hypertonia of catatonia plays an important, indeed crucial role, because we want to show the flowing transitions of the various degrees of muscular armor. We ask you now to

¹²³ R. Gjessing, "Occupational Therapy at Dikemark," *Occupational Therapy and Rehabilitation* 26.5 (1947): 363-6.

¹²⁴ Joseph Wortis, "Remembering Gjessing: 1887-1959," *Biological Psychiatry* 24 (1988): 2.

¹²⁵ Nils Retterstøl, "A Pioneer of Biological Psychiatry: The Centenary of the Birth of Rolv Gjessing," *Journal of the Oslo City Hospitals* 37.10 (1987): 119.

have the kindness to let us make recordings of the patients at your institution. It is especially important that we can properly film catalytic states, muscular stereotypes, fixed chronic deportments, rigidity, etc. Miss Bergraf is going to undergo the trouble of filming, but I will film it myself if there are any problems that come up. It is necessary to film rigid faces, but this is probably inappropriate when we take the patient into consideration. Perhaps we will be lucky enough to show the freeing of energy in a catatonic rapture. I would be very grateful for a congenial response.

Sincerely Yours,

W.R.¹²⁶

The two men also engaged in an exchange of information, with Reich sending Gjessing print outs of his original bioelectrical trials on 11 December 1936 with the promise of a printed manuscript when it became available, and Gjessing guiding Reich, with caution, to the work of Prof. Langfeld on nitrogen metabolism, as well as to copies of his own publications on the subject.¹²⁷ The filming went on for at least a month, with Reich asking to be allowed to take more footage, hoping for some classical images of catatonic states, on 23 December 1936.¹²⁸ Unfortunately, according to Gjessing, his method of treatment was so successful that it was quite rare to observe textbook catatonia in his institution. He promised to have a Dr. Härne keep Reich abreast if any such case should present itself.¹²⁹

Reich's involvement with Gjessing was not collaborative, although Reich did express an interest in Gjessing's work. Displaying some lack of initiative, he requested

¹²⁶ Wilhelm Reich Archives, Correspondence Box 9. Translation my own.

¹²⁷ See Gjessing to Reich, 1 January 1937. Wilhelm Reich Archives, Correspondence Box 9. Note that Hoffman's letter to Gjessing of 28 May 1936, cited in the introduction, contained a final note that Hoffman found the work Reich was preparing in manuscript form to be "implausible." OI Box 6.

¹²⁸ Correspondence Box 9.

¹²⁹ Correspondence Box 9.

Gjessing, whom Reich always referred to in his correspondence as Jessing, to provide him with copies of his publications.¹³⁰ Gjessing declined and points him to the nearest library. Similarly, one can read a certain air of aloof skepticism in Gjessing's promise about Dr. Härne. Gjessing may have thought that Reich was barking up the wrong tree, but he allowed Reich's work to continue and the two remained in communication for some time. Their relationship may have soured at some point, however, because allegedly Gjessing later provided controversial information about Reich's experiments to outside sources.¹³¹

The Oscillograph

Reich used an oscillograph to record electrical fluctuations in a steady electrical current that has been disrupted by incorporating a human body into the circuit. This had become the standard set-up for psychogalvanic experimentation at this time; a steady current was the most essential aspect of the design.¹³² Changes in current were measured by interruptions in an otherwise steady light beam, "generated by the reflection of light rays on a small mirror attached to the electromagnetically influenced, moving element of the oscillograph."¹³³

¹³⁰ There is a note written on a page of his lab notebook in large, red pencil referring to one of Gjessing's 1932 publications. See OI Box 6.

¹³¹ A fascinating remark is published in a book by journalist Joel Levy: "Another scientist, Wilhelm Hoffman, tried to apply these techniques [Reich's bioelectrical experiments] to schizophrenic patients, and in 1937 the Norwegian media conflated the two men's work, so that Reich found himself accused of experimenting on mental patients having sex." *Freudian Slips: All the Psychology You Need to Know* (London: Michael O'Mara, 2013).

¹³² See Richard Sears, *Psychogalvanic Responses in Arithmetical Work: Effects of Experimental Changes* (New York: Archives of Psychology, 1933), 2.

¹³³ Reich, *Bioelectrical Investigation*, 78.

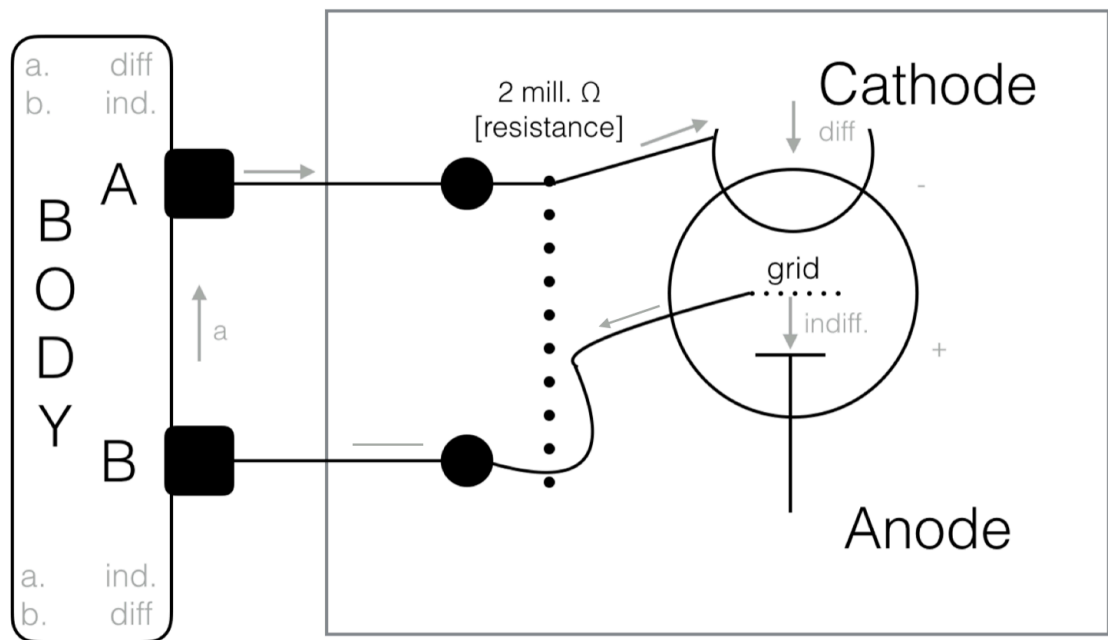


Figure 4.1: Bioelectrical setup. Reprinted from Orgone Institute, Box 6 “Notebook – Versuchs Bioelectrical experiments.” In the original drawing, the arrow returning from the grid to electrode B is smudged as if it got wet, and the second flat line returning to B is drawn thick. The original German has “gitt. [gitter]” for grid.

By means of a heated cathode attached to the negative pole of a battery and a cold anode connected to the positive pole and both contained within an glass amplified tube and connected by a wire mesh grid, an “anode voltage” of positively charged particles and a “cathode voltage” of negatively charged electrons was generated.¹³⁴ According to this set up, “a strong charge at the body surface generates a positive potential and a weak charge a negative potential in the apparatus.”¹³⁵ The subject is hooked up by electrodes to

¹³⁴ This grid has a strong amplifying action, allowing for even very small potentials to register on the oscillograph. This type of instrument was popular with neurophysiologists from 1920 into the 1960s. See: Alan J. McComas, “The Cathode Ray Oscilloscope,” in *Galvani’s Spark: The Story of the Nerve Impulse* (New York: Oxford University Press, 2011), 75-96.

¹³⁵ Reich, *Bioelectrical Investigation*, 78-79.

the anode and cathode, and the more negative the charge produced the weaker the grid voltage becomes. The more positive the charge, the stronger.

The device was developed so that the grid voltage was constant when nothing was connected to it. The zero line was arbitrarily determined. Regarding the interpretation of the fluctuation of light—if a body is hooked up to the machine but there is no deflection it indicates that voltage is the same on both areas of the body. If there is a fluctuation of the light beam, this indicates that there is a potential gradient created by the different charges of the skin. If this potential is negative the beam moves to the left, if it is positive the beam moves to the right. This is correlated with a decrease or increase of bioelectric charge, respectively. In regards to whether polarization of the metallic electrodes themselves is responsible for deviations in the light beam, Reich claims, “a resistance of approximately two million ohms between body and tube [containing anode and cathode] was built into our device, so that practically no current flowed; only the voltage itself was indicated. . . . The current strength, which may be transmitted from the body to the apparatus, amounts to only about 10-6 milliampere, according to information from the manufacturer of the apparatus.”¹³⁶

Reich worked with a Swedish instrument manufacture to develop his own device to measure and record the psychogalvanic skin response.¹³⁷ The apparatus was created by one Peter Petersen, of Lund. Petersen was a licensed manufacturer of university

¹³⁶ Reich, *Bioelectrical Investigation*, 81.

¹³⁷ For more on the importance of instruments in scientific research, see Adela E. Clarke and Joan H. Fujimura, *The Right Tools for the Job: At Work in Twentieth-century Life Sciences* (Princeton: Princeton University Press, 2014). For more on graphic recording instruments specifically, see Robert Brain, “Representation on the Line: Graphic Recording Instruments and Scientific Modernism,” in *From Energy to Information: Representation in Science and Technology, Art and Literature*, ed. Bruce Clark and Linda Henderson (Stanford: Stanford University Press, 2002).

instruments. While he often communicates directly with Reich in German, he also sent several letters in Norwegian addressed to Tage Philipsson.¹³⁸ Petersen would become another important collaborator for Reich's experiments. In a correspondence dated 24 June 1935, Reich urges Petersen to hurry and send the apparatus, presumably being held for repairs, to Dikemark as soon as possible. "When you were here about 4 weeks ago you promised to send it within 8–10 days. All work has suddenly been stopped. Dr. Löwenbach is waiting in Dikemark on the shipment, and cannot do anything. The whole thing takes time and money, which could be spared by a timely delivery."¹³⁹ It appears Reich was having financial problems at this time, and his inability to send full payment for the apparatus may have been part of the delay.¹⁴⁰ Perhaps Reich subsequently removed his oscillograph from Dikemark around October of 1935, because from then on his correspondences with Petersen seem to imply he himself is conducting experiments using the device, however, letters from Hoffman at Dikemark arrive as late as February 1936.

Whatever the case, the oscillograph continued to break down. Reich began to involve Petersen not only in constant repairs of the apparatus, but also in helping him make sense of his disagreements with Hoffman and Löwenbach. In a letter dated 12 December 1935, Reich inquires:

I must ask you for urgent information. The anode voltage is virtually eliminated in the apparatus, if I understand it correctly, and not affiliated

¹³⁸ See Wilhelm Reich Archives, Orgone Institute Box 6, part 1.

¹³⁹ Wilhelm Reich Archives, Correspondence Box 39. Translation my own.

¹⁴⁰ Reich had also gotten into some problems with a book-seller in November of that year for not making full payment. See Wilhelm Reich Archives, Correspondence Box 8. Customs seems to have been a problem, as well as exchange rates. When dealing with Petersen, Reich sent payments in the form of Norwegian and Danish kroner, which Petersen had to exchange into Swiss kroner.

with the zero point. The body surely corresponds to the grid voltage. Is that so? If that is true, then I ask you to write me, if, when measuring the absolute potential of an area of skin with the differential electrode, the indifferent electrode is that which is placed on an area of scratched skin and applied to the grid voltage through connection with a cathode. In other words: does it disturb the organic body voltage, the grid voltage, or the current before it leaves the cathode? For I have found, namely by trying various electrodes and connections to the apparatus, very diverse findings, which I would like to accurately record. Once again, there are the following possibilities:

- a) physical zero point at grid voltage, differential electrodes of the areas of the skin to be measured at the cathode of the apparatus.
- b) indifferent zero points of the body at the cathode of the apparatus, differential electrode of the body voltage to be measured at the grid.

Also in this case the direction of the deflections changes. Further, how should I explain the phenomenon that, when the right and left index fingers are each attached, unabridged, to the grid and cathode, the EKG reading is facing upward (positive). However, when the fingers are reversed, that is the left forefinger is on the grid and the right is applied to the cathode, the EKG wave reads down (negative).

The experiments are so far advanced that I penetrated into the smallest details and there is no one who could clarify for me. I would be very grateful if you did.¹⁴¹

Reich also reached out to the Swiss sociologist Emil Walter for help understanding his oscillograph. Walter sent him a letter on 1 August 1936, suggesting how the device might be made to display the direction of the observed current. He suggested the use of so-called weak “normal elements.” Walter also suggests that Reich might benefit from knowing about a 1929 experiment using lead electrodes made from pure silver attached to an oscillograph made by Siemens. The experimenter was able to observe reactions to various emotional stimuli with this set-up.¹⁴²

¹⁴¹ Wilhelm Reich Archives, Correspondence Box 7, Folder 1. Translation my own.

¹⁴² Wilhelm Reich Archives, Correspondence Box 8.

After another summer vacation, Reich returned to the oscillograph in early September 1936. He finds that it is no longer working—both the amplifier and the oscilloscope seem defective, and once again the mirror has fallen off. Petersen promises a quick fix with new batteries, but the device does not come back until mid-October, accompanied by an extra anode battery and a diagram of the amplifier to assist Reich in his future endeavors.¹⁴³ By April of the following year the device needed repair again—this time correspondence was carried out by Schjelderup, and request was made for the apparatus to be returned with a repaired amplifier to the Psychological Institute at the University of Oslo.¹⁴⁴ At this time, Schjelderup was carrying out his own experiments with the machine. Reich had largely moved into his work on bions and working with different devices. He appears to have attempted to place an order to a new apparatus for measuring skin potentials through Siemens Norsk in March 1938, perhaps fed-up with Petersen in Lund.¹⁴⁵ Although Petersen made modifications and found the device to be working fine in July, problems with the amplifier continued throughout the summer of 1938, despite new circuits and attempts to use different batteries (Ludowit anode batteries). The final recorded correspondence about the device comes from 7 October 1938, when Reich notes that Petersen “will be surprised that the amplifier *once again* needs repair.” Opening the apparatus, Reich found a broken resister and hired a main to

¹⁴³ Wilhelm Reich Archives, Correspondence Box 7, Letter from Petersen to Reich, October 13, 1936.

¹⁴⁴ Wilhelm Reich Archives, Correspondence Box 7, Letter from Schjelderup to Petersen, April 7, 1937. In February, it was reported back that the problem seemed to be the batteries once again. It was recommended that all the batteries be replaced with Hellen batteries, as other batteries will not function correctly. He notes that no DC amplifier will be stable if it is not operated on a daily basis. Ibid., Letter from Petersen to Reich, February 17, 1937. Unfortunately, even by March 24th, the problem does not appear to have been resolved according to these instructions.

¹⁴⁵ Wilhelm Reich Archives, Orgone Institute Box 6, no 6, Letter from Reich to Siemens Norsk, May 10, 1938.

repair it, but efforts were fruitless. He requests special care be taken that the device is not damaged during transportation, as “the apparatus is needed now for extremely urgent clinical trials.”¹⁴⁶

Petersen and Reich seem to have maintained the best relationship among all of Reich’s collaborators on the bioelectrical experiments. Petersen was cordial and always friendly in his many communications with Reich. Financial disagreements arose, but Petersen handled them with tact and generally seemed best able to handle Reich’s rather abrasive personality. Perhaps because Reich depended on him so, the relationship progressed more satisfactorily than others. The oscillograph was constantly breaking down, and Reich relied on Petersen not only to fix it for a fair price, but also to answer questions about the instrument’s operation. These questions were often subversive, typically meant to circumvent the opinion of his assisting physiologists and prove them wrong. Nevertheless, when Reich came under fire from Norwegian authorities, Petersen stepped back and refused to involve himself in the affair, despite Reich’s requests.

Experimental Results

The first experiment took place on 13 May 1935. The initial round of experiments was conducted with friends who volunteered to be test subjects. Reich notes that the first round of experiments produced results that “were initially just confusing.”¹⁴⁷ Measurements were first taken on the upper arm, although the direction of the recording had not been yet been registered. This would later lead to a series of misunderstandings.

¹⁴⁶ Wilhelm Reich Archives, Correspondence Box 7. Italics original. Translation my own.

¹⁴⁷ Wilhelm Reich Archives, Orgone Institute Box 6, “Note – Bioelectrical.”

The nipple was also measured, and the penis was compared to the inside of a lip and to the tongue. Lastly, the armpit was measured and reported to exhibit a larger electrical charge than the upper arm, although these graphs were not published.

Disagreement broke out as to how to interpret the fact that the deflections of the oscillograph produced by fluctuations in skin potential were so major when compared to the electrical cardiac action curves.¹⁴⁸ The readings also jumped around unexpectedly. Löwenbach appropriately recommended the use of unpolarizable electrodes.¹⁴⁹ A switch was made to potassium chloride (KCl) electrodes, and these were used from then out with few exceptions. Strick notes: “For indirect measurements, silver electrodes were used. For direct measurements, nonpolarizable electrodes filled with .01 N KCl solution were used. Later 0.9 percent NaCl solution was substituted when measurements were made on a mucosal surface” in order to avoid irritation.¹⁵⁰

Later, Reich would note in a correspondence to Siemens Norsk on 3 March 1938 that the standard method he used was to have a subject insert a finger from the left hand into a glass jar with KCl solution. An electrode was hooked up to the solution and to the cathode tube and it represented the *indifferent electrode* (emphasis original). Another electrode was placed on the site of the body to be measured and connected to the grid.

¹⁴⁸ Further investigation by a specialist might shed light on this issue, as well as the interpretation of Reich’s tickling experiments with cloth. See Hans Christian Orsted, “On an Apparent Paradoxical Galvanic Experiment,” in *Selected Scientific Works*, ed. Karen Jelved, Andrew D. Jackson, and Ole Knudson (Princeton: Princeton University Press, 1998), 478–480.

¹⁴⁹ Polarizable electrodes render the experimental results in such tests essentially useless.

¹⁵⁰ Strick, *Wilhelm Reich: Biologist*, 69.

Changes in the grid voltage would reflect the potential in relation to the fixed anode voltage.¹⁵¹

A second round of trials was carried out with KCl electrodes. A site on the skin of the sternum area was abraded and a rubber ring of 2 cm diameter was attached with a celluloid solution and filled with n/1 KCl solution. An Ostwald quicksilver KCl-electrode was suspended in the solution. The differential electrode was a modified Ostwald electrode with a soft rubber hose at the end. Movement of the oscillograph was only roughly observed. Fluctuations were smallest on the forearm, and twice as large in the armpit. The shaft of the penis showed even greater fluctuations, and these were largest at the glans. The subject was, however, unable to imagine a sexual or pleasurable scene under the experimental conditions. The penis eventually shrunk, and the experimenter inquired if the subject was cold.

Trials were repeated on 15 May with the oscillograph recordings printed on an accurate millimeter scale. Measurements were taken at multiple points over the entire body, but the results were even more confusing. While some parts of the body demonstrated a rather steady resting potential, others fluctuated wildly. This was especially concerning when measuring the forehead, readings suddenly jumping 40 mV to the right and then left of the zero point. Reich would come to interpret this as meaning that the forehead was an erogenous zone, to Hoffman's later chagrin.¹⁵²

¹⁵¹ OI Box 6, Letter from Wilhlem Reich to Siemens Norsk, 3 March 1938. Determining the best type of electrodes to use was an important aspect of the experiment and a frequent problem. It crops up several times in Reich's lab notebook, and there was a trial carried out on November 26, 1935 specifically to determine the source of sensitivity differences between silver electrodes and KCl electrodes.

¹⁵² For more on the controversial connection between intelligence and sex, see Peter Hegarty, *Gentlemen's Disagreement: Alfred Kinsey, Lewis Terman, and the Sexual Politics of Smart Men* (Chicago: University of Chicago Press, 2013).

On 23 May the experimental set-up was changed so that the subject was placed in a separate room from the oscillograph. (In his notes for this experiment, Reich would remark clitoris=penis.) Only five days later, on 27 May, barely three weeks after Löwenbach's arrival, Reich declared in his diary: "The experiments were completely successful—the electrical nature of sexuality has been proved!"¹⁵³ His lab notebook records this date as the occurrence of the second investigation with silver electrodes. The results were obtained with remarkable speed, especially considering Reich had initially anticipated it would take Löwenbach about four weeks just to orient himself. Another trial was carried out on June 3rd with KCl electrodes, and by 13 June Reich had arrived at the following:

Facts, conclusions:

1. The surface of the skin possesses a potential that is significantly larger than the EKG.
 2. The range of diversity in the skin potential is very large. Erogenous zone potential larger than nonerogenous. Genital zone potential larger than nongenital.
 3. There is obviously a *resting potential* (RP) that must fluctuate within certain limits in one and the same person.
 4. The change in resting potential that is caused by nonerogenous stimuli (pressure, irritation) is minimal compared with the magnitude of the deflection.
 5. Simple pressure does not change the potential.
 6. The potential goes on increasing slowly when a tickling/itching sensation is experienced (*preorgastic potential*).¹⁵⁴
- An observer can recognize from the apparatus whether a tickling sensation is experienced or not.
7. Sexual sensation obviously builds up *above* the RP as an *increase* in excitation in contrast to pressure or shock.

Further problems:

¹⁵³ Reich, *Beyond Psychology*, 47.

¹⁵⁴ It is worth noting that the concept of pre-orgastic potential was transformed into PoP. Another example of Reich's manipulation of words and his use of abbreviations to single out his discoveries

1. There must be a difference between the electrical charge that corresponds to all friction (mechanical process) and the electrical charge that signifies *biological excitation*.
2. For orgasmic excitation the apparatus will first have to be modified—*sooo much*.
3. Main point: Passive stasis _____
Vegetative excitation = life
4. How can psychic inhibition be eliminated during erection tests? (Let the subject himself do the test!!!)
5. Attachable electrode for remote testing – female physician – female test subject.¹⁵⁵

Further trials were carried out in winter of 1935, beginning in September, and published with the experimental results. Each published trial reproduced by electrophotographs is explained briefly below:

Electrophoto 1: Shows the resting potential of the skin of a female hysteric (one of Reich's patients). The photo establishes, for Reich, the resting potential of undamaged skin at the surface of an organism has a steady electrical charge that rarely fluctuates. Dated 25 October 1935.

Electrophoto 2 (fig. 4.2, below): The wandering potential of a semi-erect penis. This recording proves several things: erogenous zones on the body, which includes the genitals, anus, nipples, but also the tongue, lips, earlobes and forehead ("in some intellectually oriented subjects"), have a higher resting potential than the rest of the body.¹⁵⁶ Since the penis was made semi-erect through manual squeezing at the base of the shaft in order to retain blood, the simple wandering of the potential proves that

¹⁵⁵ Reich, *Beyond Psychology*, 47-48.

¹⁵⁶ Reich, *Bioelectrical Investigation*, 83.

psychic sensation is necessary to provide bioelectrical charge. The two drastic drops in potential are from when the electrodes were pressed on the penis.

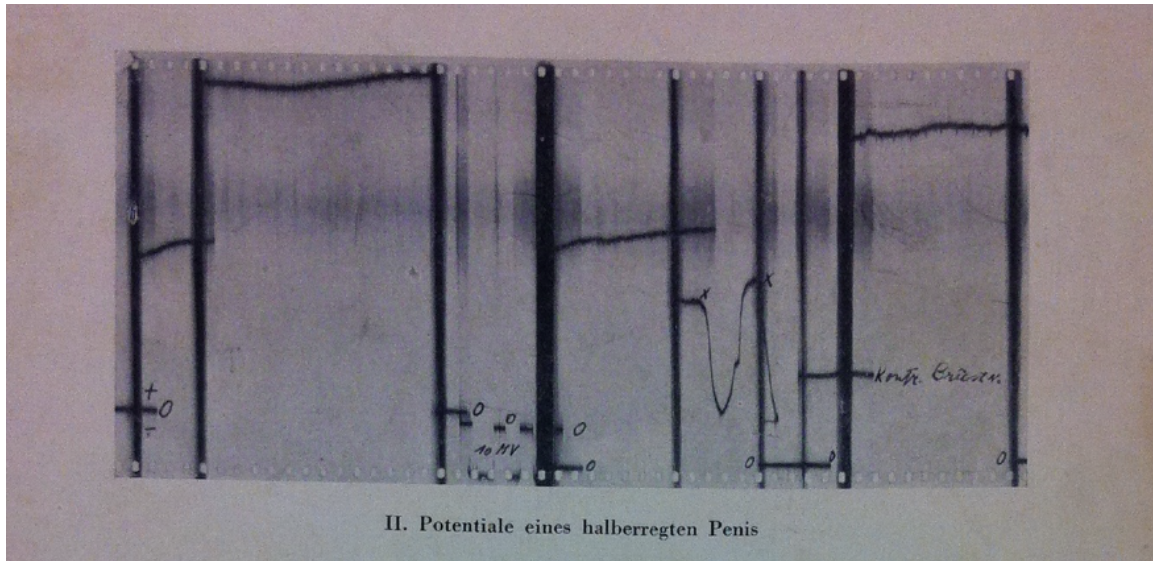


Figure 4.2: The wandering potential of a semi-erect penis. From the Wilhelm Reich Archives, reprinted in *The Bioelectrical Investigation* with an English caption.

Electrophotos 3 and 4: A subject, likely the same female hysteric from electrophoto 1, has her left palm hooked up to the electrode on different days. Both times an upward wandering of potential is observed, but on the second trial she was in a more cheerful mood and the increase in potential is much sharper.

Electrophotos 5 and 6: Repeat the experiment above but with a KCl electrode being touched to the anal mucous membrane of a female subject. In one trial she was happy and there is a significant jump in charge, but on another day she was experiencing premenstrual depression and the charge remains low and almost steady.

Electrophotos 7–14: Tickling phenomenon. Measurements were taken of the electrical potential during tickling with cotton wool or a feather. During these experiments, Reich relied on self-reporting by the experimental subject. “A control person observed the apparatus, while the subject is in a neighboring room, is connected to it with long wires. The subject, who must be skilled in self-observation, announces whether the light beam is steady, moving, or indicating a rise and fall in potential, etc. . . . The more correctly the subject is able to observe himself and the more gentle the tickling . . . the more precise is the result.”¹⁵⁷

Electrophoto 15: Using the hysterical female subject once again, this measurement was taken on the same day of premenstrual depression as electrophoto 6. The photo, marked “Unlust Vagina,” shows a decreasing wandering potential as the subject applied KCl electrodes to her labia majora. She was seated in a separate room than the measuring apparatus, and was connected by long wires. The first X marks a steep drop in potential when she spilled KCl solution on herself, and the second X marks a period of strong annoyance. For Reich, these measurements showed, “that sexual excitability decreases so markedly when a person is annoyed because the electrical excitation of the body moves in the *opposite* direction to that of sexual excitation; i.e., *the periphery becomes discharged instead of charged*.”¹⁵⁸ Reich’s supporters have lauded him for recognizing so early the different action of the autonomic nervous system during positive and negative

¹⁵⁷ Reich, *Bioelectrical Investigation*, 92.

¹⁵⁸ Reich, *Bioelectrical Investigation*, 97. Emphasis original.

emotional states, however, similar observations were made, and noted by Reich, in the published experiments of Bernfeld and Feitelberg.¹⁵⁹

Electrophoto 16: Further experiments on the role of emotions and their effect on electrical charge. Tickling of the tongue shows a gradual increase in charge with tickling, and then a sharp decline with a sudden fright.

Electrophotos 17–20: This series was intended to validate Reich’s feelings that monogamy is impossible because of habituation. Using sugar and salt applied to the tongue, Reich shows how the organism retreats from unpleasant stimuli and responds positively to favorable stimuli, but quickly becomes accustomed to the sensation and displays a weaker and weaker response.

Electrophotos 21–30: These represent the actual attempts to measure sexual arousal during the act: masturbation, kissing, touching, naked embrace, etc. Reich encountered serious difficulty in measuring actual coitus for several reasons. On technical grounds, he simply did not have the proper equipment that could remain attached to the subjects during lovemaking. On more subjective grounds, he discovered that his subjects had trouble becoming properly aroused in the sterile laboratory setting. The measurement of male masturbation (photo 21), which likely took place in Reich’s apartment on October 7

¹⁵⁹ Reich underlined a passage that reads: “Unpleasurable conscious feelings occur when the propagation intensity of the central apparatus is hampered by the transport of cellular energy to the central apparatus.” Siegfried Bernfeld and Sergei Feitelberg, *Energie und Trieb: Psychoanalytische Studien zur Psychophysiologie* (Vienna: Internationaler Psychoanalytischer Verlag: 1930), 92. Information obtained from the Personal Library at the Wilhelm Reich Museum.

and was witnessed by Schjelderup, Löwenbach, and Hoffman, and of a naked man kissing the breast of a naked woman (photo 30) are the closest Reich came to measuring arousal during the sexual act.

Electrophotos 31 and 32: Control experiments conducted with non-organic matter in order to prove that the tension-charge phenomenon is unique to living organisms. The results led to strong disagreement between Reich and his physiological assistants. The first photo shows no reaction from a towel soaked in KCl solution. The second photo shows the results of rubbing electrodes on the surface of a metal flashlight. Strick discusses these experiments as follows: “one could get potential to vary, up or down, but the changes were not rhythmical; in only one case did the changes ever have the rhythm of organic wandering that was shown by living skin. . . . [Electrodes were connected to a cloth soaked in solution,] if one rubbed or pressed the wet cloth with a finger ‘the typical wanderings, etc. appear at once.’”¹⁶⁰

Many of the electrophotographs do not contain dates, and there are few notes written on them. The dates that are available include 14 October 1935 (5), 17 October (9, 10, 31), 19 October (6, 15), 21 October (7) 25 October (1, 2), 29 October (32), 1 December (27, 28, 30), 7 December (26), 15 December (17, 18, 25). The following photos are undated: 8, 13, 14, 16, 19, 20, 21, 22, 23, 24, 26, 29.

¹⁶⁰ Strick, *Wilhelm Reich: Biologist*, 69.

Lab Notebooks

Lab notebooks comprise a place where historians look to discover “the messy, oft-repeated, and frequently unsatisfying transactions that constitute scientific inquiry.”¹⁶¹

Reich’s notes for the bioelectrical experiments are certainly messy. There remains a single composition notebook, among multiple notebooks dealing with the later bion experiments, marked “December 1934, Experiments: a) orgasmic potential, b) charge tension process of organs, c) radiation.” A later binding reads “Archives R-No. 8004, Orgone Institute AT. OR-LO6 No. 4.” The lab notebook contains dated entries, random thoughts and collected reflections. There are also experimental trials (e.g., 14 November 1935) and notes made on loose sheets of paper and tucked into the notebook.

Reich’s notebook is divided into two sections, the first section deals with experimental series 1 and the second with series 2. The notebook begins with an overview of electromotive force and typed loose notes on the psychogalvanic skin response taken from various sources. Also included are typed instructions on how to operate various components of the recording device created by Petersen. There is a page titled “String Galvanometer” that is blank. Dated entries begin on 13 May 1935 and continue to 22 March 1936. According to the notebooks, the first series of experimental trials ended in February 1936. The last entry for this set of trials is the 14 December trials measuring reactions to salt and sugar, and the first entry in the next series is on 20 February 1936, with experiment trails resuming in March. Reich had begun to experiment with using a radio to make aural measurements, and there is one entry that consists of

¹⁶¹ Sattar, “The Aesthetics of Laboratory Inscription,” 64. For more on the historical use of lab notebooks, see Frederic L. Holmes, Jürgen Renn, and Hans-Jörg Rheinberger, eds., *Reworking the Bench: Research Notebooks in the History of Science* (Boston: Kluwer, 2003).

several pages written in a different hand. The entry is dated 2 March 1936 and is titled “*Komplette Kontrolle*.” It deals with the problem of the tickling phenomenon observed on cloth and whether the lines produced were the effects of electromagnetic force or radiation. Cloth experiments were also carried out with the radio, and sound was produced.

The style of the notes is extremely casual. Reich makes comments to himself in the notebooks in larger hand. He asks questions like, “Who is crazy? The world or I? [*Wer ist verrückt? Welt oder ich?*]” or exclaims to himself, “Yes!! It must be possible to use technology to investigate coitus.”¹⁶² Most dated entries contain a description of the current hypothesis or issues with the experimental design, followed by notes on oscillograph readings and problems encountered. Often, Reich remarks on further problems illuminated by the day’s experimental results. The notebooks display a certain impatience. Reich comes to conclusions quickly. The electrophotographs provide more comprehensible data than the many hastily scrawled notes on recordings produced by the oscillography. The photographs themselves are loosely collected with dates and comments scribbled in a scrawled hand on the actual photograph.

A typical entry, like the one from 24 November 1935, had several points listed under the heading “Results,” including, notes on isolating contact points to ensure fingertips have approximately the same potential (this is listed as a step towards ultimately being able to measure coitus); a note that friction is positive when gentle and negative when violent; a remark on the application of pressure registering as negative; continued discussion about EKG; and notes on the tickling phenomenon. This is followed

¹⁶² Orgone Institute Box 6

by “Theoretical Results” and comments new problems that have arisen. This entry concludes with excitement that it may be technically possible to measure coitus. Indeed, this seems to be the ultimate goal of the bioelectrical experiments, and if we interpret them as experiments meant to help Reich invent a protocol for measuring bioelectrical potentials during coitus, we see Reich progressing in a logical fashion by using each experimental trial in an effort to refine his method and come closer to measuring coitus in the laboratory.

The data collected in each entry in Reich’s notebook is far from uniform. Reich may make a note about the protocol being followed, particularly whether silver or KCl electrodes are being used, and notes on electrical measurements are often included although they are not standardized and often simply an expression of voltage fluctuation (e.g., $-15 \rightarrow -25$ mV). Subjects are alluded to as numbered V.P.s (“Versuchsperson”). There are remarks about Löwenbach, as well as attempts to work through some of the major issues that would plague the experiments, including the role of the indifferent electrode. Interspersed are comments, likely pertaining to the difficulties Reich was having with his assistants, about the correctness of his theory about the antithesis between sex and anxiety.

There are several ways to explain the informality of these notebooks. Reich was not necessarily a sloppy or “bad” scientist. While his handwriting leaves much to be desired, it is possible to gather enough information from his notebooks to mentally recreate the experiments and to understand the thought process motivating their development. If the experiments were meant to be demonstrative, there would be little need for gathering large masses of raw data. Indeed, this was not the mode Reich was

practicing in. Again, he is quickly falling behind times—by the time Kinsey would conduct his own studies on sexuality in the 1940s, statistics and large data pools were quickly becoming an established norm in psychological research.¹⁶³ Reich, however, operating in an inventor's paradigm, sought only to perfect a single experiment that he believed would prove the existence of the so-called Vagus-Sex-Function. Since he was working with live bodies, perhaps he thought of his work as a sort of “electro-vivisection.” Reich needed people to see sexual energy at work. This is why he hosted public demonstrations and allowed others, like Schjelderup, to use his oscillograph.¹⁶⁴

Much of the comments in the lab notebooks are related to troubleshooting the oscillograph and perfecting the electrodes. Protocol for the silver-plating of electrodes, likely written up by Hoffman or Löwenbach, is preserved in the archives as follows:

Directions for Silver-plating (*Forsölvningsvaeske*)

1. Silver nitrate 3g in 50cc water
2. Potassium cyanide 3g in 50cc water and filtered

Mix 1 and 2. Allow the generated sediment to remain in the flask. The electrode should be submerged for a few minutes in concentrated nitric acid before plating. Do not forget!

The silver electrode is the negative pole, and a platinum electrode (or a chemically pure silver electrode) is used as a positive. For usual silvering an appropriate amperage of 8 MA/cm² is given. Our small electrodes have a surface area (when calculated as a cylinder) of approximately $2 \pi r l = \pi 0.6 \times 20 \text{ mm}^2 = 36 \text{ mm}^2$. This requires 2.5 to 3 MA per electrode.

My experience, however, is that 1 to 0.5 MA is the best.

¹⁶³ See: Donna J. Drucker, *The Classification of Sex: Alfred Kinsey and the Organization of Knowledge* (Pittsburgh: University of Pittsburgh Press, 2014).

¹⁶⁴ Wilhelm Reich Archives, Correspondence Box 7. By this time, Schjelderup was already distancing himself from Reich. “Schjelderup . . . had a high opinion of character analysis but was critical of Reich’s theoretical and experimental work. Adopting an independent position both in relation to Reich and the IPA, he developed a rather unique relational perspective in the thirties, criticizing both Freud and Reich for overestimating the role of the sexual drive,” Sletvold, “‘The Reading of Emotional Expression,’” 456.

If several electrodes are silver plated, it is best to use them at the same time for a correspondingly greater power.

Duration: Overnight. A layer of a few tenths of a millimeter needs to have formed.

Subsequent Chlorination:

As a solution, 1 normal or 3% hydrochloric acid per annum amperage and 0.5-1 MA per electrode, duration 1-1.5 hour. The current of the positive pole of the electrode will meander every 10 minutes or quarter of an hour for 2-3 minutes. It will stop acting as the positive pole.

Hours of leaching in distilled water are required for chlorinization.
*Do not forget!*¹⁶⁵

In this sense, Reich is clearly developing an experimental method. He ultimately sought to devise a means by which the psychogalvanic skin response could be measured during the sexual act itself.¹⁶⁶ Unfortunately, he was not successful in these endeavors, despite the hopefulness displayed in some of the entries in his notebook. Later, William Masters and Virginia Johnson would perfect techniques for measuring arousal during coitus, but technological limitations only allowed Reich to measure sexual arousal during more benign states like kissing and a naked embrace.¹⁶⁷ Since Reich was ultimately concerned with arriving at his goal of measuring live sex, it makes sense that his notebooks would display an impatient, hurried character. Reich was taking what he

¹⁶⁵ Orgone Institue, Box 6. Emphasis original. Translation my own.

¹⁶⁶ For example, an experimental set-up that involved subjects placing a finger in an electrolytic solution while kissing or touching is described as a step towards measuring coitus in a write-up for November 24th, 1935. See Orgone Institute Box 6, Folder 6.

¹⁶⁷ Perhaps most famous of the pairs devices is the “Ulysses” device, which was actually meant for filming and viewing, not taking physiological measurements. A hit television series has spawned from a recent biography by Thomas Maier, *Masters of Sex: The Life and Times of William Masters and Virginia Johnson, The Couple Who Taught America How to Love* (New York: Basic Books, 2009).

needed from each trial and quickly moving on to newer, more refined experimental setups.

Also tucked into Reich's notebook is an undated sheet of paper, written in English, titled "References in Connection with Bio-Electric Phenomenon and Ovulation." It lists the work of Harold Saxton Burr and his colleagues. It is unclear who provided this letter, and it seems likely that it was given to Reich after his immigration to the United States in 1939, as there is a note suggesting Burr's articles might be found in the New York Academy of Medicine on 103rd Street and 5th Avenue.¹⁶⁸

Burr developed concepts regarding the role of bioelectricity in man that resembled Reich's own intellectual trajectory in many ways. Born in Lowell, Massachusetts and E.K. Hunt Professor of Anatomy at Yale University until his retirement in 1958, Burr moved from a study of the central nervous system to interest in the peripheral nerves, and finally to electrodynamics.¹⁶⁹ Remarkably, Burr created a device for the detection of disease based on the concept that the human body was an electrochemical machine. In 1936, *Time* magazine described the machine as being able to measure "electrical changes in the body as small as five one-millionths of a volt . . . [and] detect and record electrically . . . differences between mice who are bound to develop cancer and mice who never will develop cancer, the first stirrings of cancer in mice long before the tumors are visible."¹⁷⁰ Burr also became interested in atmospheric phenomenon—on the occasion of his retirement a biographer noted: "It is interesting to

¹⁶⁸ Wilhelm Reich Archives, OI Box 6, 1-5.

¹⁶⁹ "Harold Saxton Burr," *Yale Journal of Biological Medicine* 30.3 (1957): 161.

¹⁷⁰ "Electric Disease Detector," *Time* 28.21, 11/23/1936, 56.

visit Dr. Burr in his ancestral home, 'Mansewood,' in Lyme and to discover various trees hooked up to recording voltmeters. They tell their story of their electrical potential changes in fair weather and storm.”¹⁷¹

Burr developed a theory of “L-fields” with his colleague Filmer Stuart Cuckow Northrop, a professor of philosophy at Yale. A feature in *Harper's* reads: “They see every organism, from microbe to man, as the dwelling-place of a dominating electro-dynamic field, something analogous to a magnetic field which reaches out from and surrounds a magnet. The electro-dynamic field of each body governs its growth, directs its development, and influences all its processes of living.”¹⁷² Burr's publications attempt to deal with the most fundamental problems of human nature, including titles like, *The Nature of Man and the Meaning of Existence* (1962) and *Blueprint for Immortality: The Electric Patterns of Life* (1972).

Reich clearly followed up on Burr's work, because he kept several articles by him in his personal library.¹⁷³ The following passage in one of the works is highlighted: “The crucial question of fact raised by our theory is this: May it not be the case that the organism as a whole has a definite and relatively steady-state electrical field pattern of organization which can be measured and expressed in terms of potential differences objectively discoverable with the apparatus of a physicist?”¹⁷⁴ Unfortunately, there is no record of correspondence between the two men.

¹⁷¹ “Harold Saxton Burr,” 162.

¹⁷² George W. Gray, “The Electrical Basis of Life,” *Harper's Magazine* November 1943, 539.

¹⁷³ *Personal Library of Wilhelm Reich* (Rangeley, ME: Wilhelm Reich Infant Trust, 2012), 100-101.

¹⁷⁴ From H.S. Burr and F.S.C., “Experimental Findings Concerning the Electro-Dynamic Theory of Life and an Analysis of their Physical Meaning” (1937): 82. Wilhelm Reich Museum, Personal Library of Wilhelm Reich.

Trouble in Norway

Strick has detailed the smear campaign that arose against Reich in Norway, in which Dr. Gjessing at least nominally played a role. Reich was accused in late March of 1938 of having requested to arrange coitus between the insane at Dikemark by Johan Scharfenberg, a prison medical officer and director of Oslo Hospital, who claimed that Gjessing had released a copy of the request to him. This was used as proof that Reich had “shown his contempt for medical ethics.”¹⁷⁵ Gjessing never took a public stance, although Hoffman did. It does not seem at all out of character for Reich to suggest something of this nature, but he clearly displayed a concern for medical ethics even in his request for the filming of catatonic states. There is no further communication between Gjessing and Reich contained in the archives, so the men may have indeed severed their relationship.

In a rebuttal, Reich claimed that he had wanted Löwenbach to measure the erogenous zones of catatonics, but was unable to do so. He also made reference to Burgholzi, where Jung had worked alongside Eugen Bleuler with schizophrenics, and argued that ignorance of the sexuality of schizophrenics was a major problem.¹⁷⁶ Finally, he suggested that Gjessing had great interest in his work, which may be true considering how long he allowed Reich to engage with his institution, and he even suggested that

¹⁷⁵ Dr. Scharfenberg to Nic Hoel, March 25, 1938. In, Correspondence Box 9.

¹⁷⁶ Rob Couteau, “Jungian Social Neglect,” *Spring: A Journal of Archetype and Culture* (1988). Bleuler and his colleagues eventually broke away from this fellow psychiatrists, founding their own “Freud Organization” (*Freudsche Vereinigung*) in 1909. See: Anne Harrington, *Reenchanted Science: Holism in German Culture from Wilhelm II to Hitler* (Princeton: Princeton University Press, 1999), 79. Bleuler would eventually publish research on the erotic life of schizophrenics prior to the onset of their illnesses. See: P. Rowlands, “Schizophrenia and Sexuality,” *Sexual and Marital Therapy* 10.1 (1995): 50-51.

Gjessing had specially ordered oscillograph panels from his bioelectrical experiments.¹⁷⁷

This cannot be confirmed, although Reich certainly did send him copies.

1938 also witnessed the issuance of a Royal Act that “limited the access for anybody to employ psychoanalytic methods of examination and treatment. What made the Act unique was that it forbade physicians lacking special training to make use of psychoanalysis or to call themselves psychoanalysts.”¹⁷⁸ Schjelderup was not a physician, but he was one of seven individuals approved to practice. However, in part to shield psychoanalysis from increasing restrictions, he became more publicly outspoken against Reich. Things continued to deteriorate in Oslo, with Hoffman denouncing Reich as untrained and unqualified, and described Reich and his supporters as, “a circle of unlearned amateurs.”¹⁷⁹

Although Reich was able to ignore any perceived slights from Petersen, the disagreements with Löwenbach and the criticism from Hoffman would gnaw at him. Both men thought that Reich was an amateur drawing completely unfounded conclusions from his bioelectrical experiments, and they were not afraid to say so, even publicly. Reich could not progress with his assistants, his underlings, denying the validity of his work. He fought hard to discredit them. In a letter to his inner circle, Nic and Sigurd Hoel and Odd Haverhold, Reich wrote up a rebuttal against the pair of physiologists. It is translated in full in appendix 2, and portions are reprinted below:

¹⁷⁷ Reply from Reich on March 29, 1938. In, Correspondence Box 9.

¹⁷⁸ Alnoes, “The Development of Psychoanalysis in Norway,” 73.

¹⁷⁹ Wilhelm Reich Archives, Correspondence Box 9, P2.

6 June 1938

The continuing attacks from the people, who use the term “expert” to gain authority, requires a factual and also a personal clarification. [...]

I. Factual

1. The “physiologist” Hoffman explains my basic point of view of the opposition of the vagus and sympathetic and its corresponding sensations as nonsense. This shows that he has no idea of the research on the autonomic nervous system of the past 10-15 years. I did not invent this dichotomy of autonomic function, but only built on this known fact my orgasm-thesis and physiological experiments. The only thing I've really done here, is to prove the electric charge increase on the periphery by the vagus (the same as the sexual response). In the attachment you will find some quotes from today's best work in the world: Müller's *Life Nerves and Life Drive*, from which you can clearly see how untrained Hoffman is.

...

3. The measured potentials at the skin are according to Hoffman only the expression of the potential difference between the lymph [sweat] on the skin and the electrode liquid. To write such a thing means the following: when one takes measurements in complicated experiments on human skin potential, they only determine the effects of the electrode liquid!!! Then why does one measure the skin potential at all? when one could determine it by a non-living membrane system. . . . Hoffman does not know this fact although it should interest him as an expert. Hoffman does not know that behind the membrane called “skin,” millions of membranes inside the body act to form an intricate electrical relay system [originally membrane system]. Based on this fact, during his time in Berlin, Professor Kraus developed the "fluid theory of life."

The whole organism is therefore a membrane/electrolyte system. The electrical reaction of the body can therefore swing both ways in the nerves and in the body fluids (“Jonenvektion”). Obviously, it can also swing from the organ center [membrane center is crossed out] to the periphery and vice-versa.

...

4. The expert in physiology finds it particularly amusing that I conceive the orgasm as “electrical discharge” ... To this one can give a purely physiological response. Every muscle twitch is accompanied by electrical discharge. The orgasm is (See Müller page 673) convulsions not only of

the genital muscles but also muscles in other parts of the body. So I have only summarized known physiological facts in this applied it in my sexual-economic theory.

. . .

7. Hoffman and Löwenbach claimed that a damp cloth displays the same phenomena. Figure 31, Table 10 in my publication shows the negative deflection when connecting two unpolarizable liquid electrodes through a damp cloth. This deflection was seen by Schjelderup, Löwenbach, and Hoffman at the much mentioned experimental evening in my apartment. A positive charge did not happen and was not recorded. Hoffman's incorrect assertion refers to the control experiments in Dikemark. Hoffman had the different electrode with which he measured, alternately placed on the palm of the catatonic or on the wet cloth was then tickled with cotton. In both cases the organic tickle fluctuations were shown. Either Löwenbach or I had overlooked that the indifferent O-electrode of the leg had not been removed. That is very easy to prove: Otherwise it would not have been possible that the measuring electrode could be alternately placed on the hand and cloth. Thus came into existence the famous "living cloth." I have repeated this after separation from Hoffman and Löwenbach dozens of times without a body connection and have not seen a tickle phenomenon or even a positive charge on a damp cloth. The experiment is easy to perform at any time. This fact is also published in my pamphlet, page 34. I declare in this respect the utterances of Hoffman, Löwenbach and Schjelderup uncritical, unproven and totally uncomprehending mistakes.

. . .

II. Personal

. . .

2. Hoffman related that Löwenbach, who I honored with a 260 monthly kroner, worked for a Rockefeller scholarship.

. . .

6. Löwenbach, who is in Oslo for the time being, is a half-Jew and was discharged from the Kaiser-Wilhelm Institute in Berlin. He was paid by me for 6 months and showed a national socialist mindset, which clarifies this whole situation. . . .

Signed Wilhelm Reich, June 14, 1938¹⁸⁰

¹⁸⁰ Wilhelm Reich Archives, Correspondence Box 9, P2. Translation my own.

In this lengthy statement, we catch an excellent glimpse of the personality of Reich the laboratory scientist. He is haughty, able to suggest that the very assistants who showed him how to operate his own oscillograph are completely unable to interpret the data it produces. He is also incredibly condescending towards both men, and at the same time very defensive. Reich makes it clear that he is the one who severed the relationship; he abandoned his assistants and not the other way around. This is a pattern that Reich would repeat throughout the rest of his professional life.

By this time, Reich must have been feeling attacked on all sides. His bioelectrical experiments were a success in his eyes, but a failure to his trained physiologists. His new work on biogenesis was being sharply criticized by Dr. Liev Kreyberg, professor of pathological anatomy, and Thorsten Tjøtta, professor of bacteriology. Alnoes notes that “Reich was considered to be uncritical and medically unsound. He was also accused of accepting treatment fees from patients without having been licensed as a physician by the Norwegian authorities.”¹⁸¹

Despite the protests raised by Reich’s supporters, including Schjelderup, who had already distanced himself from Reich’s theoretical viewpoints, Schaffenberg’s criticism of Reich had been forwarded to the Ministry of Social Affairs, and ultimately the Surgeon General decided not to renew Reich’s residence permit. By August 1939 he was being asked to leave the country. He ended up fleeing the entire continent after finding work at the New School of Social Research in New York. He remained in New York until 1942, eventually moving to Rangeley, Maine to found his own institute and observatory called Orgonon. Although the original oscillograph used in the bioelectrical

¹⁸¹ Alnoes, “The Development of Psychoanalysis in Norway,” 75.

experiments survived the trip, it was not used again. Reich became increasingly occupied with his cancer research and his theory of orgone energy. The latter concept had replaced bioelectricity as the energetic source of sexual arousal, and there were new devices and instruments to be created. The oscillograph remains on exhibit today in Reich's observatory as a part of the Wilhelm Reich Museum.

Conclusion:
An Unsuccessful Revolution

Although Reich would move on from his bioelectrical experiments to his work on bions and later orgone energy, he initially considered his work to be a success that positively established the fact that “the process of sexual excitation is to be understood as an electrical charging of the erogenous zones at the surface of the organism, and the orgasm as a discharge of the potential accumulated during forepleasure.”¹ On the psychic level, “the ‘active attitude of the ego in the act of perception’ is identical with the flowing of the electrical charge of the organism towards the periphery.”² In his schema, the drives represent the motor component of pleasure. He thus declared that “*the Freudian ‘unconscious’ is present and concretely comprehensible in the form of vegetative organ sensations and impulses.*”³ Rejecting Ferenczi’s theory that genitality was the successful synthesis of anal and urethral drives (amphimixis), Reich declared the unity of the sexual drive. The motor discharge of orgasm functioned to release this drive energy, and the disturbance of orgasm became *the* symptom of neurosis. Sexuality is “the essence of everything that is associated with excitation, flowing, surface tension, and expansion toward the periphery. . . . In contrast, anxiety would comprise everything having to do with current and excitation directed toward the center, away from the world. Its result would be central vegetative tension and its essential characteristic would be any sensation that can be described by the word tightness, constriction, anxiety, internal pressure, etc.”⁴

¹ Wilhelm Reich, *The Bioelectrical Investigation of Sexuality and Anxiety* (New York: Farrar, Straus and Giroux, 1982).

² Reich, *The Function of the Orgasm: Volume 1 of the Discovery of the Orgone* (New York: Farrar, Straus and Giroux, 1973), 52.

³ Reich, *The Function of the Orgasm*, 63. Emphasis original.

⁴ Reich, *Bioelectrical Investigation*.

The unified, bioelectrical nature of sexuality and anxiety that Reich felt he had demonstrated in his experiments functioned as proof of the existence of a single sexual energy that could overload the vegetative nervous system and lead to a host of disorders.⁵ Freud's death drive came to be understood as anxiety, especially anxiety concerning the genitals (this led to "anorgonia" an often chronic state of orgasm deprivation). Through his clinical work Reich developed the concept of orgasm anxiety, "the ego's fear of the overpowering excitation of the genital system due to its estrangement from the experience of pleasure."⁶ This theory seemed confirmed by the bioelectrical experiments, and Reich thus felt he had experimental evidence to support his refutation of the death drive, leading him to declare that "*fear of death and dying is identical with unconscious orgasm anxiety, and the alleged death instinct, the longing for disintegration, for nothingness, is the unconscious longing for the orgasmic resolution of tension.*"⁷

His experiments did much more than prove Freud's concept of the death drive incorrect. As Reich recalled: "The newly born theory of sexuality found itself utterly alone. I was consoled by the numerous confirmations of my views which I found in experimental physiology. My theory seemed capable of reducing to the simplest terms the diverse findings accumulated by generations of physiologists. *At the center stood the antithesis between sympathetic and parasympathetic.*"⁸ Reich had discovered that sexual friction was generated by a nervous antithesis, and that it was bioelectrical in nature.

⁵ In Reich's words: "The immediate cause of many devastating diseases can be traced to the fact that man is the sole species which does not fulfill the natural law of sexuality," *The Function of the Orgasm*, 9.

⁶ Reich, *The Function of the Orgasm*, 161.

⁷ Reich, *The Function of the Orgasm*, 155. Emphasis original.

⁸ Reich, *The Function of the Orgasm*, 267. Emphasis original.

Furthermore, according to Reich, this process of sexual friction, which followed the course of mechanical tension → electrical charge → electrical discharge → mechanical relaxation, was characteristic of all life forms. Christened the “orgasm formula,” it functioned as a basic biological process.

Reich declared that “*the division of the egg, like cell division in general, is an orgasmic process. It is governed by the tension charge function.*”⁹ This meant that procreation was not the goal of sexuality, but rather an incidental function of it. Pleasurable expansion and anxious contraction constituted, for Reich, the most fundamental forms of movement in a living organism. Life itself became “a condition of continuous oscillation, in which the organism is continually alternating between parasympathetic expansion (*exhalation*) and sympathetic contraction (*inhalation*).”¹⁰ These are very sweeping claims to make on the basis of a short series of experiments on the psychogalvanic skin response in human test subjects, and they were not well-received by Reich’s assistants. They were generally overlooked by other scientists, as Reich’s discovery of bions in generated extreme controversy in Norway.¹¹

Historian of science James Strick has done an excellent job detailing the bion experiments, which were inspired by his bioelectrical work. In order to further his claims about orgasm as characteristic of all life forms, Reich largely abandoned his bioelectrical experiments and moved into microbiology. Believing that his experiments had proven

⁹ Reich, *The Function of the Orgasm*, 283. Emphasis original.

¹⁰ Reich, *The Function of the Orgasm*, 295.

¹¹ Phillip Bennett notes that the Norwegian controversy may have been provoked by Reich’s publication of *Masse und Staat*, which was critical of the Soviet Union. He notes that the *Arbeiderbladet* published the majority of attacks on Reich’s biological work. See Phillipp Bennett, “Wilhelm Reich’s Early Writings on Work Democracy: A Theoretical Basis for Challenging Fascism Then and Now,” *Capitalism Nature Socialism* 21 (2010): 53–73.

that bioelectrical expansion and contraction represented a basic life function, Reich moved away from physiological investigations of human sexual arousal and began to take electrical measurements of unicellular organisms. Under the microscope Reich observed the formation of bions—tiny vesicles that formed from plant tissue as it swelled and disintegrated. Reich would go on to propose the existence of antithetical life-promoting (PA bions) and life-destroying (t-bacilli) bion types, as well as radioactive SAPA bions. This controversy generated by this research ultimately resulted in the non-renewal of his work visa and his migration to the United States, where he would continue to be persecuted for his radical ideas.

Criticism of Reich's Bioelectrical Experiments

Rather than attempt to make a statement about whether or not the bioelectrical experiments meet current scientific standards, it is more useful to evaluate them according to the epistemic standards of the 1930s.¹² This is made somewhat difficult by the fact that Reich was a newcomer to psychophysiology, and he operated outside of the accepted standards of experimental psychology, which maintained relatively standardized laboratory practices for studying humans by the 1930s.¹³ This included aggregate statistics, random sampling, and independent experimental replication that allows for a generalization of experimental results. Nevertheless, as will be clearly demonstrated from an analysis of an article on “Dr. Reich and his Electrophysiology” written by Wilhelm

¹² As Steven Shapin notes, “It would, of course, be a great mistake for the historian simply to appropriate and validate one side of a scientific controversy.” *Leviathan and the Air-pump: Hobbes, Boyle, and the Experimental Life* (Princeton: Princeton University Press, 2011), 7. We learn much more by examining the arguments from both sides of the debate, and placing these arguments in their historical context.

¹³ Jill Morawski, “Epistemological Dizziness in the Psychological Laboratory: Lively Subjects, Anxious Experimenters, and Experimental Relations, 1950-1970.” *Isis* 106.3 (2015): 576.

Hoffman, one of Reich's assistants from the bioelectrical experiments, and published in the Norwegian newspaper *Arbeiderbladet* in 1938, Reich was expected to conform to these standards and he was judged negatively for not doing so. As Reich considered himself a revolutionary thinker and therefore, to some extent, outside of the normal rules of science, my analysis will be supplemented with supporting quotations from Kuhn's *The Structure of Scientific Revolutions* and Shapin's *Leviathan and the Air-pump*, both of which deal with the controversy surrounding paradigm-changing science.

During the backlash that arose in Norway in respect to Reich's work, especially his microbiological work, a series of newspaper articles were published in popular Norwegian press outlets. Most of these articles defamed Reich as a madman or a sex freak, but some were more kind. In particular, Hoffman would pen an article for the newspaper *Dagbladet* that criticized the harshness of the smear campaign against Reich's scientific work and the accusations that he had attempted to arrange sex between mental patients, which Hoffman declared "was really going too far."¹⁴ Still, Hoffman was no believer in Reich's scientific activities, and his article in the *Arbeiderbladet* condemns Reich's work as a failure.

Hoffman declared that Reich had "made a scientific error" and "is a dreamer who doesn't understand scientific work."¹⁵ One area of contention that Hoffman pointed out was the issue of independent controls. This had become a baseline of scientific practice, and Reich's inability to successfully generate verification of his experimental work was

¹⁴ See Strick, *Wilhelm Reich: Biologist* (Cambridge, MA: Harvard University Press, 2015), 232.

¹⁵ W. Hoffman, "Dr. Reich og hans elektro-fysiologi," *Arbeiderbladet*, 8 June 1938. Thanks to Jana Krekic for translating this article into English.

due to his inability to gain interest in his claims. In so far as Reich's experiments followed hypothetico-deductive reasoning, they were in line with new trends in biology, which had come to incorporate physiological methods by the twentieth century. However, to the extent that Reich's work belongs to the German holistic movement, which encompassed dialectical materialist thought, it might only be expected that his work would be "ignored, or actively dismissed, by younger biologists."¹⁶ As is visible when considering the differences, for example, between Reich's own approach to dialectical materialism and that of contemporaries like Oparin and Bernal, holistic thinking in "the early decades of the century was a persistent, though often muffled and confusing strain of" thought.¹⁷ The experimental results needed to incite a sense of crisis in the scientific community, they needed to record an anomaly in a way that is precise and convincing enough to overcome expected resistance and to resemble "more than just another puzzle of normal science."¹⁸ Since Reich's bioelectrical work failed to incite this sense of crisis among other scientists in Norway—his results were quickly dismissed as experimental artefacts or just one of a handful of known anomalies that would eventually be accounted for.

¹⁶ Garland E. Allen, "The Changing Image of Biology in the Twentieth Century," in *The Changing Image of the Sciences*, ed. Ida H. Stamhuis (Boston: Kluwer Academic, 2002), 53. For more on the development of hypothetico-deductive reasoning see: Barry Gower, *Scientific Method: An Historical and Philosophical Introduction* (New York: Routledge, 1997), chapter 6.

¹⁷ Allen, "The Changing Image of Biology," 62.

¹⁸ Thomas Kuhn, *The Structure of Scientific Revolutions*, 4th ed. (Chicago: University of Chicago Press, 2012), 82. For more on Kuhn, see: John Preston, *Kuhn's The Structure of Scientific Revolutions: A Reader's Guide* (New York: Continuum, 2008); Steven Shapin, "Kuhn's *Structure*: A Moment in Modern Naturalism," in *Kuhn's Structure of Scientific Revolutions—50 Years On*, ed. W.J. Devlin and A. Bokulich (Cham: Springer, 2015), 11–21.

Hoffman argued that it was up to Reich to present his claims in a convincing way and thereby achieve consensus from an unbiased scientific community, rather than pressing forward and gaining only incompetent followers. In order for a new paradigm to triumph, “it must gain some first supporters, men who will develop it to the point where hardheaded arguments can be produced and multiplied. But there is no single argument that can or should persuade them all. Rather than a single group conversion, what occurs is an increasing shift in the distribution of professional allegiances.”¹⁹ While Reich was able to get adherents, he was not always as successful in retaining them, and he seemed overly devoted to a single argument that he believed should have the power to persuade everyone, despite its repeated failures to do so. Reich seemed unable to accept that “the solutions that satisfy him may not be merely personal but must instead be accepted as solutions by many.”²⁰ From Reich’s correspondence, it is quite clear that there is evidence for Reich privileging only the insight of initiates; only those familiar with his sex-economic work were considered prepared to interpret and understand his data. For example, in a letter from 1935, Edith Gluck tells Reich, “you’re wrong (we’ll talk about this some day) when you declare peremptorily that anyone who hasn’t been analyzed by you cannot understand the orgasm theory and the sex-economic point of view.”²¹

Hoffman then launched into a description of Reich’s electrophysiological work, of which he had first-hand experience. He describes himself as working primarily on the experiments at Dikemark. He remarks that he and Löwenbach did not discover the results

¹⁹ Kuhn, *Structure of Scientific Revolutions*, 157.

²⁰ Kuhn, *Structure of Scientific Revolutions*, 167.

²¹ Wilhelm Reich Archives, Correspondence Box 5, Edith Gluck to Reich, 10 April 1935, #209.

Reich desired, finding that “both sane and insane patients show the same skin potentials,” even when testing on erogenous zones like the nipples. He criticizes the fact that Reich did not try to put his investigations in line with similar experiments on insane patients.²² In other words, Reich did not seek to integrate his findings into a larger dialogue because his interest was not purely scientific but rather simply verifying his own theories.

Hoffman’s skepticism only increased as he continued to assist Reich, and he claims that he eventually left the project and communicated his dissatisfaction to Reich’s collaborators. Hoffman felt “that Dr. Reich was absolutely missing the basic knowledge in electrotechnology, and . . . [was] convinced that he hasn’t read a single work about skin potentials.” He points out several problems with Reich’s work: his technical inexperience (especially the fact that he seems to be unaware how incredibly sensitive electrophysiological instruments can be), his unfamiliarity with cardiac electrophysiology, his sloppy experimental method (data recording needed to be more rigorous, Reich needed to incorporate some sort of statistical element, poorly thought out procedures), and his confusion between membrane potentials and the expansion or retraction of the vegetative nervous system.

²² For example: A. Gregor and W. Gorn, “Zur psychopathologischen und klinischen Bedeutung des psychogalvanischen Phänomens,” *Zeitschrift für die gesamte Neurologie und Psychiatrie* 16 (1913): 1–104; Örnulv Ödegaard, “The Psychogalvanic Reaction in Normals and in Various Psychopathic Conditions,” *Acta Psychiatrica Scandinavica* 5.1 (1930): 55–103; *The Archives of Neurology and Psychiatry* published a significant number of articles on this subject in English, including: Hans C. Syz, “Psychogalvanic Studies in Schizophrenia,” *Archives of Neurology and Psychiatry* 16 (1926): 747–760 (part of this work was conducted with Curt Richter); Curt P. Richter, “Electrical Skin Resistance: Diurnal and Daily Variations in Psychopathic and in Normal Persons,” *Archives of Neurology and Psychiatry* 19 (1928): 488–508; Hans C. Syz and E.F. Kinder, “Electrical Skin Resistance in Normal and in Psychotic Subjects,” *Archives of Neurology and Psychiatry* 19 (1928): 1026–1035; Edward M. Westburg, “Psychogalvanic Studies on Affective Variations in the Mentally Diseased,” *Archives of Neurology and Psychiatry* 22 (1929): 719–736.

It is a heavy critique, and one that cannot be casually dismissed. As noted above, an important issue taken with Reich's experiments in Norway was lack of independent controls. Reich had made a conscious effort to set up controls within his own experimental trials. When he developed the bioelectrical experimental set up in collaboration with an assistant physiologist the importance of controls within the experiment itself was elaborated. In this case, a control would be, for example, a flaccid penis. Electrical measurements of the control would be taken and compared to the measurements taken from an erect penis. His experimental design was adequate in this sense. However, Reich had difficulty getting others to independently verify his experimental results, even though corroboration of results by independent scientists had become an integral aspect of scientific discovery.²³ While the measurements of catatonic schizophrenics undertaken by Hoffman and Löwenbach were meant to function as a form of independent corroboration, the results contradicted Reich's expectations and Hoffman further asserted that they could not function independent verification of Reich's work because the nature of these experiments were so different from the original bioelectrical experiments.

Since there were no independent trials carried out by investigators outside of Reich's team, there was no opportunity to solve many of the questions that arose during the course of the experiment collaboratively. (There is a letter in the archives from one Ned Plunkett, a senior at William and Mary College. Plunkett wanted to reproduce Reich's bioelectrical experiments before he headed off to medical school, but it does not

²³ Of course, the situation was similar for Boyle, who "expressed despair that [his] . . . experiments would ever be replicated," Shapin, *Leviathan and the Air-pump*, 60.

appear that he ever found the time.)²⁴ Of course, Reich's disagreements with his own hired assistants has been discussed at length. He was unable to convince even his own collaborators of the accuracy of his scientific instrument, throwing all of the data it produced into doubt.²⁵ Whether the results achieved in the experiment were an artefact of the galvanometer or were actually indicating something of scientific importance could not be verified without independent replication, preferably with a different but similarly constructed recording device. However, it is worth noting that historians of psychology have determined that "the rise of sustained theoretical interest in, and systematic research on, the experimental artifact problem did not begin in earnest until the 1950s."²⁶ Therefore, Reich might be entirely forgiven for overlooking the fact that his oscillograph might have yielded less than accurate results.²⁷

²⁴ Wilhelm Reich Archives, Correspondence Box 12, Ned Plunkett to Wilhelm Reich 17 February 1944 and 11 March 1944. Reich mailed Plunkett a sample of a cellulose ester compound to help him carry out the experiments. He also advised Plunkett not to carry out the work unless in dry weather, as high humidity makes orgone energy disappear. In typical Reichian fashion, he warned Plunkett, "you may try to arrange the experiment, but I am afraid you will not be able to interpret the results correctly."

²⁵ The importance of faith in the scientific instrument is discussed at length in Shapin's *Leviathan and the Air-Pump*. He also discusses how the cost and fickleness of the instrument, both drawbacks apply to Reich's oscillograph as well. However, Reich in many ways subverted the paradigm established by the expensive air-pump, in which the laboratory became "a disciplined space, where experimental, discursive, and social practices were collectively controlled by competent members," 39. Thanks to the financial backing of wealthy donors, Reich was able to create his own laboratory space in which, according to Hoffman, practice was controlled by incompetent followers of Reich's orgasm theory.

²⁶ Jerry M. Suls and Ralph L. Rosnow, "Concerns about Artifacts in Psychological Experiments," in *The Rise of Experimentation in American Psychology*, ed. by Jill G. Morawski (New Haven: Yale University Press, 1988), 165.

²⁷ The psychogalvanic skin response remained a controversial measurement throughout the earlier twentieth century, although it is a quite common physiological measurement today. Even in the 1930s, when the method was beginning to gather real momentum, there was question as to exactly what was being measured by the psychogalvanic skin response. One author noted: "the psychogalvanic response, while it probably does not satisfactorily measure any of the conventionally named psychological functions . . . may measure—at least roughly—something important to psychology: namely, degree of hyper-functioning of the sympathetic (thoracico-lumbar) division of the autonomic nervous system." Richard Sears, *Psychogalvanic Responses in Arithmetical Work: Effects of Experimental Change in Addition* (New York: Archives of Psychology, 1933), 1. Other experimenters confirmed that the psychogalvanic skin response is definitely measuring some form of autonomic action. See: W.D. O'Leary, "The Autonomic Nervous

Furthermore, in a 1955 address, B.F. Skinner suggested that the scientific method is unable to capture the vagaries of scientific practice; he points out the role of serendipity, especially in the breakdown of apparatuses, from which “some of the most interesting and surprising results have turned up.”²⁸ For Skinner, what had appeared to be a defect in his device became the source of an important new discovery. Perhaps it would be too hasty, then, to assume that Reich was simply misinterpreting artefacts of his oscillograph during his experiments.²⁹ Indeed, W.P.D. Wightman chides, “it is never wise to deny to men of genius the use of any methods to which their intuition may guide them; they can usually be relied upon to do the right thing, even though through the unfamiliarity of the procedure they may give the wrong reason for doing so.”³⁰

As Feyerabend points out in his famous *Against Method*, the neat rules of method cannot possibly capture the messiness of scientific discovery: “the history of science will

System as a Factor in the Psychogalvanic Reflex,” *Journal of Experimental Psychology* 15 (1932): 767–772. Similarly, a collection of studies utilizing this “widely used tool” published in 1936 mentions the difficulty of determining to what extent recorded measurements represent emotion: “An irksome problem recognized in all work on the feelings and emotions involves the conflicting result from movements made during affective responses.” Christian A. Ruckmick, “Introduction,” *Psychological Monographs* 48 (1936): iii–iv. Caution was, therefore, necessary in interpreting any results: “One of the largest sources of error lay in the fact that the physiological processes are influenced by a variety of conditions outside of the affective responses. If we proceed cautiously we shall be able in time to factor out some of these conditions, but we certainly must not draw sweeping conclusions because the curves obtained seem to be so definite and so plausible.” Christian A. Ruckmick, “Emotions in Terms of the Galvanometric Technique,” *The British Journal of Psychology* 21 (1930): 150. Despite misgivings about the authenticity of results provided by the psychogalvanic skin response, “electrodermal has become one of the most frequently used biosignals in psychophysiology.” Wolfram Boucsein, *Electrodermal Activity*, 2nd ed. (New York: Springer, 2012), 1.

²⁸ B.F. Skinner, “A Case History in Scientific Method,” *The American Psychologist* 11 (1956): 226.

²⁹ It can be very difficult to determine out what is an instrumental artefact, even with measuring instruments as simple as a rain gauge. Typically, these issues are solved through large scale collaboration, often over significant periods of time. See: Wendy Parker, “Distinguishing Real Results from Instrumental Artifacts: The Case of the Missing Rain,” in *Going Amiss in Experimental Research*, eds. Giora Hon, Jutta Schickore, and Friedrich Steinle (S.l.: Springer, 2009), 162.

³⁰ W. P. D. Wightman, *The Growth of Scientific Ideas* (New Haven: Yale University Press, 1953), 94.

be as complex, chaotic, full of mistakes, and entertaining as the ideas it contains, and these ideas in turn will be as complex, chaotic, full of mistakes, and entertaining as are the minds of those who invented them.”³¹ Nevertheless, no scientific research is meant to be conducted in a social vacuum, indeed we might understand the scientific method “as crystallizing forms of social organization and as a means of regulating social interaction within the scientific community”³² Reich needed to play by at least some of the rules, something he was rather unwilling to do.³³

The general rules of scientific consensus applied to Reich’s own work, and that included convincing the scientific community that his experiments had produced fact. As Shapin aptly notes: “An experience, even of a rigidly controlled experimental performance, that one man alone witnessed was not adequate to make a matter of fact. If that experience could be extended to many, and in principle to all men, then the result could be constituted as a matter of fact.”³⁴ Hence the importance of independent verification.

³¹ Paul Feyerabend, *Against Method*. New ed. (New York: Verso, 2010), 3.

³² Shapin, *Leviathan and the Air-pump*, 14.

³³ This requires behaving according to certain rules: “One of the most important things they [students of science] learn is to take account of their fellows in the scientific community, those who will review their proposals and decide whether and how much to support their research. Individuals therefore learn to curb or modify their wilder inclinations, to pay some heed to the consensus that prevails around them; and thereby much naivete and sheer nonsense are nipped in the bud almost before they can enter into science. Only those who have learned the current state of the art are taken seriously, and only when they comport themselves in a reasonably disciplined fashion.” Henry H. Bauer, *Scientific Literacy and the Myth of the Scientific Method* (Urbana: University of Illinois Press, 1992), 46.

³⁴ Shapin, *Leviathan and the Air-pump*, 25.

Reich also failed to meet standard expectations of the early twentieth century, like publishing his results in a peer-reviewed journal.³⁵ Hoffman suggested that Reich should have refrained from attempting to publicize any of the experimental work he carried out in Oslo, keeping them only to his own privately published journal, and in doing so he might have avoided some of the condemnation that he brought upon himself by trying to convince the scientific community of the validity of his work. According to Hoffman, “Dr. Reich’s articles have been published in a not so official scientific magazine, that is, in a private magazine without an expert editorial review. Dr. Reich would not have been attacked in the press by the Norwegian people if this research material had stayed within his narrow circle of followers. . . . The first time Dr. Reich . . . let the *Dagbladet* publish highly promoted articles about his results was when he called forth people’s anger.”³⁶

An additional issue with Reich’s work that is often mentioned negatively is his “narrative style and use of selective examples” which vary significantly from what is accepted as standard scientific writing today; however, both Sharaf and Strick agree that

³⁵ See Bauer, *Scientific Literacy*. There is a large body of sociological scientific research, established by Robert Merton, which purposefully distinguishes itself from the history and philosophy of science (see Kyung-Man Kim, *Explaining Scientific Consensus: The Case of Mendelian Genetics* [New York: Guilford, 1994], 1). It deals extensively with the achievement of scientific consensus and the acceptance of scientific theories, with a focus on the role of scientific elites. For more, see: Karin D. Knorr, Hermann Strasser, and Hans Georg Zilian, *Determinants and Controls of Scientific Development* (Boston: D. Reidel, 1975); Robert E. Rosenwein, “Social Influence in Science: Agreement and Dissent in Achieving Scientific Consensus,” in, *The Social Psychology of Science*, eds. William R. Shadish and Steve Fuller (New York: Guilford, 1994), 262-285.

³⁶ Hoffman, “Dr. Reich og hans elektro-fysiologi.” This was an important point in producing experimental fact, as early as the seventeenth century: “the writing of experimental reports was of equal importance to doing the experiments themselves,” Shapin, *Leviathan and the Air-pump*, 62–63.

this was very common for the 1930s.³⁷ Footnotes and excessive references would have interfered with Reich's rhetorical style, which was at one complicated and passionate.³⁸

Following Hoffman's published critique, the only other significant critique of the bioelectrical experiments I could locate came a full ten years after Reich's emigration to America. In 1949, one P.D. Eeman published a short criticism of Reich's theory of orgasm in the *International Journal of Sexology*.³⁹ The review was prompted by the publication of a *Clinical Psychology* (1948) written by the English analyst Charles Berg, in which Reich's theory of orgasm is endorsed. A firm believer in the importance of the orgasm in mental health, Eeman sees the essential task at hand for the establishment of any future orgasmotherapy as being the clarification of "Reich's error in orgasm physiology."⁴⁰ Eeman takes issue with Reich's equating parasympathetic tension with pleasure, and sympathetic tension with anxiety, arguing instead that "orgasm is an instant of acute sympatheticonia which occurs at the end of a long period of marked parasympathetic preponderance and activity." But Eeman's call to reevaluate Reich's work and develop a new theory of orgasm based on it has gone unanswered.

³⁷ Strick, *Wilhelm Reich: Biologist*, 256.

³⁸ Nevertheless, it remains a truism that "Consistency, sophistication, and beauty are never enough in scientific research, the end product of which is expected to match reality—or at least to be true to some degree. . . . The place for unbridled speculation is art, not science." Kendrick Frazier, *Science Under Siege: Defending Science, Exposing Pseudoscience* (Amherst, NY: Prometheus, 2009), 237.

³⁹ P.D. Eeman and C. Berg, "Physiology of the Orgasm and of Psychoanalysis," *International Journal of Sexology* 3.2 (1949): 92–98.

⁴⁰ Eeman, "Physiology of the Orgasm," 92.

Comparative Case Studies

Since Reich's efforts vary substantially from typical experimental methods, it is useful to examine his bioelectrical experiments in light of four case studies from a similar time period. Before moving on to discussing how Reich's bioelectrical experiments reflect on the understanding of orgasm in interwar Europe, I want to present a few case studies that can help us better situate Reich. Strick briefly compares Reich's personality and scientific approach to those of famous dialectical materialists Bernal and Oparin. Here, I will discuss Reich's theoretical views in relation to two famous scientists who also tackled the question "what is life?" and arrived at very different answers from Reich, Jacques Loeb and Erwin Schrödinger. Following this, I will discuss his personality as an inventor and an amateur electrophysiologist in relation to Albert Abrams, the developer of spondylotherapy, and Hans Berger, the discoverer of the EEG.

Jacques Loeb (1859–1924) is particularly interesting because he shared some of Reich's ideas about the importance of colloids in living systems, and also because his approach to biology came to eclipse the holistic vision of Reich. Loeb began conducting experimental work in Berlin in the 1880s after receiving his medical degree, "set out to find nothing less than an equivalent between physical and mental 'energy'"—in other words, like Reich, he set out to solve the mind-body problem, led by a belief that the organism "was a system of interconnected functions in dynamic equilibrium."⁴¹ He became interested in plant tropisms, finding in them the possibility of explaining

⁴¹ Rebecca Lemov, *World as Laboratory: Experiments with Mice, Mazes, and Men* (New York: Hill and Wang, 2005), 14. For a biography of Loeb, see Philip J. Pauly, *Controlling Life: Jacques Loeb and the Engineering Ideal in Biology* (New York: Oxford University Press, 1987); and W.J.V. Osterhout, *Biographical Memoir of Jacques Loeb* (Washington, DC: National Academy of Sciences, 1930).

behavior as chemical-mechanical reactions. While living in Chicago, he began to experiment with artificial parthenogenesis. After moving to California, he penned his famous book, *The Mechanistic Conception of Life* (1912), which determined that “irritability and conductivity are the only qualities essential to [central nervous system] reflexes, and these are both common qualities of all protoplasm.”⁴² Nerves are simply an evolved, differentiated protoplasm. Instincts are nothing more than inherited reflexes, and there is little sense in demarcating between them.

Due to the similarity of nerves and protoplasm, and also to the fact that chemicals like Na, K, and Ca can induce spontaneous changes in an organism, Loeb finds that the existence of a central nervous system is entirely unnecessary for reflex and spontaneous action. However, he differs from the conclusions Reich ultimately draws about consciousness, finding that only certain species have developed to the point of being able to produce associative memory.⁴³ Loeb sees the brain as the important area of inquiry regarding consciousness, but he believes it will be the study of colloidal substances, not histology, surgery, or experimental psychology, that unravels the secret of memory.

Unlike Reich, Loeb’s work was successful in inspiring a vast research program in the early twentieth century.⁴⁴ In a distinctly anti-Reichian agenda, Lemov describes it as seeking “to make out of living parts a machinelike creature filled with mechanical

⁴² Jacques Loeb, *The Mechanistic Conception of Life*, ed. Donald Fleming (Cambridge, MA: Belknap, 1964), 67. Other important works include *The Dynamics of Living Matter* (1906), *The Organism as a Whole from a Physicochemical Viewpoint* (1916), and *Proteins and the Theory of Colloid Behavior* (1922).

⁴³ Loeb, *Mechanistic Conception of Life*, 73–74.

⁴⁴ This is in spite of the fact that “Loeb had no obvious school of disciples. He had not trained a large number of graduate students. . . . and his approach was not easily teachable in a university setting.” See Pauly, *Controlling Life*, 166. Pauly’s chapter on “The Loebian Influence in American Biology” is excellent when thinking about scientific personas.

rhythms that were also somehow natural.”⁴⁵ In the United States, Loeb’s work also became part of a large legacy of mechanism that would eventually eclipse holistic biology almost completely. Lemov continues: “During the first two-thirds of the twentieth century, theory and practice met in certain laboratories in America, as human engineering began to take the reality-driven form of a series of experiments. Adopting what the proto-biotechnologist Jacques Loeb called an ‘engineering standpoint’ toward human life, its adherents set about to make the ultimate social science.”⁴⁶ Considering that, in the 1920s, this program received massive amounts of money from the Rockefeller Foundation, it should come as no surprise that Reich was unsuccessful in securing backing from this prestigious organization. Reich was not on board with the rising tide of behaviorism, and so he was largely forced to go it alone.

I have often felt that Reich was one of the last of a dying breed of heroic nineteenth century scientists, who believed that their theories could unlock the very secret of life itself. As Garland Allen notes: “It was . . . the downfall of nineteenth-century biologists to have tried to attack problems that were too large and too complex to be investigated by the available concepts and techniques.”⁴⁷ Out of place in the twentieth century, Reich was criticized not so much for the experimental findings themselves as for his attempt to claim to have individually solved the mystery of life.⁴⁸ Of course, I have

⁴⁵ Lemov, *World as Laboratory*, 38.

⁴⁶ Lemov, *World as Laboratory*, 4.

⁴⁷ Garland Allen, *Life Science in the Twentieth Century* (New York: Cambridge University Press, 1978), 42.

⁴⁸ As Steven Shapin quotes Claude Bernard: “Art is I, Science is We.” See *The Scientific Life: A Moral History of a Late Modern Vocation* (Chicago: University of Chicago Press, 2008). We see in Reich a more nineteenth-century approach to the vocation—science for him is a calling, in fact a destiny, and much more than a job or a means of making a living. In spite of any disagreement, there does seem to be something

been reminded that this effort to unlock the secrets of life continued well after Reich, and still exists today. The most obvious example would be *What is Life?* published in 1944, half a decade after Reich's work in Oslo, by Erwin Schrödinger (1887–1961).⁴⁹

Of course, Schrödinger was careful to reconstruct the question to something much more specific and tangible than Reich's overarching theories: "Schrödinger's first move (being ever the practical physicist!) was to change the question from 'What is life?' to the experimentally more tractable question, 'What is the physicochemical basis of heredity?'"⁵⁰ Based on a series of lectures delivered at Trinity College, Dublin in February 1943, Schrödinger presents a series of puzzles, explains the scientific facts that may be able to solve them, and then opens the argument up for further pursuit.

Like Reich, Schrödinger believed there was an undiscovered principle that accounts for the existence biological organisms, but this principle, while unique to living things, is reducible to physical laws. He considers this to be the aperiodic crystal: "few words more are needed to disclose the point of resemblance between a clockwork and an organism. It is simply and solely that the latter also hinges upon a solid—the aperiodic crystal forming the hereditary substance, largely withdrawn from the disorder of heat motion."⁵¹ These are the theories of quantum mechanics. According to Lenny Moss,

unique about the image of the pre-twentieth-century scientist and his claims to the truth, and Shapin captures this shift well.

⁴⁹ Thanks to the attendees at the 2016 Vanderbilt Annual Graduate History Association Conference for their comments.

⁵⁰ Michael R. Hendrickson, "Exorcizing Schrödinger's Ghost: Reflections on 'What is Life?' and Its Surprising Relevance to Cancer Biology," in *What is Life?: The Intellectual Pertinence of Erwin Schrödinger*, ed. Hans Ulrich (Stanford: Stanford University Press, 2011), 58.

⁵¹ Erwin Schrödinger, *What is Life? The Physical Aspect of the Living Cell with Mind and Matter and Autobiographical Sketches* (New York: Cambridge University Press, 1962), 85.

Schrödinger attempted “to make the question of inheritance interesting to physicists by retouching it in terms of the physics of stability and predictability. He follows Delbrück in uniting the idea of genetic transmission with that of information given a physical meaning by quantum mechanics. The product of this marriage is the concept of the ‘hereditary code-script.’”⁵²

These ideas became very powerful:

The influence of Schrödinger’s aperiodic crystal and code-script cannot be overestimated. These notions, forming one of the two most important clusters of ideas contained in *What is Life?*, foreshadowed and inspired the well-known explosive development of molecular genetics in the following decades: notably, the double-helical DNA of Watson and Crick, the discovery of the ‘genetic code’, and the formulation of the theses that came to be known as the ‘Central Dogma’ of molecular biology, which proclaims the unidirectional flow of ‘information’ from DNA to RNA to protein.⁵³

Similar to Loeb, Schrödinger’s work inspired an entire research program, one that reasserted and secured the triumph of reductionism in the life sciences. Strick notes: “The renewed reductionist tide reached a record high water mark with the Watson, Crick, and Franklin DNA structure, the Urey-Miller origin-of-life experiment (both in the spring of 1953), and the cracking of the genetic code.” Anything that didn’t fit within the reductionist paradigm fell into the waste-basket of “mystic ‘vitalism’”⁵⁴ Of course, Reich, who was (like Freud) rather dismissive of hereditary explanations and “had very little to

⁵² Lenny Moss, *What Genes Can’t Do* (Cambridge, MA: MIT Press, 2004), 56.

⁵³ Hendrickson, “Exorcizing Schrödinger’s Ghost,” 48.

⁵⁴ Strick, *Wilhelm Reich: Biologist*, 311.

say about genes, except to deplore their excessive invocation without evidence in Nazi ‘race biology,’” quickly became lumped in with the vitalists.⁵⁵

Strick discusses briefly the changes in approaches to the question of life. He notes that, prior to 1900, “most of the attempted ‘definitions of life’ up to that point have some merit, but they all tried to find a single key formulation to capture an extremely complex phenomenon.”⁵⁶ Similarly, in a letter from J.B.S. Haldane to A.S. Neill, a friend of Reich, Bernal commented that origin of life work “needs rather elaborate cooperative research”—something Reich was unable to accomplish.⁵⁷ In the same way, scientists today are, of course, still interested in the question of “what is life?” But there is a distinct difference in scale between current attempts to unravel this mystery and Reich’s work, the search for the Higgs Boson being an excellent example.⁵⁸ Reich wanted to solve the mystery of life all by himself, and his work is a far cry from any large scale collaborative efforts aimed at the same goal.

As far as personality is concerned, one cannot help but read similarities between Reich and Albert Abrams (1864–1924), who originated the therapeutic technique of “spondylotherapy” in 1909, developing his own courses of instruction, and founding his own association with its own press. Abrams developed electrical devices, “dynamizers,” for home use that were supposed to cure patients of a variety of ills by vibrating at a certain frequency. The dynamizers elicited much controversy, with examinations by

⁵⁵ Strick, *Wilhelm Reich: Biologist*, 320.

⁵⁶ Strick, *Wilhelm Reich: Biologist*, 26.

⁵⁷ Strick, *Wilhelm Reich Biologist*, 160.

⁵⁸ *Particle Fever*, directed by Mark Levinson, USA: Anthos Media, 2014.

prominent scientists concluding that they were poorly designed hoaxes. Nevertheless, Abrams died a wealthy man, and the so-called Abrams College he founded attempted to continue his medical legacy.⁵⁹ Although Abrams was clearly vying for profit more than cure (as is obvious from the outrageous prices for his devices), his methods are similar to Reich, who branched off from psychoanalysis to establish his own societies, publishing houses, and later set up his own lab and training institute, Orgonon, in Maine. Today, many vie to continue Reich's work and inherit his legacy, this includes the establishment of the American College of Orgonomy in Princeton, New Jersey in 1968, the Orgone Biophysical Research Laboratory set up in 1978 by James DeMeo, and the existence of the Institute for Orgonomic Science, incorporated in September 1982 as a non-profit organization.⁶⁰

Finally, considering that Reich functioned largely as an independent scientist and an inventor, a comparison with Hans Berger (1873–1941), the originator of the EEG, is useful. Interested in the possibility of telepathy, Berger began attempts to measure and quantify the psychic energy of the brain in the first decades of the twentieth century. He approached the problem through measurements of electricity, blood flow, and temperature. According to Millett, early experiments measuring blood flow to the brain showed that “pleasant sensations were accompanied by an increase in local cerebral

⁵⁹ Morris Fishbein, “The Quackery of the Abrams Box,” in *The Medical Follies* (New York: Boni and Liveright, 1925), 99-118.

⁶⁰ The College offers training for physicians in Medical Orgonomy and Character Analysis and publishes its own journal. See www.orgonomy.org, accessed 27 February 2017. James DeMeo is an author of books on Reich and orgone and is one of the more prolific researchers. His website is at www.orgonelab.org, accessed 27 February 2017. His standing within the Reichian community is debatable, and he seems to operate more independently and draw to him his own followers. For more on the Institute, see their website: www.orgonomicscience.org, accessed 3 August 2016. They publish the *Annals*, echoing the *Annals of the Orgone Institute* published by Reich.

blood flow, while unpleasant sensations were accompanied by a decrease in flow,”⁶¹ a finding that would echo Reich’s own work. Berger was not an adherent of psychophysical parallelism, but believed in a more complicated energetic interaction between the mind and body. Like Reich, he was a novice electrophysiologist, and he struggled significantly with technical issues related to the use of his recording devices. But in 1924, he developed a new technique that yielded the small, unimpressive first human EEG recordings using a string galvanometer.

In a move that would echo Reich’s own biography, he raved excitedly about his success in his diary, only to suffer disappointment from the delayed arrival of a larger galvanometer. (His diary entries are not interpreted as being grandiose simply because he went on to achieve the success he foresaw.) Like Reich, Berger hired only technical assistants, and he carried on his work as privately as possible. His pool of test subjects was not extremely large, and included himself and his son, along with patients and employees of the psychiatric clinic where he worked. Unlike Reich, his work bore fruit. The main difference between Reich and Berger becomes one of patience. Although they share many of the same characteristics over the course of their work, Reich’s discoveries are rapid, packed into short years or months, whereas Berger took the time necessary to refine his work before going public. Another difference between Reich and Berger is the size of their claims. Reich’s inability to formulate precise experimental hypotheses and to follow through on smaller discoveries may have contributed significantly to the difference between success and failure.

⁶¹ David Millett, “Hans Berger: From Psychic Energy to the EEG,” *Perspectives in Biology and Medicine* 44.4 (2001): 527–528.

Orgone Research

The lack of engagement with Reich's work on orgasm, which continues to this day, prompts the question: what happened to obscure this important historical moment and this interesting research program? One cannot answer this question or evaluate Reich's career without discussing the concept of orgone energy. Reich's alleged discovery of orgone energy, to which he devoted his entire American career (indeed, Reich would spend the rest of his life in the United States studying orgone and attempting to prove its existence and harness its therapeutic power for the treatment of a wide range of human ills, especially cancer), so damaged his reputation that it has made his entire life's work almost unapproachable by psychoanalysts, scientists, and historians alike.

According to Reich, orgone energy is a cosmic energy that permeates the universe. It is akin to sexual energy, especially in that constriction or deficits of orgone energy is the cause of all sorts of human disease curable through the reestablishment of orgasmic potency, but goes far beyond that. It is present in the radiation of the sun, and responsible for the formation of weather patterns. "The orgone contains three kinds of rays: blue-gray, foglike vapors; deep blue-violet expanding and contracting dots of light; and white-yellow, rapidly moving rays of dots and streaks. The blue color of the sky and the blue-gray haze on hot summer days are direct reflections of the atmospheric orgone."⁶² Reich is perhaps most famous for developing tall, phone-booth sized boxes in which a patient could sit and accumulate their own life-giving orgone energy.⁶³

⁶² Reich, *The Function of the Orgasm*, 385.

⁶³ People continue to construct these accumulators today. For instructions, see James DeMeo, *The Orgone Accumulator Handbook: Construction Plans, Experimental Use, and Protection Against Toxic Energy* (El Cerrito, CA: Natural Energy Works, 1989).

Although Reich's discovery of radiation from SAPA bions, as noted above, was a key factor in the discovery of orgone energy, the bioelectrical experiments also played an important, direct role in leading Reich to believe that there is an atmospheric force, later dubbed orgone, that permeates both living and non-living matter. The idea of orgone first originated from the control work done on non-living matter. In his effort to prove that the tension-charge-discharge-relaxation cycle was indeed unique to living things, Reich and his assistants undertook bioelectrical measurements on cloth. While it was initially found that cloth was not excitable in the way that the human body was, almost accidentally a strange discovery was made:

1. If the surface of the body is tickled close to an attached electrode which is connected to an oscillograph, the tickling phenomenon is revealed as an oscillation of the electrical potential of the skin.
 2. *If the same experiment is carried out with a moistened cloth, the tickling phenomenon does not occur. Thus, a moistened cloth does not "live."*
 3. If, however, one places a hand on the moistened cloth, attaches the electrodes at about 30 cm. distance from each other and "tickles" the cloth with a dry pledget of cotton approximately 2 to 5 cm. away from the hand, the tickling phenomenon is again demonstrated.
- . . . In the third experiment, this reaction is relayed from within the boundaries of the organism to a region outside of it, namely to the non-living, moistened cloth. It is as if the moistened cloth "lived" when it was touched by a living organism. The cloth responded to the tickling stimulus in the same way as the living organism.⁶⁴

This interpretation was actually a main source of disagreement between Reich and his assistants, who believed that the results Reich obtained from the cloth were in error. They had a fallout over how to interpret these results. Regardless, Reich felt the data was valid and it led him to the belief that there was an energy field that charged both living and non-living matter.

⁶⁴ Reich, *The Function of the Orgasm*, 381–382. Emphasis original.

He was also perplexed by the fact that “*the movement of bioelectric energy is fundamentally different from the known speed and type of movement of electromagnetic energy*. . . . The form of the movement is slow and wavelike. It resembles the movement of the intestine or a snake.”⁶⁵ Ola Raknes, who worked with Reich in Norway, notes about the bioelectrical experiments: “They thus showed that the antithesis pleasure-anxiety has a biological or biophysical basis, but the variations were so slight that they could not account for the experienced energies in the human emotions. These energies still needed an explanation.”⁶⁶ These observations convinced him that there was a special energy that was common to human organisms, bions, and the radiation of the sun. He carried out experiments, primarily on subjects who had volunteered for the bioelectrical trials, and demonstrated that the energy charging the radioactive SAPA bions also existed in human beings. Raknes details: “When it came to human beings he found that the energy emitted would vary with the degree of free natural liveliness or with greater or lesser freedom from neurotic inhibitions. . . . In 1940, the year after he came to America, Reich discovered the same kind of energy in the atmosphere as well, and later he arrived at the conclusion that this energy was ubiquitous, and that one of its manifestations is that which the physicists have called *cosmic radiation*.”⁶⁷

With the discovery of orgone energy, Reich revised his ideas about bioelectricity, believing, in Strick’s words, that “the energy he was measuring was not electricity or

⁶⁵ Reich, *The Function of the Orgasm*, 382. Emphasis original.

⁶⁶ Ola Raknes, *Wilhelm Reich and Orgonomy: The Brilliant Psychiatrist and His Revolutionary Theory of Life Energy* (Princeton: American College of Orgonomy Press, 2004), 27.

⁶⁷ Raknes, *Wilhelm Reich and Orgonomy*, 30. Emphasis Original.

magnetism, but a new form of energy that was interchangeable with electricity and magnetism under the right conditions. . . . thus, he reasoned, what had manifested itself in the bioelectrical fluctuations of potential at the skin surface in earlier experiments . . . was orgone energy.”⁶⁸

After settling in Forest Hills, New York, in 1939, Reich began to carry out visual observations of orgone energy, as well as taking thermal and electroscopic measurements.⁶⁹ He would continue this work in Maine, where he settled permanently in 1950 and set up his own laboratory and observatory, called Orgonon. In an effort to capture or concentrate this energy, Reich invented numerous devices, including boxes with alternating layers of organic and metallic material, the orgone accumulator: “the organic layers of the accumulator attract and soak up orgone and the metallic layers draw it from the organic material and radiate it into the interior of the accumulator.”⁷⁰ Reich developed a variety of spin-offs of the orgone accumulator, including orgone blankets

⁶⁸ Strick, *Wilhelm Reich: Biologist*, 287. In his footnotes to the published version of the bioelectrical experiments, added in 1945, Reich made several corrections: “Since 1939, the existence of ‘biosexual contact’ has been confirmed and explained by the function of the contact of two fields of organotic excitation”; “intercourse involves excitation and contact, the *radiation* of body cells, and the *fusion* of two ‘organotic systems.’ In the interest of illustrating the *development* of orgone biophysics, the following, no longer valid, electrophysiological explanation of the sexual act, arrived at in 1935, will be given”; “The origin of the gradient of electrical potential is in itself a problem. The actual motor of that which is alive is orgone energy. We still do not know how or why electrical motor forces form at the membranes from the body orgone”; “the discovery of the orgone has enabled us to make an important correction . . . electrical processes can be stimuli or accompanying phenomenon of the life functions. They can change, disrupt, or promote the organotic life processes, *but they cannot bring them about*”; and, finally, “In reality, the processes involved are *organotic* and not electrical in nature. . . . Organotic excitation of the organism can be measured in hundreds of volts on the orgone-energy field meter. These hundreds of volts of organotic excitation show up on the oscillograph only as electrical millivolts. It is immediately apparent that measurements in the range of hundreds of volts and more are much more appropriate to the amount of excitation in a living organism than the millivolts of oscillographic measurement.” Reich, *Bioelectrical Investigation*. Emphasis original.

⁶⁹ Myron Sharaf, *Fury on Earth*, 277.

⁷⁰ Raknes, *Wilhelm Reich and Orgonomy*, 31.

and “pea shooters.” They were believed to have therapeutic value, including in the treatment of cancer. Later, Reich would become involved in a sort of cosmic battle, with the discovery of DOR (“deadly orgone”), an atmospheric energy that was suffocating and oppressive. Reich constructed “cloudbusters,” devices with long, metal tubes that could be aimed at the sky and were used to syphon off DOR or to make rain. Eventually, Reich would become interested in theories of extraterrestrial life. Reich’s work progressed rapidly during this time. Raknes notes: “During all the years of unceasing new discoveries Reich often met with reproach that he went from one subject to another, without taking time to enlarge upon any of them and without a sufficient array of facts to constitute a really scientific basis for his contentions.”⁷¹ We see in Reich’s career in America the fulfillment of his personality as an independent inventor.

Unfortunately, most were not convinced of the importance of Reich’s work or the effectiveness of his new devices. Reich experienced persecution shortly after emigrating to America when he was detained on Ellis Island in 1941 for his supposed communist affiliations.⁷² Things became difficult for Reich again when Mildred Brady, a freelance writer, published an article in the 26 May 1947 issue of *The New Republic* that accused

⁷¹ Raknes, *Wilhelm Reich and Orgonomy*, 37. I ultimately removed a discussion of whether Reich’s work constitutes pseudoscience, as orgone is not the focus of this dissertation. For more on this topic, see: A. Derksen, “The Seven Sins of Pseudo-Science,” *Journal for the General Philosophy of Science* 24.1 (1993): 17–42; Kendrick Frazier, *Science Under Siege: Defending Science, Exposing Pseudoscience* (Amherst, NY: Prometheus, 2009); Sven Ove Hansson, “Defining Pseudoscience and Science,” and James Ladyman, “Towards a Demarcation of Science from Pseudoscience,” in *Philosophy of Pseudoscience: Reconsidering the Demarcation Problem*, ed. Massimo Pigliucci and Maarten Boudry (Chicago: University of Chicago Press, 2013). See also the recent publication by Michael D. Gordin, *The Pseudoscience Wars: Immanuel Velikovsky and the Birth of the Modern Fringe* (Chicago: University of Chicago Press, 2012). On orgone specifically, Andy Kaiser, “Orgone Energy v. the Scientific Method,” *Skeptic* 15 (2009): 12–13.

⁷² Sharaf, *Fury on Earth*, 360.

Reich of being a swindler and a fraud.⁷³ These claims were picked up by the Food and Drug Administration (FDA), who launched an investigation into Reich's orgone accumulators. The FDA was unable to obtain "any affidavit from any accumulator user indicating dissatisfaction" and the investigation was temporarily paused.⁷⁴ The FDA resumed their work in August of 1951, and this time the investigation culminated in an injunction against the distribution of orgone accumulators in February 1954. Reich was taken to trial for a violation of the injunction in 1956. He lost the case, and was sentenced to two years in prison. His books were burned on FDA orders in 1956, and again in 1960. Reich died of a heart attack on 3 November 1957 in a federal penitentiary in Lewisburg, Pennsylvania.

Reich's Charismatic Personality

Reich is clearly a pioneer, one of the first major figures to initiate the transition of the orgasm into the lab. He is also undoubtedly a charismatic personality, gathering followers to him wherever he went. The following words, written about religious leaders, ring true for Reich: "once a prophet has established his cult an unbridgeable gulf opens up between the perception of his followers and the rest of society: to his followers, he is a saint, the lamb of God; to the rest of the world, he is a false prophet, a wolf in sheep's clothing, a demon of whom the most terrible things can be expected."⁷⁵ And why should

⁷³ This article was reprinted as: "The Strange Case of Wilhelm Reich," *Bulletin of the Menninger Clinic* 12.2 (1948): 61.

⁷⁴ Sharaf, *Fury on Earth*, 366.

⁷⁵ Anthony Stevens and John Price, *Prophets, Cults, and Madness* (London: Duckworth, 2000), 7.

we expect anything different when Mark Galanter notes that the major motivating factor that compels individuals to follow a charismatic leader is the relief of neurotic distress?⁷⁶ If this is true then we should not marvel at the fact that psychoanalysis itself has been described as a cult or that so many patients seem to fall in love with their analyst.⁷⁷ The relief of neurotic symptoms is, after all, the point of therapy.⁷⁸

The enthusiasm and energy Reich possessed went beyond that of many of his fellow analysts and continues to fascinate even today. Reich was always busy, typically confident, and never tired of pursuing his ideas in spite of hardship. His personality may very well be a reflection of his sense of priority and the intensity that accompanies the scientific vanguard. There are many fascinating aspects of Reich's work and his character. He was without a doubt a brilliant, charismatic intellectual. He was a self-fashioned crusader for "genital rights," for the freedom to orgasm. He had a very strong conviction that the orgasm was a physiological phenomenon essential to life, akin to micturition or breathing. He was acutely aware of the history of medicine, and he seemed sure that a paradigm change, a revolution, if you will, was hidden in the orgasm. Explaining the function of the orgasm would be, in his mind, a great feat in the history of medicine. It would be a major breakthrough that would turn the world on its head.

Unfortunately, Reich did not always pursue this conviction in the most fruitful of ways. He seemed to be tripped up by his own curiosity and constantly caught in the act of

⁷⁶ Marc Galanter, *Cults: Faith, Healing, and Coercion* (New York: Oxford University Press, 1989), 91.

⁷⁷ See S. Kool, "The Soother of Evil Pains: Asclepius and Freud," *Akroterion* 60 (2015): 13–32.

⁷⁸ For some, however, Reich's charisma goes beyond the charm of the analyst. Philip Rieff remarks that "Reich started on the Left, but kept going, until he found himself making the most radical rejection of politics—a rejection so radical that it must be called religious." See "The World of Wilhelm Reich," 50.

discovery. He was enthralled with his own intuition. Strick has argued that this is one of Reich's most valuable traits as a scientist.⁷⁹ Certainly, there are many positive things to be said about intuition. It provides the spark that often leads to great scientific discoveries. Yet, it can only take one so far. In order for an idea to be successful, intuition must be followed by careful and structured labor. Reich was simply too erratic. He pursued too many threads at the same time, unwilling to take the time needed to focus on a single issue.

Another characteristic of the intuition-driven Reich was a need for priority and unwillingness to engage in meaningful collaboration. Freud was Reich's idol, and Reich imitated Freud, whom he considered to be the discoverer of the unconscious and infantile sexuality. Reich's intuition that the orgasm held the secret to a scientific revolution may have been correct, but his desperate need to be the one that sparked that revolution was misguided. It led him to ignore others who were working in his field, and he later began to pursue increasingly eclectic experiments and inventions in an attempt at discovery.

Included in the archival material is a handwriting analysis conducted by a "Dr. R." of Denmark in 1936. Of Reich's personality, the doctor remarks:

In his actions, the writer can be controlled more by feelings than his eminent understanding. He has a passionate, impulsive temperament that can lead him to instability and unpredictability, although he has a clear will to be consistent. He lives and experiences everything with strong personal interest. Indifference is unknown to him, but so is serenity. He is observant and moved by every new impression. As a consequence of this, he is easily aroused or can be annoyed by comparatively small things and he is sometimes a little capricious and restless. He combines his passion with a sense of reality. He is capable of much enthusiasm and his passion is not impartial. But he also thinks objectively and when he first begins to examine and consider something, he can even be sober and dry. He has a spirit of enterprise, generosity, and farsightedness. His ability to

⁷⁹ Strick, *Wilhelm Reich: Biologist*.

concentrate is not as great as his urge to action. He lacks neither the will nor the capacity for conscientiousness and precision, but he does not possess these qualities in such quantity as to completely exclude the occasional volatility, imprudence, and absentmindedness, and yes, even indifferent negligence. . . . His opponents and enemies probably often find him presumptuous, pretentious, and despotic. . . . He is an easily aroused, agile person, charming when he is inclined, and unpleasantly abusive, critical, and polemical when he is irritated . . . It can be assumed with great certainty that he is not the type of person to be plagued with doubts about himself. . . . He is reluctant to correct himself, he does not believe that he needs to correct himself, and he does not let others try to correct him.⁸⁰

Whatever his failures, Reich was certainly successful in creating a legend for himself. He was able to preserve his name in history. One can hardly mention Reich's name without eliciting an emotional response. Academics and laymen vacillate between extreme adoration and utter hatred of Reich and all he stands for. His enigmatic personality has garnered him a place in our collective memory.

When poring through the archives, I was struck by how many letters Reich had received from both famous scientific and political figures, from Einstein to Trotsky to dozens of lesser known, but no less important historical figures.⁸¹ We find a letter sent by Claude Lévi-Strauss in 1943 requesting Reich provide him with counseling for "personal troubles" he has been fighting against for several years.⁸² There is even correspondence with Alfred Kinsey, who solicited a copy of Reich's *The Function of the Orgasm* on 27 January 1943 and subscribed to Reich's *Journal of Sex Economy and Orgone Research*. Kinsey included a copy of an article he wrote on homosexuality, and Reich concluded

⁸⁰ Wilhelm Reich Archives, Personal Box 2, Folder 4.

⁸¹ There is a folder in the archives marked as a correspondence from Helen Keller, but there is nothing inside. The letter may have been stolen. The file is located in Correspondence Box 18, 1955 A–Z.

⁸² Wilhelm Reich Archives, Correspondence Box 12, Claude Lévi-Strauss to Wilhelm Reich, 14 June 1943.

their exchange by noting, on 4 February, “that the question of homosexuality is far from being solved, especially as far as the physiological and biological background is concerned.”⁸³ There are letters of admiration, requests for experimental advice or materials, and bits of evidence for Reich’s theories from all over the world, from Australia to Japan to Mexico.

It is clear that Reich had many admirers, and his legacy continues to attract many today, from those who seriously study Reich’s writing to those who appear to have never read a lick of Reich’s own words but have become entranced by the idea of orgone and turned it into a form of mysticism. This cult of orgone began even while Reich was alive, with a misunderstanding of the orgone box as a sexual enhancement device that could promote bigger erections and longer orgasms.⁸⁴ At some point after Reich’s death orgone boxes were transformed into orgone crystals, something totally alien to Reich’s own research. These “crystals,” often triangular in shape and filled with metal shavings, are sold in New Age shops and online to promote healing and eliminate harmful radiation. With the proliferation of such trinkets, it is easy to see why some skeptics find it hard to separate fact from fiction.

Putting Things in Place: The Orgasm in Interwar Europe

A man who devoted his entire life to the orgasm, the goal of Reich’s work came to be the liberation of sexuality from repression and the establishment of orgasmic potency in both his patients and the masses. According to Reich:

⁸³ Wilhelm Reich Archives, Correspondence Box 12.

⁸⁴ Philip Rieff, “The World of Wilhelm Reich,” *Commentary* 38.3 (1964): 50.

The goal of enabling the patient to experience “orgastic genital gratification” shaped technique in the following way: all patients are disturbed in their genital function; this function must be made whole again. Hence, all pathological attitudes that obstruct the establishment of orgastic potency have to be sought out and destroyed. This became the task of technique for a generation of therapeutic analysts, for the obstructions to the genital function were legion and had an endless variety of forms. They were anchored in the social no less than in the psychic framework. Most importantly, as was later discovered, they were anchored in the body.⁸⁵

In chapter 1, I dealt with the psychic framework of the orgasm—how the orgasm was understood and interpreted within psychoanalysis. I detailed how Reich’s concept of orgasm emerged from a specific historical context. I discussed Freud’s views of sexuality and their similarities and differences to those of his sexological contemporaries. I also introduced the work of Sandor Ferenczi on genitality and the orgasm, arguing that Ferenczi takes precedence in developing a psychoanalytic theory of orgasm. In 1924 Ferenczi published his views on the matter, which he had been forming for over half a decade, and argued that healthy genitality was established through a balancing of the pregenital anal and urethral drives. Genitality was therefore not its own unique drive, but was composed of partial drives. This was intolerable to Reich, who believed that “the individual sexual drives do not function independently of one another but form as a liquid in connecting pipes. There can only be *one uniform sexual energy which seeks gratification in various erogenous zones and psychic ideas.*”⁸⁶ Reich argued that “such interpretations of genitality [as Ferenczi’s] constitute a denial of its biological

⁸⁵ Reich, *The Function of the Orgasm*, 123.

⁸⁶ Reich, *The Function of the Orgasm*, 131. Emphasis original.

function. . . . Only the genital apparatus is capable of bringing about orgasm and fully discharging biological energy. Preenitality can only increase vegetative tensions.”⁸⁷

Chapter 2 addressed the social dimension of orgasm—how suppression of sexuality relates to politics and to social weakness, and how Reich viewed orgasm as a panacea for a wide range of social ills and also a tool for revolution. This chapter explored Reich’s objections to Freud’s death drive as well as his expulsion from psychoanalysis. His disdain for the psychoanalytic establishment became increasingly pronounced following his radicalization in 1927. Although far from the only major psychoanalytic figure to be involved in Marxism, communism, or socialist movements, Reich was especially vocal about the role of sexuality in overcoming both capitalism and fascism. Despite his best efforts to reconcile the two disciplines, in a short period of time Reich managed to alienate himself from both the communists and the psychoanalytic establishment. The communists were disturbed by his prioritizing of sexuality, his activism in youth groups, and his accusations that sexual repression existed among the proletariat. Psychoanalysts were disturbed by what they considered to be a dangerous form of politics. As German scholars have shown, psychoanalysis as an institution was threatened by Hitler’s rise to power, and in the retrospective view of some scholars, the IPA capitulated to Nazi demands.⁸⁸ The expulsion of a highly charismatic individual who was stirring up the youth with dreams of sexual freedom while publishing works like *The*

⁸⁷ Reich, *The Function of the Orgasm*, 131-2.

⁸⁸ Reich makes a similar criticism: “The fact that such a hopeless and intellectually cowardly attitude was able to conquer the German empire . . . is to be ascribed in part to the social indifference of the pioneers of science,” *The Function of the Orgasm*, 28.

Mass Psychology of Fascism in 1933 could only help prove that psychoanalysis was not a threat to National Socialism.

In Reich's view, of course, he was entirely innocent of political motives, and was only arguing for a fact that clinical evidence demanded he recognize: the importance of a sex-positive upbringing for self-regulation and overall well-being:

I had not "provoked Freud," as some analysts accused me of doing. Nor were my arguments "dictated by Moscow," as others maintained. At that very time, I was using these same arguments to fight the economists in the socialist movement who, with their slogans about the "iron course of history" and the "economic factors," were alienating the very people whom they claimed to be liberating.⁸⁹

In the second chapter, I also introduced the experimental work of Siegfried Bernfeld and Sergei Feitelberg. Their libidometry represented the same attempt to turn the qualitative into the quantifiable as Reich's later bioelectrical experiments. However, Bernfeld not only ignored the role of the orgasm, he attempted to experimentally prove the existence of the death drive. For Bernfeld and Feitelberg the death drive was analogous to entropy. They attempted to prove the function of entropy in either reducing or increasing tension in a physical system. There is little information about the experiment's immediate reception, but it is generally rejected today as an attempt to draw parallels between incommensurable ideas. In addition to exploring the complicated relationship between Reich and Bernfeld, I suggested that this equating of the death drive with entropy was especially unpalatable to Reich's interpretation of dialectical materialism. Entropy was a concept rejected by Engels, from whom Reich drew much of his inspiration. In 1932, Bernfeld and Reich would publicly butt heads over the death

⁸⁹ Reich, *The Function of the Orgasm*, 195.

drive and its relationship to masochism in the pages of the *Internationale Zeitschrift für Psychoanalyse*. The damage done to Reich's reputation certainly did not help his cause, and further contributed to his expulsion from psychoanalysis in 1934.

Out of Reich's understanding of dialectical materialism emerged the "orgasm formula." It represented the pleasure-unpleasure principle, in which unpleasure is not a result of the death drive, a state of rest, but rather is a form of motion analogous to tension. Reich would explore the relationship between tension and relaxation in physiology, discovering that they mapped onto the motions of expansion and contraction. This launched Reich into a brief but intense period of investigation in physiology and biology, explored in the third chapter.

Reich was especially interested in the movement of amoebae. This was a current issue in physiology at the time, with purely physical explanations of surface or sheer tension dominating. Researchers had shown that amoebae could react to various physical stimuli; to Reich they seemed to function analogous to the nervous system, shrinking or contracting away from unpleasant stimuli and expanding or moving towards in response to pleasure. Reich had long been interested in taking

Freud's conception of the "sending out of libido" literally and seriously. Freud compared the stretching forth and pulling back of psychic interests to the stretching forth and pulling back of the pseudopodia in the amoeba. The stretching forth of sexual energy becomes visible in the erection of the male penis. Hence, the erection must be functionally identical with the stretching forth of the pseudopodia of the amoeba. On the other hand, erective impotence, in which the penis shrinks, as a result of anxiety, would be identical with the retraction of the pseudopodia. My friends were appalled at what they considered to be confused thinking. They laughed at me and I was hurt, but thirteen years later [in 1935] I succeeded in experimentally confirming this assumption.⁹⁰

⁹⁰ Reich, *The Function of the Orgasm*, 262.

Reich was at once both an extremely holistic thinker, capable of approaching the organism in its entirety, and a strict materialist. He saw a basic movement represented in unicellular objects, in organs and muscles and nerves, and in the organism as a whole. It was governed by purely physical, chemical, and (Reich would come to believe) electrical laws. The basic rules that governed an amoeba also governed the heart or the parasympathetic nervous system. It was expansion and contraction. They all pulsed, and that was the key to their being alive.⁹¹ The orgasm became that pulse. And Reich believed that it was bioelectricity that animated it.

In chapter 3, I addressed the body and the physiological dimension of orgasm. I detailed the sources of Reich's inspiration for the bioelectrical experiments, introducing the two thought experiments that Reich published before he began working in the lab. This chapter discussed how Reich thought about organisms, and how he came to believe that orgasm was an experience that characterized all living things. This would be a quite radical view today; we don't often think about animals having orgasms, let alone unicellular organisms. This chapter also provided the information necessary to understand the theories Reich's experiments were based on. It ended by discussing how bioelectricity was applied in psychophysiological research in the early twentieth century.

Chapter 4 dealt with the details of the bioelectrical experiments themselves, which were meant to provide objective truth for the validity of Reich's theory of orgasmic potency. It also presented a portrait of Reich as a scientist—although I argued that he is

⁹¹ On the importance of pulse and vibration in late nineteenth and early twentieth century thought see Robert Michael Brain, *The Pulse of Modernism: Physiological Aesthetics in Fin-de-siecle Europe* (Seattle: University of Washington Press, 2015); Anthony Enns and Shelley Trower, eds, *Vibratory Modernism* (Basingstoke: Palgrave Macmillan, 2013).

better understood as working in the mode of an independent inventor. In order to provide experimental evidence to support his clinical and theoretical claims, Reich began working with physiologists to develop and carry out his bioelectrical experiments, intended to prove his orgasm formula by demonstrating that pleasure produced a positive increase in charge at the surface of the skin and anxiety produced a decrease. In doing so, he would not only prove the underlying bioelectrical nature of sexuality, but also that anxiety was its pathological expression.

This chapter described the ins and outs of Reich's experimental physiological work, using archival material including original lab notebooks to reconstruct the timeline and details of the bioelectrical experiments. I make the argument that many of the problems that arise with thinking about Reich as an electrophysiologist can be easily explained if we shift frameworks to think about Reich as an independent inventor. This is an important new framework for thinking about Reich's scientific career. Not only does it make his research practices comprehensible, but it gives positive meaning to the way he incorporated, at times piecemeal, information from a wide range of scientific sources. No longer is Reich disdained as an amateur, because in the world of the independent inventor this is a characteristic to be praised.

Although I presented critique of the bioelectrical experiments published by one of Reich's lab assistants in the beginning of the conclusion, I want to end by drawing attention back to the positive contributions Reich made and his role in a larger history of sexuality and the orgasm. The bioelectrical experiments take place at a particularly dramatic moment in world history—in interwar Europe, just before our own modern period and a time of major upheaval—when the complexities of sexuality, politics, and

science were intimately interwoven. Reich is both embedded in these tangled relationships and also provides a way into better understanding them. In this way, his bioelectrical experiments are useful for cultural and intellectual history. However, they have something important to say to the history of sexuality as well.

Reich's bioelectrical experiments shed light on popular scientific thought concerning sexuality, and more specifically the orgasm, in the early twentieth century. In the long durée we see the orgasm transformed from an event that the ancients considered to be a necessity for successful human reproduction to a phenomenon that was completely decoupled from procreation—by the late nineteenth century, orgasm was relegated strictly to the realm of sexuality.⁹² Once separated from the biological imperative, a new function needed to be discovered for the orgasm. In particular for the female orgasm.

In the nineteenth and early twentieth century, indeed even today, orgasm typically remains coupled with ejaculation in the male (this is despite plenty of evidence, especially from tantric practice, that orgasm and ejaculation are two completely different phenomenon)⁹³ and continues to be a “mystery” for the female.⁹⁴ In this sense, Reich is quite unique and certainly somewhat out of tune with his own time when he assiduously argued in the first decades of the twentieth century that orgasm is the same for men and for women and demanded a strict distinction between orgasm and ejaculation in men. For

⁹² See Jonathan Margolis, *O: The Intimate History of the Orgasm* (London: Century, 2004), chapter 1.

⁹³ Pere Estupinya, *S=EX2: The Science of Sex* (Cham: Springer, 2016), “Having an Orgasm with the Power of the Mind,” 189–197.

⁹⁴ This is a common trope. See, for example, Hannah Frith, *Orgasmic Bodies* (New York: Palgrave MacMillan, 2015), “Complicated Women, Straightforward Men,” 43–62.

Reich, the mistaken belief that ejaculation represents orgasm was the source of much sexual misery, causing men to believe that “fucking” is healthy or that sex with prostitutes or with many partners can ever be satisfactory on a psychological and physiological level. In some ways, women were the luckier ones because they had no confusion about orgasm. When they experienced it, they knew. Men, on the other hand, could live with the mistaken assumption that frequent ejaculation was indicative of orgasmic potency.

Unfortunately, women had a more difficult time ever achieving orgasm. Here, we find that little has changed from the early twentieth century to the present. Sexual repression is simply too much for women to bear, and female frigidity has been a medical concern now for centuries. However, it is from the model of the frigid woman that a widespread belief in the function of the orgasm as a mechanism of psychic regulation emerged. From the hysterical women who Charcot discovered were always suffering from sexual dissatisfaction to the many vaginal anesthetic women seen by the psychoanalysts, the idea coalesced in the late nineteenth century that orgasm could function as a cure for various psychic ailments. This was not a new idea, but it certainly did not rise to the level of accepted medical doctrine until sexual science emerged as its own distinct discipline, separate from obstetrics, gynecology, and urology and also distinct from the work of the dermatologist, who primarily dealt with the manifestations of sexually transmitted diseases, especially syphilis. (Indeed, some have suggested that

was the discovery of penicillin as an effective treatment for syphilis in 1943 that truly sparked the sexual revolution.⁹⁵)

For Reich, orgasm became much more than a regulator of an individual's emotional life. It was also a mechanism for releasing pent up physiological tension. With the muscular contractions accompanying orgasm the body made itself right. Here posture becomes an extremely important concept. As Sander Gilman shows in his recent monograph on the subject, posture has been a subject of importance in a wide range of disciplines, from religion to education to medicine, since ancient times.⁹⁶ However, posture took on new meanings in the interwar period. Specifically, the rigid, plumb line military body (endorsed by the Nazis as the ideal German body) came to be questioned by the avant-garde and political left.⁹⁷ Reich was heavily influenced by these new ideas about free and natural bodies, thanks in no small part to his relationship with the dancer Elsa Lindenberg, Reich's partner from 1932–39. Reich believed that modern man had fallen victim to a frigid pelvis and an overly tense physique, and it was only through orgasm that he could be freed from these physical restrictions that accumulated like armor throughout the body.

We see here that Reich was strongly influenced by his view of the natural. He was intellectually moved by Malinowski's work on the Trobriand islanders, and he saw in

⁹⁵ Andrew M. Francis, "The Wages of Sin: How the Discovery of Penicillin Reshaped Modern Sexuality," *Archives of Sexual Behavior* 42 (2014): 5–13.

⁹⁶ See Sander L. Gilman, "*Stand up Straight!*" *A History of Posture* (London: Reaktion, forthcoming).

⁹⁷ For more on this subject see Michael Hau, *The Cult of Health and Beauty in Germany: A Social History, 1890–1930* (Chicago: University of Chicago Press, 2003); and Karl Eric Toepfer, *Empire of Ecstasy: Nudity and Movement in German Body Culture, 1910–1935* (Berkeley: University of California Press, 1997).

their social and sexual lives, so different from what he experienced in Vienna, insight into what primitive man (by default more “natural” than modern man) must have experienced.⁹⁸ He came to view monogamy and the nuclear family as a horrible aberration, the very source of human sexual repression. He linked this view to his belief in Marxism, especially to the work of Engels.⁹⁹ He came to see Freud’s Oedipus complex not as an evolutionary legacy of the species that all humans must overcome but as a historically contrived neurosis meant to keep the masses so sexually disabled that they would be submissive to the civilizing process that culminated in capitalism. Orgasm thus became a revolutionary force, a prerequisite for creating free proletariat bodies that could build a new utopia.

For Reich then, we see orgasm functioning on three distinct levels: the social, the psychic, and the physical. And yet, despite its breadth, it was only an extremely normative and proscriptive form of sexuality that could lead to orgastic potency. There are so many judgments, the products of the culture in which Reich’s thought developed, about what is good, what is natural, and what is healthy. A major misconception about Reich is that he advocated for “orgiastic potency” (rather than “orgastic potency”¹⁰⁰)—

⁹⁸ Bronislaw Malinowski, *Sex and Repression in Savage Society* (New York: Harcourt Brace, 1927). See also Chris Manias, “Scholarly Visions of Prehistoric Sexuality, 1859–1900,” in *Sex, Knowledge, and Receptions of the Past*, ed. Kate Fisher and Rebecca Langlands (New York: Oxford University Press, 2015).

⁹⁹ Friedrich Engels, *The Origin of the Family, Private Property, and the State* (New York: International Publishers, 1942).

¹⁰⁰ The term “orgiastic potency” was first used by Mildred Brady in her smear attack against Reich, and it is widely reproduced now, most likely unwittingly. Orgastic potency is called “orgiastic potency” in Russel Jacoby, *Social Amnesia A Critique of Contemporary Psychology* (New Brunswick, NJ: Transaction, 1997), 93 and Margolis, *O: The Intimate History of Orgasm*. It is unfortunate that this material is reproduced as such, because it echoes the persecution Reich endured in Rangeley, when, for example, “On November 5, 1953, a Mr. Anderson, the town druggist at Rangeley, led a group of children to Orgonon, shouting, ‘Down

that he was a promoter of “free love” in all of its swinging sixties glory.¹⁰¹ In fact, while Reich believed that lifelong monogamy was detrimental, he saw healthy orgasms as taking place within stable, loving relationships. He denounced playboy antics, prostitution, one night stands, and he most certainly frowned upon orgies! Unfortunately, he also frowned upon homosexual acts, and even shows a disdain for heterosexual oral sex in some of his writings, believing these were based in the pregenital anal and oral drives, respectively. In this way he was very much a Freudian, as was discussed in chapter 1. Despite his disputes with the psychoanalytic establishment and his belief that orgasm was the only cure for neurosis, Reich was not as liberal as many of immediate sexological predecessors and contemporaries. This fact has been, for the most part, lost on all but the scholars of Reich. He broke ranks, however, with psychoanalysis as his belief in the inherent unhealthiness of the civilizing process led him down new roads.

As far as Reich’s biological and physiological approach is concerned, he is certainly a product of his times, as his budding dialectical materialist philosophy allowed him to approach the question of orgasm from a perspective that was simultaneously extremely holistic but also reductionist. Reich remains unique in the history of orgasm in that he attributed the phenomenon to all living creatures. Indeed, for Reich the orgasm is the life process itself. I have found no comparable ideology in the history of sexuality, and in this sense it is entirely correct to consider Reich to be an important pioneer, at least

with the Commies!’ and ‘Orgy, Orgy! Orgy!’ Jerome Greenfield, *Wilhelm Reich vs. the U.S.A.* (New York: W.W. Norton, 1974), 98. Thanks to Philip Bennett for this information.

¹⁰¹ Beginning when Reich was still alive, by the 1960s the orgone box was widely misunderstood to be a sexual enhancement device that promoted bigger erections and longer orgasms. See Rieff, “The World of Wilhelm Reich,” 50.

in a philosophical sense. Reich's medical philosophy was based in his understanding of colloid chemistry, a discipline that was totally eclipsed by molecular biology and is now relegated primarily to the field of plastics engineering. To Reich, colloid chemistry was the key to synthesizing a variety of popular scientific viewpoints still thriving in the early twentieth century. He saw genetics in a negative light, associating it with eugenics and with the extremes of Nazi science. It is of interest that Reich did not pursue the study of hormones, after an initial interest in the work of men like Steinach, believing instead that it was bioelectrical energy created by the movement of colloid particles that was responsible for regulating human behavior.¹⁰² He was interested primarily in the integration of the nervous system through bioelectrical energy, which could be interpreted as the result of ion balance in the body, specifically calcium and potassium. He was one of several thinkers of the interwar period who tried to develop a holistic biology based in physics and chemistry.¹⁰³

In light of Reich's interest in bioelectricity, it is worth noting that electroconvulsive therapy was just becoming popular in the 1930s.¹⁰⁴ However, most other therapies based on electrical stimulation, incredibly popular from the late nineteenth century, were on the wane in Europe by the end of World War I.¹⁰⁵ The decline of

¹⁰² This may be due to the association of hormones and heredity in interwar Vienna. Reich was also opposed to the political ideas of Tandler. See Cheryl A. Logan, *Hormones, Heredity, and Race: Spectacular Failure in Interwar Vienna* (New Brunswick, NJ: Rutgers University Press, 2013).

¹⁰³ Garland Allen, *Life Science in the Twentieth Century*, xix.

¹⁰⁴ Jonathan Sadowsky, *Electroconvulsive Therapy in America: The Anatomy of a Medical Controversy* (New York: Routledge: 2016).

¹⁰⁵ Sander L. Gilman, "Sigmund Freud, Electrotherapy, and the Voice," in *Diseases and Diagnoses: The Second Age of Biology* (New Brunswick, NJ: Transaction, 2010). Gilman refers to the period from the mid-to-late nineteenth century as the "second epoch of electrotherapy." On the popularity of electrical therapies for a wide range of ills, see my master's thesis: "'Love the Skin You're In': Hygienic Facial Culture Japan," A.M. thesis, Harvard University, 2011. Electricity was also incredibly popular in scientific

electrotherapy at this time was due, in part, to the accusation that Wagner-Jauregg had provoked suicide in war neurotics by treating them with electricity. Freud would testify in Jauregg's favor, and also determined that it was talk therapy, not electrical therapy, that was the best means of cure for the neuroses.¹⁰⁶ Reich never saw electricity as a possible form of cure, for Reich the cure had to come from within the individual and it had to be based on a lifestyle change that reinstituted healthy sexuality. At this time, there was for him no medical solution in the form of a magical pill or the use of a certain device, although later he would consider orgone energy to be a healing force.

His dialectical materialist viewpoint, along with negative experiences with the medical establishment during his childhood, led him to be wary of oversimplified approaches to healing that did not take into account social, psychological, and bodily factors. Unfortunately, the application of dialectical materialism in science remains difficult to grasp, even in case studies of its practice such as this one. Garland Allen simplifies the issue by asserting that holistic materialism *is* dialectical materialism in biology and physiology. Indeed, approaching dialectical materialism requires a holistic vision: "There is no simple, single, unambiguous definition of the dialectic. The logic of the approach, its own internal logic, does not allow for the reduction of complex ideas to facile, staid definitions. To grasp the dialectic, the student must examine it as a fluid

exhibitions for the general public from the late nineteenth to early twentieth century. See: Rikke Schmidt Kjaergaard, "Exhibitions, Museums and Scientific Gardens in Nineteenth-century Denmark," in *Popularizing Science and Technology in the European Periphery, 1800–2000*, ed. Faidra Papanelopoulou, Agustí Nieto-Galan, and Enrique Perdiguero (Farnham: Ashgate, 2009), 135–155.

¹⁰⁶ Gilman, "Sigmund Freud, Electrotherapy"

whole.”¹⁰⁷ Dialectical materialism is not reducible to the three laws we have discussed in this dissertation, but must be grasped in its entirety, in its functioning, “living” form.¹⁰⁸

The best way to do this is the case study, and Reich’s bioelectrical experiments add more knowledge and give a more complete picture of dialectical materialist psychophysiology in the interwar period. Although the subject is of greater interest in Chinese scholarship, perhaps within the history of science dialectical materialism will also move beyond the successes of Pavlov, Oparin and the failures of Lysenkoism and begin to develop a more nuanced picture of dialectical materialism as a distinct form of holism.¹⁰⁹

Reich was not just a materialist; he is also a realist when it came to understanding psychiatric disorders.¹¹⁰ For him, every emotional conflict has a real, material source,

¹⁰⁷ Randall H. McGuire, “The Dialectic–Marxism as a Theory of Relations,” in *A Marxist Archaeology* (San Diego: Academic Press, 1992), 92.

¹⁰⁸ This is true especially of Soviet philosophy and psychiatry: “Soviet psychiatrists were able to develop a sometimes surprisingly diverse range of approaches to the mind, all of which were able to cite classic texts by Lenin, Engels, or Stalin to support their positions. The philosophical claims found in dialectical-materialism had to be acknowledged, but they could also be used as a cultural and political resource to support different ends.” Benjamin Zajicek, “Scientific Psychiatry in Stalin’s Soviet Union: The Politics of Modern Medicine and the Struggle to Define ‘Pavlovian’ Psychiatry, 1939–1953,” PhD dissertation, University of Chicago, 2009, 234–235.

¹⁰⁹ Unfortunately, this seems infinitely complex, as Daniel Todes and N. Kementsov note, “It is difficult . . . to imagine any scientific discovery or line of investigation . . . that could not be interpreted or justified using the lexicon of dialectical materialism. Dialectical materialism proved notoriously amenable to varied usages.” See “Dialectical Materialism and Soviet Science in the 1920s and 1930s,” in *A History of Russian Thought*, ed. W.J. Leatherbarrow and D. Offord (New York: Cambridge University Press, 2010). It should be noted that Pavlov was extremely mechanistic in his approach, and is considered by some (e.g., Garland Allen), to belong to the school of mechanistic materialism. For more on Pavlov, see Daniel Philip Todes, *Ivan Pavlov: A Russian Life in Science* (Oxford: Oxford University Press, 2014). On Bernal: Brenda Swann and Francis Aprahamian, eds, *J.D. Bernal: A Life in Science and Politics* (London: Verso, 1999); on Oparin and Haldane: Bill Mesler, *A Brief History of Creation: Science and the Search for the Origin of Life* (New York: W.W. Norton, 2016), 146–171. On Lysenko, see Michael D. Gordin, “How Lysenkoism became Pseudoscience: Dobzhansky to Velikovsky,” *Journal of the History of Biology* 45 (2012): 443–468.

¹¹⁰ For a discussion of this topic in contemporary time, see: Peter Zachar, *A Metaphysics of Psychopathology* (Cambridge, MA: MIT Press, 2014), chapter 1. For more on the psychoanalytic approach, see Paolo Savoia, “Seeing and Hearing: Charcot, Freud and the Objectivity of Hysteria,” in *Objectivity in Science: New Perspectives from Science and Technology Studies*, ed. Flavia Padovani, Alan Richardson, and Jonathan Y. Tsou (New York: Springer, 2015), 123–144.

with its own history. The psychic, the social, and the body interact to produce psychiatric disorders that exist in reality, not just in the patient's head. This was part of his overall frustration. He believed he was seeing what we all saw but most of us refused to acknowledge. And he wondered why no one wanted to acknowledge what he was pointing out to them. (He was able to "see the elephant in the room that everyone else's psychic defenses prevented them from seeing," in Strick's words.¹¹¹) This had to be nothing other than the effects of a widespread sexual repression. He would famously attribute Hitler's rise to power to the sort of mysticism that this repression-based refusal to see engenders.¹¹² His work on fascism mirrors the work of members of the Frankfurt School.¹¹³

As Mitchell Ash has argued, science, and this includes psychoanalysis, is interdependent with politics. The two can never be separated, and they serve as resources, "cognitive, rhetorical or institutional," for one another.¹¹⁴ In chapter 2, I detailed how Reich's involvement with communism eventually led to his expulsion from the International Psychoanalytic Association and his exile in Norway. There were certainly many who shared Reich's enthusiasm for combining sexuality and politics, but Reich's

¹¹¹ Strick, *Wilhelm Reich: Biologist*, 57.

¹¹² Wilhelm Reich, *The Mass Psychology of Fascism*. See also: Alf Lüdtke, "Love of State—Affection for Authority: Politics of Mass Participation in Twentieth Century European Contexts," in *New Dangerous Liaisons: Discourses on Europe and Love in the Twentieth Century*, ed. Luisa Passerini, Lilian Ellena, and Alexander C.T. Geppert (New York: Beghahn, 2010), 38–73.

¹¹³ Especially Eric Fromm and Herbert Marcuse. See, Tyrus Miller, *Modernism and the Frankfurt School* (Edinburgh: Edinburgh University Press, 2014); and David Berry, ed., *Revisiting the Frankfurt School: Essays on Culture, Media, and Theory* (Burlington, VT: Ashgate, 2012).

¹¹⁴ Mitchell Ash, "Wissenschaft und Politik als Ressourcen für einander," cited in Sander L. Gilman, *Illness and Image: Case Studies in the Medical Humanities* (New Brunswick, NJ: Transaction, 2014). See also: Mitchell Ash, "Science and Politics: A History of Relations in the 20th Century," *Archiv für Sozialgeschichte* 50 (2010): 11–46.

particular combination of the two remains unique in the history of interwar Europe, and it proved to be particularly explosive. Reich's politics have been the subject of extensive study by Philip Bennet, who has a forthcoming book on the subject.¹¹⁵ Reich would eventually develop his own method of childrearing based on his political beliefs in the damaging effects of patriarchal and sex-negative education on the child. He saw the infant as the most free being in our society, the most healthy, and it was the role of parents and physicians to foster and learn from the healthy sexuality of the child.¹¹⁶

We might also note, reflecting on chapter 4, that Reich's work is representative of one of many "failed" attempts to move psychoanalysis into the lab. Reich's lab notebooks reveal his struggle to formulate his broad theories of the orgasm into convincing experimental hypotheses. We see him struggle with this in his experimental outlines; he is moving in the right direction, but he is still groping. Similarly, like Bernfeld, we see an over-estimation of the importance of the thought experiment. This may have been characteristic of psychophysiology as a whole at this time, or it may be a unique trademark of the stillborn discipline of experimental psychoanalysis. Observation and description trump rigorous experimental data as evidence for Reich at this time, and this is clear from his published experimental results.

¹¹⁵ Philip Bennett, *From Communism to Work Democracy: The Evolution of Wilhelm Reich's Social and Political Thought* (New York: Verso, forthcoming).

¹¹⁶ Wilhelm Reich, *Children of the Future: On the Prevention of Sexual Pathology* (New York: Farrar, Straus and Giroux, 1967). It should be noted that the fin-de-siècle represents a time of particularly heightened interest in childhood, especially in the period described as "adolescence." Reich's sexual politics focused heavily on the genital rights of adolescents. For more, see John Neubauer, *The Fin-de-Siècle Culture of Adolescence* (New Haven: Yale University Press, 1992).

Finally, it is interesting to note that anxiety is seen as the antithesis of sexuality. This is, of course, a product of Reich's psychoanalytic heritage.¹¹⁷ But it is also a nod towards more general cultural trends. Anxiety regarding masturbation, for example, became a topic of general interest in the interwar period.¹¹⁸ People were becoming more aware of the shame, now seen as pathological, associated with the sexual instinct. Masturbation, the question of homosexuality, and the mysteries of female sexuality were key medical questions at this time, and they were of great concern not just to practitioners but to the masses. Similarly, issues like access to contraceptives and abortions, adolescent sexuality, and monogamy were pressing. Reich took a very Freudian stance on homosexuality, but he wavered on the question of masturbation.

Generally speaking, we can say he saw masturbation as a pathway into understanding an individual's sexuality. Those who masturbated with anxiety (and all of his patients did) reproduced their sexual repression every time they masturbated. By delving into the details of a patient's auto-erotic experience, Reich uncovered evidence of castration anxiety and a sex-negative upbringing.¹¹⁹ Enabling the patient to masturbate without anxiety was an important first step towards establishing orgasmic potency. Reich's view of female sexuality continues to have a place in modern sexology. It is based very much on vaginal primacy, which Reich believed was present from birth, and is visible

¹¹⁷ For more on Freud's view on anxiety, including his original hydraulic model in which dammed-up sexual energy was transformed into anxiety, see Allan V. Horowitz, "The Freudian Revolution," in *Anxiety: A Short History* (Baltimore: John Hopkins University Press, 2013), 75–97.

¹¹⁸ Hera Cook, *The Long Sexual Revolution: English Women, Sex, and Contraception, 1800–1975* (New York: Oxford University Press, 2004).

¹¹⁹ Wilhelm Reich, "Über Spezifität der Onanieformen," *Internationale Zeitschrift für Psychoanalyse* 8 (1922): 38–40.

through posture.¹²⁰ Women who had only clitoral orgasms were more armored and their psychological suffering was made manifest through a malposition of the pelvis.

As for social issues surrounding sexuality, including questions of when adolescents should begin having sex, the ethicality and accessibility of contraceptives, and marital questions, Reich was of a left-leaning bent. However, it is worth noting that his understanding of the working classes was tainted by the judgment that they were in misery. Based on his clinical work, Reich did not see the lower classes as anything but prisoners of sexual repression. They had no space to procreate in private, they had no access to the contraception and abortions they desperately needed to stop having more children, and they were forced by these unwanted children and by social norms to suffer in bad marriages. Reich has very little positive to say about the working class, and his goal is not to provide better support for their children, but to allow them to enjoy sex separate from procreation. His critique of lifelong monogamy extended to all the classes.¹²¹ Those less inclined to see marriage as oppressive might even suggest he was extending his own desires into a blanket theory. While he praised monogamous relationships, he believed they should only be short term.

In his engagement with these issues, Reich numbers just one among many sexual scientists and reformers of the late nineteenth and early twentieth century. Theirs is a long history, and Reich is but one piece of a larger picture.¹²² He is also an excellent case

¹²⁰ See Aurelie Nicholas, Stuart Brody, Pascal De Sutter, and François De Carufel, "A Woman's History of Vaginal Orgasm is Discernible from Her Walk," *The Journal of Sexual Medicine* 5.9 (2008): 2119-2124.

¹²¹ See Wilhelm Reich, *The Invasion of Compulsory Sex-morality* (New York: Farrar, Straus and Giroux, 1971).

¹²² See, for example, Britta McEwen, *Sexual Knowledge: Feeling, Fact, and Social Reform in Vienna, 1900–1934* (New York: Berghahn, 2012); Atina Grossman, *Reforming Sex: The German Movement for Birth Control and Abortion Reform, 1920–1950* (New York: Oxford University Press, 1995); Alison M.

study of interwar Viennese intellectual life.¹²³ What makes him unique is his attempt to take orgasm into the lab, as Edward Ross Dickinson notes, “one of the most striking characteristics of sexology [at this time] was the extent to which it was unscientific, in the specific sense that it had little basis in experimentation or measurement.”¹²⁴ In this act, he became a true pioneer, and he should be placed in a timeline along with Kinsey and Masters and Johnson.¹²⁵ Like many scientists, Reich died without ever seeing his work come to fruition. There is perhaps an argument for the need to replicate some of the bioelectrical experiments.¹²⁶ Although we live in a changed society, perhaps one less sexually repressed and somehow transformed by experiments Reich carried out, there may still be resistance to this type of work. However, there is an evident interest in better understanding the physiology of orgasm and the dynamics of arousal. As this dissertation has shown, understandings of sexuality are extremely historically contingent, and have colored the interpretation of experimental data on the orgasm. It is unlikely that we will ever approach an understanding of the phenomenon that transcends its historical context.

Moore, “Androgyny, Perversion, and Social Evolution in Interwar Psychoanalytic Thought,” *Sex, Knowledge, and Receptions of the Past* (New York: Oxford University Press, 2015), 220–242; Anna Katharina Schaffner, *Modernism and Perversion: Sexual Deviance in Sexology and Literature, 1850–1930* (New York: Palgrave Macmillan, 2012).

¹²³ This is a well-explored topic. See: Deborah Holmes and Lisa Silverman, eds, *Interwar Vienna: Culture Between Tradition and Modernity* (Rochester, NY: Camden House, 2009).

¹²⁴ Edward Ross Dickinson, *Sex, Freedom, and Power in Imperial Germany, 1880–1914* (New York: Cambridge University Press, 2014), 247.

¹²⁵ For a post-Kinseyian view: Ira L. Reiss, *An Insider’s View of Sexual Science since Kinsey* (Lanham, MD: Rowman and Littlefield, 2006).

¹²⁶ Strick believes that there is a need to do so: “it could be of great interest to replicate these [bioelectrical] experiments and learn in what way the results can or cannot be accommodated to modern neurobiology, neurotransmitters, and other areas.” *Wilhelm Reich: Biologist*, 70.

Avenues for Future Research

In addition to presenting an important moment in the history of sexuality and the tangled web of personality, politics, and science from which Reich's theory of orgasm arose, the primary biographical goal of this dissertation is to contextualize Reich: to open up his life and work for real historical conversation, and to show how deeply embedded he was in the milieu of his time. Reich is very much a product of history, and his bioelectrical experiments serve as an excellent case study of a multidisciplinary approach to sexuality in interwar Europe. There is so much that is still left to be said about Reich's work, and there are so many areas of history on which Reich's work can shed light that historians will be busy for some time to come. By way of a final conclusion, I would like to return to the broader themes: the history of sexual science, of psychoanalysis, of dialectical materialism, and of the orgasm in order to make some closing remarks and draw attention to some fruitful avenues of future research.

The dissertation points to the fact that sexual science was becoming increasingly refined by the first half of the twentieth century, moving from a focus on literature to case studies to experimental data as a form of evidence. We see in the letter from Böhm to Reich in chapter 3, however, that as far as sex was considered, all sorts of data could be considered relevant. In their desire to unravel the secrets of sex, different theories could be posed on only the most tenuous of evidence. This would change with Kinsey and Masters and Johnson, who used much larger sample sizes and more targeted, sophisticated technologies to collect data on human sexuality. Unlike Reich, however, these more famous sex researchers did not necessarily have a comprehensive image of social reform that accompanied the data they presented. Therefore, much more can and

should be done to integrate Reich within a larger history of sexual science in the interwar period and to understand how his theories and his social activism compared to that of other famous figures.

In the history of psychoanalysis, we see a jettisoning of bodily therapies and a move away from attempts to ground the libido in biology accompanying the interwar period covered in this dissertation. Although I presented secondary sources that tend to present Freud and the psychoanalytic establishment as weak in the face of fascism, it should be remembered that science aims to be apolitical, even though this can never be accomplished. Psychoanalysis remains a discipline in which personal rivalries and animosity continue to be rather intense. Just as with sexology, there is much work to be done in familiarizing historians and the public with the important analysts of the interwar period, including Bernfeld, Fenichel, and Rank. Historians of psychoanalysis appear quite aware of this and are rehabilitating figures like Ferenczi and examining the contested relationships among the generation of analysts who studied under Freud. It is also desirable to look more closely at Reich's theories and how they diverged from his psychoanalytic peers. I have begun part of this task, but there is still much that can be done to clarify Reich's contributions to psychoanalysis and to get a better understanding of his interpretation of Freud and the particular meanings Freud's theories held for the larger psychoanalytic community at the time. This will shed light on important concepts like anxiety, actual neuroses, the death drive, and so on.

To speak to dialectical materialist biology, we find here a field that has been somewhat neglected in the English literature on the history of science. Garland Allen has done the most to provide an overview of the philosophy, however he equates holistic

materialism with dialectical materialism, in essence doing away with any Marxist influence on its scientific expression. We may be in a position where there is both too much and too little material to compose a monograph on the subject, certainly an article on the subject of protoplasm as an object of dialectical materialist science would be possible. Such a work would require adequate knowledge of Marxism, and here we encounter some of the difficulty with Reich. One must be a specialist in so many distinct disciplines in order to evaluate his work. The answer to this problem is more collaborative efforts.

As far as the history of the orgasm is concerned, and especially this experiment as a key moment in that history, there is further research to be done by someone versed in electrophysiological methods. Otherwise, it will be difficult to evaluate the importance of Reich's work to physiology proper. Both Reich and his assistants were confident in their interpretations of the experimental data, and without knowing more about electrophysiology it is impossible to say if Reich was executing his experiment correctly. What can be said is that Reich was the vanguard of a larger movement that occurred around the middle of the twentieth century to bring the orgasm into the laboratory, and he held a very distinct and unique theoretical understanding of the orgasm.

I have already pointed out several possible areas of future research, but I would like to offer a few more suggestions. For example, Reich came to describe his scientific method not as dialectical materialism but rather as orgonomic functionalism. A clarification of his use of the concept of functionalism and an identification of its expression in the bioelectrical experiments, which saw functional equivalencies between libido and the autonomic nervous system and between the latter and protoplasm, would

be quite interesting. Beyond continued research on the bioelectrical experiments, it would also be extremely useful to have an biography of Reich that focuses on his economic situation. This would help us to understand how his theories may have been influenced by financial need prompted by marriage or divorce, the birth of a child, and his many moves across Europe and the United States. There are substantial financial records from his life in America, and it would be of interest to many to better understand how he funded his orgone research.

Finally, I would like to suggest that historians of science should be careful not to make the mistake of ignoring the contentious “orgone” in order to present a more palatable version of Reich. Reich ended his career in America and the archival material dealing with the latter half of his life is primarily in English. There is much to be understood about the orgone and Reich’s approach to cancer. As renewed interest in Reich has arisen in the United States so too is there a revival of interest in Reich in Europe. We can surely expect to see more about Reich’s psychoanalytic career, the bioelectrical experiments, and Reich’s bions in the future. With each published study we will improve in our knowledge not only of an incredibly gifted intellectual but also of this extraordinarily fruitful period in the history of science.

Appendix 1

Orgasm is intimately connected to theories of generation, and it became especially tied to the question of what determines whether a baby is male or female. Hippocrates endorsed a “two-seed theory” in which simultaneous orgasm was essential to conception, and this would be continued by Galen.¹ Aristotle is known to have suggested that orgasm may aid in conception, arguing that both male and female ejaculate are needed for an act of copulation to be productive. However, Aristotle’s knowledge of female ejaculation during orgasm has been put into question, and this idea may be erroneously attributed to him.² Furthermore, Aristotle separated ejaculation from orgasm, focusing more on the changes in uterine structure that took place during orgasm and arguing that orgasm produced a cupping action that drew sperm into the vagina.³ Although Aristotle saw the female genitals as essentially analogous (if imperfect) versions of the males, he located the material cause in reproduction in the male body.⁴ This tradition continued through the seventeenth century and was for the most part endorsed by William Harvey’s *Exercitationes de generatione animalium* (*Disputations Touching the Generation of Animals*) published in 1651. However, he saw the female as responsible for conception, and suggested that the uterus functioned like a brain, and it was excited by coitus and conjured up either a male or a female.⁵ When the spermatozoa was discovered in 1677 by Antoni van Leeuwenhoek, sex continued to be

¹ For both, the male seed was the most powerful. In fact, Hippocrates’s version was closer to a one-seed model in which the man provided the seed and the woman provided the soil for that seed to grow. See Adrian Thatcher, *Redeeming Gender* (New York: Oxford University Press, 2016), “Two Seeds, One Sex?”

² Joanna B. Korda, Sue W. Goldstein, and Frank Sommer, “Sexual Medicine History: The History of Female Ejaculation,” *The Journal of Sexual Medicine* 7 (2010): 1965–75.

³ Blackledge, *The Story of V*, 254.

⁴ This is discussed in Thomas Laqueur, *Making Sex: Body and Gender from the Greeks to Freud* (Cambridge, MA: Harvard University Press, 1990), 144. However, it is refuted by Priscilla Sakezles, “Feminism and Aristotle,” *Apeiron* 32 (1999): 67–74. Sakezles ascribes to Aristotle a belief that the female

⁵ The uterus possessed an appetitus. Frank R. Lillie, “The History of the Fertilization Problem,” *Science* 43 (1916): 40.

discussed in terms of desire, and the uterus remained the desiring organ; since man was ‘the more perfect animal’ he was therefore the only natural object of longing. The image of the child was formed by the intensity of a female’s desire, and the man added the formative faculty.

A change occurred at the end of the eighteenth century, when Abbé Spallanzani carried out artificial insemination successfully for the first time. As Laqueur describes in his famous essay on the subject, the late eighteenth century also witnessed a decoupling of female orgasm and generation.⁶ This may be due in part to the rise of spermatist theories prompted by Spallanzani’s work. Regardless of the cause, with this dissociation physiologists lost interest in the phenomenon: “orgasm became simply a feeling, albeit an enormously charged one, whose existence was a matter for empirical inquiry or armchair philosophizing.”⁷ Sexuality was opened up to learned males, as opposed to women, midwives, and medical men, and “population theorists, political economists, and philanthropists began taking a special interest in reproduction for the first time.”⁸ By the nineteenth century sex and reproduction were discussed in a wide range of scientific disciplines with a matter of fact certainty that was unprecedented in earlier

⁶ Thomas Laqueur, “Orgasm, Generation, and the Politics of Reproductive Biology,” in *The Gender/Sexuality Reader: Culture, History, Political Economy*, ed. Roger N. Lancaster and Micaela di Leonardo (New York: Routledge, 1997), 119-243.

⁷ Laqueur, “Orgasm, Generation, and the Politics of Reproductive Biology,” 220. Lisa Cody posits: “Before the late seventeenth century, natural philosophers, political theorists, men of letters, and even many doctors found sex and reproduction of little relevance to their intellectual and professional interests.” Lisa Forman Cody, *Birthing the Nation: Sex, Science, and the Conception of Eighteenth-century Britons* (New York: Oxford University Press, 2005), 16. We can assume, therefore, an interest in sexuality spurred on by the discovery of the spermatozoa that rippled out to the rest of learned male society over the succeeding decades. This would be continued in the nineteenth century; for example, “the Dutch biologist Edouard Van Beneden, who discovered meiosis and described the biological mechanism of fertilization, was unable to identify a role for the clitoris, nor for the female orgasm, which were thus declared to be of no utility,” M.H. Colson, “Female Orgasm: Myths, Facts, and Controversies,” *Sexologies* 19 (2010): 9.

⁸ Cody, *Birthing the Nation*, 17.

times when all things surrounding sex were veiled in an aura of mystery and often addressable only by the church.

In the nineteenth century, a new paradigm of orgasm arose in the medical literature. For males, there was a rising concern about neurasthenia provoked by excessive masturbation or a drainage of semen (spermatorrhea).⁹ For females, lack of orgasm was an important element in hysteria. In a new paradigm, which played on the older belief that orgasm represented a warming that could transform bodily fluids into fungible, reproductively potent material, the female genitalia of the hysteric were thought to be excessively congested with fluid, and semen combined with orgasmic musculature spasms provided a way too sooth this disorder.¹⁰ When such relief was not provided, or was achieved through masturbation alone, it led to a host of nervous disorders including frigidity and hysteria. However, there was disagreement about how important the female orgasm was to cure: “Nineteenth-century experts, such as C. Bigelow, William Goodell, G. Kolischer, and Richard von Krafft-Ebing, agreed that intercourse was healthy for women but disagreed about whether women required orgasm to reap its full rewards.”¹¹ For others, like Jean-Martin Charcot, orgasm was the key, and it was curative all on its own. In her history of hysteria, Rachel Maines describes a wide variety of devices used by

⁹ See Sabine Frühstück, “Male Anxieties: Nerve Force, Nation, and the Power of Sexual Knowledge,” *Journal of the Royal Asiatic Society* 15 (2005): 71–88. On nervousness and neurasthenia more generally: Charles E. Rosenberg, “Body and Mind in Nineteenth-century Medicine: Some Clinical Origins of the Neurosis Construct,” *Bulletin of the History of Medicine* 63 (1989): 185–197. For Freud’s views on neurasthenia: Leendertf Groenedijk, “Masturbation and Neurasthenia: Freud and Stekel in Debate on the Harmful Effects of Autoerotism,” *Journal of Psychology and Human Sexuality* 9 (1997): 71–94. On spermatorrhea: Ellen Bayuk Rosenman, “Body Doubles: The Spermatorrhea Panic,” *Journal of the History of Sexuality* 12 (2003): 365–399.

¹⁰ Rachel Maines, *The Technology of Orgasm: “Hysteria,” The Vibrator, and Women’s Sexual Satisfaction* (1999), 54.

¹¹ Jane Gerhard, “Revisiting ‘The Myth of the Vaginal Orgasm’: The Female Orgasm n American Sexual Thought and Second Wave Feminism,” *Feminist Studies* 26.2 (2000): 452.

Charcot to induce orgasm in patients at the Salpêtrière, from hydrotherapy to shaking machines to electrotherapeutics.¹²

Recently, scholars have argued that Freud himself engaged in the use of genital stimulation and electrotherapy, and his theories regarding sexuality developed within this clinical context.¹³ Reich would continue the legacy of male doctors prescribing women orgasms for health, although he expanded this prescription to males as well.¹⁴ In what has been described as, “a surprisingly modern conception of orgasm and the sexual function,”¹⁵ a well-regulated sex life became a prophylaxis for neurosis:

Orgasm, and how it was linked to health, was Reich’s lifetime fascination. . . . Reich wrote of his belief that health, in particular psychological health, depends on what he called “orgastic potency,” that is, the degree to which a person can surrender to and experience orgasm, free of any inhibitions. He suggested that humans store emotions in their muscles, and that during orgasm, the muscular contraction and relaxation of orgasm release these emotions, keeping the person healthy. That is, orgasm regulates the emotional energy of the body and relieves sexual tensions that would otherwise be transformed into neurosis.¹⁶

Reich also suggested that orgasm has a role in upholding individual health as a mechanism for maintaining physiological homeostasis. It became a panacea for a wide variety of mental and physical ills. Although Reich would ultimately be persecuted for his faith in the

¹² Maines, *Technology of Orgasm*, chapter 4.

¹³ “We contend that the Freudian analytic couch, with its reclining, usually female patient, is an artifact not specifically of the practice of hypnosis, as Freud maintained, but also of massage and electrotherapy.” Karen E. Starr and Lewis Aron, “Women on the Couch: Genital Stimulation and the Birth of Psychoanalysis,” *Psychoanalytic Dialogues* 21 (2011): 374.

¹⁴ Reich was far from alone in this. The 1920s and 30s saw a rise in manuals for married couples that sought to increase marital bliss by helping couples achieve orgasm. Many of these manuals “aimed to correct faulty male sexual technique, with a view toward increasing female pleasure.” See: Jessamyn Neuhaus, “The Important of Being Orgasmic: Sexuality, Gender, and Marital Sex Manuals in the United States, 1920-1963,” *Journal of the History of Sexuality* 9.4 (2000): 450.

¹⁵ Colson, “Female Orgasm,” 9.

¹⁶ Blackledge, *The Story of V*, 264.

healing power of the orgasm,¹⁷ belief in the power of orgasm to provide overall well-being is a widely accepted, if often unspoken assumption, today:

sex is good for you. Because sexual arousal and orgasm involve an interplay of several body systems, it's well known that sex improves our breathing and circulation, resulting in bright eyes, a facial glow and shiny hair. Sex can also improve cardiovascular conditioning, strength, flexibility and muscle tone, and has been known to relieve the symptoms of specific medical conditions, such as menstrual problems, osteoporosis and arthritis. Arousal and orgasm can also benefit our mental health. Because they cause the release of pleasure-inducing endorphins in the brain, they can relieve anxiety and depression, increase vitality and boost the immune system.¹⁸

Orgasm is becoming a subject of academic interest again. Beginning with Rachel Maines's controversial *The Technology of Orgasm*, a 1999 publication that deals with the treatment of female hysteria with genital massage, to the recent *Orgasm and the West*, to last year's *Orgasmic Bodies* by Hannah Frith.¹⁹

Maines's work focuses on the female orgasm, arguing that there has been a long history of promotion of an androcentric model of sexuality, and the history of hysteria is marked by attempts by males to obscure the fact that most women do not experience orgasm from penetration during coitus. Her study is more useful for what it says about the vibrator than what it says about hysteria. My own studies of Japan have confirmed that in the beginning of the twentieth century the vibrator became a major household device, advertised widely and globally

¹⁷ For more on Reich's persecution, readers should consult the work of Philip Bennett: "The Persecution of Dr. Wilhelm Reich by the Government of the United States," *International Forum of Psychoanalysis* 19 (2010): 51–65; "Wilhelm Reich's Self-censorship After His Arrest as an Enemy Alien: The Chilling Effect of an Illegal Imprisonment," *International Journal of Psychoanalysis* 95 (2014): 341–364; "Wilhelm Reich, the FBI and the Norwegian Communist Party: The Consequences of an Unsubstantiated Rumor," *Psychoanalysis and History* 16 (2014): 95–114.

¹⁸ Barbara Keesling, "Beyond Orgasmatron," *Psychology Today* 32.6 (1999), 59.

¹⁹ Maines, *Technology of Orgasm*; Robert Muchembled, *Orgasm and the West: A History of Pleasure from the Sixteenth Century to the Present* (Malden, MA: Polity, 2008); Hannah Frith, *Orgasmic Bodies: The Orgasm in Contemporary Western Culture* (London: Palgrave MacMillan, 2015).

and professed to cure a number of ills, from wrinkly skin to nervousness (it was never explicitly pointed out that a vibrator could induce orgasm). Maines notes that vibrator advertising disappeared in the 1930s, only to reappear during the sexual revolution of the 1960s as an explicitly sexual device.

While fascinating as a study of sexual pleasure in the *longue durée*, the title of Robert Muchumbled's *Orgasm and the West* is a bit of a misnomer. The work is an argument against Foucault that locates the origin of sexual repression in the sixteenth century and proposes a historical cycle of repression and liberation that continues today. Although orgasm is the result of the culmination of sexual pleasure, it is almost completely absent from Muchumbled's work—so far in the background that it actually completely disappears.

Finally, Frith approaches the orgasm from a sociohistorical perspective, and deals primarily with contemporary issues, although she does provide a historical overview of the development of orgasm as a social and scientific construct in the twentieth century. Rather than attempt to elucidate what orgasm is, a task Frith notes “seems to become more elusive even as science tries to specify it more precisely,” the author explores the meaning of orgasm from a social scientific perspective.²⁰ Frith discusses how orgasm became an imperative of healthy heterosexual intercourse, leading to the inclusion of orgasmic disorders in the third edition of the *Diagnostic and Statistical Manual* (DSM), published in 1980.²¹ She goes on to discuss popular issues surrounding orgasm, including the belief that women have a more difficult time achieving orgasm, discussions about the timing of orgasms, and faking orgasm.

²⁰ Frith, *Orgasmic Bodies*, 1.

²¹ Frith, *Orgasmic Bodies*, 34.

Orgasm is also, as always, a topic of popular concern. Journalist Jonathan Margolis published a popular “history” of the orgasm in 2004, in which he puts forward several interesting hypotheses about the sex lives of prehistoric humans and provides practical information about male and female pleasure.²² Popular science writer Mary Roach also put forward a collection that features two chapters on orgasm, including “The Upsuck Chronicles: Does Orgasm Boost Fertility, and What Do Pigs Know About It?”²³ A recent publication by Sarah Barmak examines how modern technologies and new modes of social life are effecting the female orgasm through reportage, interviews, and personal reflection.²⁴ Finally, an important scientific publication was released in 2006. Aptly titled *The Science of Orgasm*, the book aims to provide a comprehensive physiological explanation of orgasm in the human male and female.²⁵ A recent publication, *S=EX²* continues this work from a more cultural bent, exploring sex from various disciplinary and social perspectives.²⁶

In spite of the interest in orgasm and several recent English-language publications on the subject, orgasm remains a poorly understood and ill-described phenomenon, approached from both biological and psychological standpoints, often with little to no synthesis between the two.²⁷

²² Margolis, *O: The Intimate History of the Orgasm*.

²³ Mary Roach, *Bonk: The Curious Coupling of Science and Sex* (New York: W.W. Norton, 2008).

²⁴ Sarah Barmak, *Closer: Notes from the Frontier of the Female Orgasm* (Toronto, ON: Coach House, 2016). When discussing recent works on orgasm, a documentary about companies fighting to win FDA approval for a drug to cure “female sexual dysfunction” should also be mentioned: Liz Canner, dir. *Orgasm, Inc.* (Norwich, VT: Astrea Media, 2011).

²⁵ Komisaruk, Flores, and Whipple, *The Science of Orgasm*.

²⁶ Pere Estupinyà, *S=EX²: The Science of Sex* (Cham: Springer, 2016). It should be noted that this review of the literature on orgasm takes into account English-language sources. There is undoubtedly a significant body of literature to be expected in foreign languages, especially German, French, and Scandinavian. Due to the constraints of time and language, I have not dealt with these here.

²⁷ Mah and Binik, “The Nature of Human Orgasm.”

Attempts to explain orgasm generally focus on females. For males, the phenomenon remains closely coupled with ejaculation and apparently needs no underlying rationale. For women, orgasm is often envisioned as some sort of strange evolutionary relic in need of explanation. Reich remains one of the earliest and most prominent thinkers to address the issue from a biopsychological standpoint, and to address the function of orgasm in both sexes.

Current physiological explanations of the pleasure produced by orgasm primarily hinge on the neurohormone oxytocin. In males, the feeling of orgasm is supposedly caused by waves of contractions of the pelvic striated muscles innervated by the pudendal nerve. In women, the vagus and hypogastric nerves play a role in providing sensation to the cervix and uterus. However, since men, like women, have reported experiencing orgasm without any mechanical stimulation of the genitals, this does not seem to be the whole story. Interestingly enough, little evidence has been found for central nervous system changes during orgasm, despite the reported changes of or blurring of consciousness associated with it.²⁸

Female orgasm continues to be a puzzle, especially for evolutionary biologists.²⁹ Just as males have nipples because females need them to breastfeed, so too do some biologists think that women have orgasms as a function of their evolutionary necessity for male reproductive success. The argument follows: “The reason for a clitoral site of orgasm is simple—and exactly comparable with the nonpuzzle of male nipples. The clitoris is a homologue of the penis—it is

²⁸ Raymond C. Rosen and J. Gayle Beck, *Patterns of Sexual Arousal: Psychophysiological Processes and Clinical Applications* (New York: Guilford Press, 1988), 156.

²⁹ Lloyd, *The Case of the Female Orgasm*.

the same organ, endowed with the same anatomical organization and capacity of response.”³⁰ Of course, not everyone believes that the clitoris is the proper site of female sexual response.

Helene Deutsch continued Freud’s famous theory of vaginal supremacy, seeing it as an ideal metaphor for a mature, passive womanhood. “In her work, the vagina symbolically brought together women’s reproductive and sexual identities, two aspects of women’s psychology that psychoanalysis sought to harmonize under the rubric of innate heterosexuality . . . Deutsch too cast the clitoris as the discarded lover in the sexual drama of healthy womanhood.”³¹ This idea was most famously “disproved” by the studies of Masters and Johnson, and confirmed in the Hite Report.³² Despite these findings, which certainly may be colored by the agenda of the female investigators, researchers influenced by the Reichian tradition continue to conduct experimental work that differentiates between healthy (vaginal) orgasm, and immature/unhealthy clitoral orgasms.³³ For feminists, clitoral orgasm puts control of sexuality firmly in the hands of women.³⁴ “If psychoanalytic experts had made the vagina into a synecdoche for mature and healthy femininity, feminists in the late 1960s sought to make the clitoris the marker of the

³⁰ Stephen Jay Gould, “Male Nipples and Clitoral Ripples,” *Columbia: A Journal of Literature and Art* 20 (1993): 86.

³¹ Jane Gerhard, “Revisiting ‘The Myth of the Vaginal Orgasm’: The Female Orgasm in American Sexual Thought and Second Wave Feminism,” *Feminist Studies* 26.2 (2000): 455.

³² Shere Hite, *The Hite Report: A Nationwide Study of Female Sexuality* (New York: Seven Stories Press, 2004).

³³ For example: Aurelie Nicholas, Stuart Brody, Pascal De Sutter, and François De Carufel, “A Woman’s History of Vaginal Orgasm is Discernible from Her Walk,” *The Journal of Sexual Medicine* 5.9 (2008): 2119-2124. Stuart Brody is a strict believer in the superiority of vaginal orgasm. See: S. Brody and R. M. Costa, “Vaginal Orgasm is Associated With Less Use of Immature Psychological Defense Mechanisms,” *Journal of Sexual Medicine* 5 (2008): 1167-76; S. Brody, “Vaginal Orgasm is Associated With Better Psychological Function,” *Sex Relationship Therapy* 22 (2007): 173-91.

³⁴ Shere Hite, “The Female Orgasm as Metaphor,” in *The Shere Hite Reader: New and Selected Writings on Sex, Globalization, and Private Life*. (New York: Seven Stories Press, 2006), 39-109.

liberated autonomous women.”³⁵ Current researchers deny the very existence of a vaginal orgasm, but for those who have experienced it (or believe they have experienced it), the proponents of purely clitoral orgasm are simply inhibited or unable to achieve vaginal orgasm. As has been pointed out, the existence of a thriving dildo industry makes it seem unlikely that orgasm is only clitoral.³⁶

The question of orgasm in children is also a valid one, although it does not receive much attention.³⁷ In his *Three Essays*, Freud described the capability of an infant to experience orgasm while breastfeeding, but quantitative data was lacking.³⁸ The existence of the oral orgasm that a suckling child experiences at the breast was later picked up by Ashley Montagu in support of breastfeeding and infant-mother skinship (what is sometimes termed “Kangaroo care” today, skinskip refers to the simple act of naked embrace between the infant and its mother).³⁹ Alizade also discusses this “primal orgasm” in terms of Didier Anzieu’s concept of the skin-ego.⁴⁰ She considers this suckling-induced orgasm to be the precursor of the individual’s future sexuality, establishing the psychosomatic movements that will characterize a future love-life. “In the

³⁵ Gerhard, “Revisiting ‘The Myth of the Vaginal Orgasm,’” 450.

³⁶ Komisaruk, et. al., *The Science of Orgasm*.

³⁷ For an interesting article on this topic, see: Diederik F. Janssen, “First Stirrings: Cultural Notes on Orgasm, Ejaculation, and Wet Dreams,” *Journal of Sex Research* 44.2 (2007): 122-134. For young girls, in whom orgasm is typically decoupled from ejaculation, it may be quite difficult for them to pinpoint whether or not they have even experienced orgasm. See: Hannah Frith, “‘Congrats!! You Had an Orgasm’: Constructing Orgasm on an Internet Discussion Board,” *Feminism and Psychology* 23.2 (2012): 252-260.

³⁸ Sigmund Freud, “Three Essays on Sexuality,” in vol. 7 of *The Standard Edition of the Complete Works of Sigmund Freud*, ed. James Strachey (London: Hogarth Press, 1953).

³⁹ Ashley Montagu, *Touching: The Human Significance of the Skin* (New York: Columbia University Press, 1971).

⁴⁰ A.M. Alizade, “El cuerpo erogeno femenino: sus tabues y sus orgasmos,” *Revista de Psicoanalisis* 46 (1989): 5. Didier Anzieu, *Le moi-peau* (Paris: Dunod, 1985). Anzieu’s important work has been recently re-released in English, *The Skin-ego*, trans. Naomi Segal (London: Karnac, 2016).

primal orgasm during lactation, three components enter into play which affect the incipient erogenous links: the orificial or deep component, the epidermic or surface component, and the component in which the interior of the body is involved.”⁴¹ The organization of these three components into a single sensual experience integrates the mind and body through perception. In Freudian terms, she describes it as, “a first form of enjoyment, with the participation of the death instinct fused with the life instinct.” Generally speaking, however, the orgasmic capability of children has been glossed over in favor of emphasizing childhood masturbation and promoting abstinence.

Reich is most notable for his precedence in attempting to measure orgasm, in a laboratory setting. Although Reich was unable to produce an orgasm in the lab, the task being too demanding of his test subjects, he is still an early pioneer in quantifying human sexual arousal. He connected his test subjects to a galvanometer that measured electrical activity and recorded it using an oscillograph. The lines of his oscillograph rendered sexual pleasure into a visual phenomenon, something that could be seen with the eyes and therefore objectively proven.⁴² Representing orgasm has always been difficult, and unlike ejaculation, there is always the question of fraud. Typically, orgasmic bliss is portrayed through certain facial expressions, but

⁴¹ Alizade, *Feminine Sensuality*.

⁴² For more on visual representation: Soraya de Chadarevian, "Graphical Method and Discipline: Self-Recording Instruments in 19th-Century Physiology," *Studies in History and Philosophy of Science* 24 (1993): 267-291; Frederic L. Holmes and Kathryn M. Olesko, "The Images of Precision: Helmholtz and the Graphical Method in Physiology," in *The Values of Precision*, ed. M. Norton Wise (Princeton: Princeton University Press, 1995), 198-221; Henning Schmidgen, "Pictures, Preparations, and Living Processes: The Production of Immediate Visual Perception (Anschauung) in Late-19th-Century Physiology," *Journal of the History of Biology* 37 (2004): 477-513.

these too are open to manipulation.⁴³ Reich's device would render pleasure visible for all. Like a lie detector test, it would provide accurate read-outs about arousal.⁴⁴

This notion that certain medical imaging technologies speak the body's truth is underwritten by the related notion that what the body speaks *is* truth. Through the mediation of various mechanical recording devices and medical imaging technologies, a mediation understood to interfere so little with the process it describes that it seems to operate in the register of transcription, the body is figured at once as both object and author of representation.⁴⁵

Prior to Reich's bioelectrical experiments, he had published several hand drawn graphs that illustrated the various stages of sexual arousal leading to orgasm. (It should be noted that these are nearly identical to, and much earlier than, Masters and Johnson's descriptions of human sexual response.) Graphic depictions of human sexual response like those that appear in Reich's publications were common in marital handbooks in the early twentieth century, and were reproduced by sexologists like Moll, with his curve of voluptuousness.⁴⁶ However, they are nothing more than representations of theory, and they do not reflect on any process that is being measured outside of the author's head. Reich's bioelectrical measurements were different in that they purported to quantify objective psychophysiological experiences. They would be repeated more famously in the electroencephalograms reprinted by Kinsey. There is a distinct de-eroticization in these images. As Jagose has argued: "The scientific authority of a depiction of

⁴³ Annemarie Jagose, "Face Off: Artistic and Medico-sexological Visualizations of Orgasm," in *Orgasmology* (Durham: Duke University Press, 2013), 135-174.

⁴⁴ For a history of the lie-detector, or the "electric psychometer," including its origins in the psychogalvanic skin response and Jung's contribution to its development, see: Geoffrey C. Bunn, *The Truth Machine: A Social History of the Lie Detector* (Baltimore: Johns Hopkins University Press, 2012), 94-115. Also, Ken Alder, *The Lie Detectors: The History of an American Obsession* (New York: Free Press, 2007).

⁴⁵ Jagose, "Face Off," 170.

⁴⁶ For more on marriage guides explicitly aimed at women, see: Wendy Hayden, "Physiology: Rewriting the Body and Sexual Desire," in *Evolutionary Rhetoric: Sex, Science, and Free Love in Nineteenth-century Feminism* (Carbondale: Southern Illinois University Press, 2013), 79-111.

orgasm via, say, a blood pressure chart or an fMRI image of the forebrain derives from not only its meticulous apprehension and materialization of minute and invisible bodily events but also its representational capture and transcription of orgasm in an adamantly non-arousing mode.”⁴⁷ She further maintains that “medico-sexological images such as the electrocardiograms, electromyograms, and radiograms included in *Human Sexual Response* do not so much depict bodies at orgasm as transcribe isolable aspects of that physiological event, which occur beyond the capacities of human observation, into a different representational order.”⁴⁸

In the late 1930s, shortly after Reich’s bioelectrical experiments, Kinsey began accumulating thousands of sex histories in order to gain data about orgasm.⁴⁹ The inspiration for pursuing this line of research, quite different from the field of etymology and collection in which he first made his mark, was the instruction of a so-called “marriage course” at Indiana University in 1938. Karen Winkler has noted that “Kinsey became a self-styled sex counselor to the students, who increasingly approached him for advice and factual information, spilling out their urgent concerns about their bodies, desperate to learn whether their fantasies and desires were normal.”⁵⁰ In her words, “Kinsey’s sex interview was a ‘talking cure’ for the subject, a two-person encounter that gave voice and narrative form to a lifetime of private sexual acts and desires.”⁵¹

⁴⁷ Jagose, “Face Off,” 171.

⁴⁸ Jagose, “Face Off,” 174.

⁴⁹ Joshua Kendall, “Alfred Kinsey: The Rabid Orgasm Counter,” in *America’s Obsessives: The Compulsive Energy That Built A Nation* (New York: Grand Central Publishing, 2013), 122.

⁵⁰ Karen Winkler, “Kinsey, Sex Research, and the Body of Knowledge: Let’s Talk About Sex,” *Women’s Studies Quarterly* 33.3/4 (2005): 289.

⁵¹ Winkler, “Kinsey, Sex Research, and the Body of Knowledge,” 287.

Kinsey's publication, *Sexual Behavior in the Human Male*, was a bestseller and a cultural sensation. Morantz comments: "Response to the Kinsey report testified more than anything else to the revolution in sexual mores that its text, charts, and statistical tables so laboriously documented. . . . He managed where others had failed to discuss sexual matters before a public still ignorant and uncomfortable with the subject. His own liberalism was grounded in the conviction that nothing human should be alien to the realm of science."⁵² Kinsey disavowed vaginal orgasm, claiming that the vagina had almost no nerve endings and was not a sensitive enough organ to be a center of erotic sensation. This controversial statement was somewhat overlooked when it was published. In Morantz's words, "the persistent influence of Freudian theory on definitions of female nature and the absence of an organized feminist movement in the early 1950s softened the impact of this most radical of Kinsey's findings."⁵³ It took Masters and Johnson to bring this point home. Kinsey's work was not very popular among psychoanalysts, who felt that it neglected the emotional dimensions of sexual behavior and failed to place it within a developmental framework.⁵⁴ Kinsey argued for biological normality based on statistics—any behavior that showed up frequently in his surveys was considered to be normal.

Unfortunately, despite its cultural significance, Kinsey was unable to avoid the same criticism and social ostracism experienced by Reich. The historian of science Frederick Churchill notes, "Kinsey was not only toasted for having broached with scientific objectivity the secret sexual lives of 12,000 Americans and for having unveiled in the process a complex world of tensions and hypocrisy, he was also castigated for having turned a deeply personal, even

⁵² Regina Markell Morantz, "The Scientist as Sex Crusader: Alfred C. Kinsey and American Culture," *American Quarterly* 29.5 (1977): 564

⁵³ Morantz, "The Scientist as Sex Crusader," 574.

⁵⁴ Morantz, "The Scientist as Sex Crusader," 578-9.

sacrosanct subject, into the object of a statistical and materialistic science.”⁵⁵ He would die in 1956, a year before Reich died in a Philadelphia penitentiary, and not long after he published his work on human response in females, a broken man and a victim of McCarthy era political suspicion.⁵⁶ “In the years between the publication of the Male Report and his premature death, Kinsey grew petrified of yellow journalism and the danger of misinterpretation.”⁵⁷ Like Reich, he died of cardiac failure. Unlike Reich, he left behind no larger vision for society:

Kinsey was no revolutionary. Though he wished that the world would be a better place because of his books, his vision required no fundamental social or economic changes. He understood neither the revolutionary nor the disintegrative potentialities inherent in sexual liberation. In the end, Kinsey’s hedonism has become a conservative force, and he himself the unwitting agent of an increasingly callous and wasteful society.⁵⁸

Only two years before Kinsey’s death, William Masters, in many ways the inheritor of Kinsey’s legacy, was granted approval to carry out his own clinical investigation of human sexuality at Washington University.⁵⁹ He and Virginia Johnson employed a wide variety of devices to measure human sexuality: “props and instruments included an electrocardiograph, an electroencephalograph for measuring blood-volume change in a penis, biochemical equipment, floodlights, and color movie cameras. Most crucial of all was a nine-inch long clear Lucite phallus with a ray of cold light emanating from its glans so that the camera lens housed inside the

⁵⁵ Frederick Churchill, “The Evolutionary Ethics of Alfred C. Kinsey,” *History and Philosophy of the Life Sciences* 24.3/4 (2002): 393.

⁵⁶ Kendall, “Alfred Kinsey,” 123.

⁵⁷ Morantz, “The Scientist as Sex Crusader,” 582.

⁵⁸ Morantz, “The Scientist as Sex Crusader,” 589.

⁵⁹ John Heidenry, *What Wild Ecstasy: The Rise and Fall of the Sexual Revolution* (New York: Simon and Schuster, 1997), 24.

shaft could venture deep inside a woman's vaginal wall to discover other secrets of human sexual response.”⁶⁰

Masters and Johnson documented sexual behavior during solitary and partnered activities in the laboratory, ultimately observing over 600 participants between 1957 and 1965. This work culminated in the documentation of a supposedly universal “human sexual response cycle” of excitement, plateau, orgasm, and resolution.⁶¹ Those familiar with Reich's work might notice the similarities between this response cycle and Reich's description and depiction of the typical phases of the sexual act, described briefly above. Said to last approximately five to twenty minutes, between foreplay followed by intromission and exhaustion at the completion of the sexual act, Reich found excitement gradually increased during the first phase of voluntary control of excitation, the second phase was involuntary muscle contractions and increase in excitation, the sudden and sharp incline to climax, culminating in orgasm, followed by the third phase, which represented a steep drop in excitation.⁶²

Presently, attempts are being made to pinpoint the area(s) of the brain responsible for orgasm using PET and fMRI.⁶³ There is also a wide range of new devices for measuring sexual arousal, including the penile plethysmograph, often used for phallometric assessments of male sex offenders.⁶⁴ Despite improvements in technology, attempts to measure arousal and orgasm

⁶⁰ Heidenry, *What Wild Ecstasy*, 27-28.

⁶¹ Frith, *Orgasmic Bodies*, 6.

⁶² Wilhelm Reich, *Genitality in the Theory and Therapy of Neurosis* (New York: Farrar, Straus and Giroux, 1980), 26.

⁶³ Komisaruk, *The Science of Orgasm*.

⁶⁴ Hannah L. Merdian and David T. Jones, “Phallometric Assessment of Sexual Arousal,” *International Perspectives on the Assessment and Treatment of Sexual Offenders: Theory, Practice, and Research*, ed. D.P. Boer, R. Eher, L.A. Craig, M.H. Miner, and F. Pfafflin (Chichester, UK: John Wiley and Sons, 2011), 141–169. On the problematic nature of such testing: Tom Waidzunus and Steven Epstein, “‘For Men Arousal is Orientation’: Bodily Truthing,

continue to be hindered by the subjective nature of sexual feeling. Research also seems to be overwhelmingly focused on the female orgasm. Male orgasm is as taken for granted as a natural part of reproduction as it was when Reich was working in the early twentieth century. The fractured nature of research on orgasm, and an apparent lack of global conversation, ensure that the issue will be shrouded in mystery for some time to come.

Technosexual Scripts, and the Materialization of Sexualities through the Phallometric Test,” *Social Studies of Science* 45 (2015): 187–213.

Appendix 2

6 June 1938

The continuing attacks from the people, who use the term "expert" to gain authority, requires a factual and also a personal clarification. [...]

I. Factual

1. The "physiologist" Hoffman explains my basic point of view of the opposition of the vagus and sympathetic and its corresponding sensations as nonsense. This shows that he has no idea of the research on the autonomic nervous system of the past 10-15 years. I did not invent this dichotomy of autonomic function, but only built on this known fact my orgasm-thesis and physiological experiments. The only thing I've really done here, is to prove the electric charge increase on the periphery by the vagus (the same as the sexual response). In the attachment you will find some quotes from today's best work in the world: Müller's *Life Nerves and Life Drive*, from which you can clearly see how untrained Hoffman is.

2. The nipples of the catatonic show, says Hoffman, no difference in potential with the rest of the skin. There is a purely technical response to this. When one firmly attaches electrodes in bell shape with about 2 cm diameter and does nothing else but measures erogenous points, there is certainly "no difference." I have accurately described this technique in my "Experimental Results..." One has to tickle insulated batting next to an electrode tip. Only then can it be determined whether the nipple with catatonia responds positively like a healthy person. If the nipple does not respond, there is still the question of whether the catatonia is or is not characterized by poor charge activity in the erogenous zones. Indeed, that is what has just been tested in Dikemark. In healthy subjects the erogenous zones of the charge can be at the same level as the rest of the skin or they can also be considerably higher.

3. The measured potentials at the skin are according to Hoffman only the expression of the potential difference between the lymph [sweat] on the skin and the electrode liquid. To write such a thing means the following: when one takes measurements in complicated experiments on human skin potential, they only determine the effects of the electrode liquid!!! Then why does one measure the skin potential at all? when one could determine it by a non-living membrane system. By contrast, it must be said: the heart wave, which one sees in the skin potentials, proves by itself that the heart action power at the center of the body comes through the fluid at the periphery and is there expressed. I want to draw particular attention to the fact that, in order to make invalid the meaningless objections Hoffman made at that time, I introduced an "indirect lead" (Page 30, "Experimental Results"). [Throughout the letter indirect was originally written as indifferent and then corrected] Through this derivation method only the electrical excitation of the tickling point is expressed, which lies on a very different place

than the resting electrode. Hoffman does not know this fact although it should interest him as an expert. Hoffman does not know that behind the membrane called "skin," millions of membranes inside the body act to form an intricate electrical relay system [originally membrane system]. Based on this fact, during his time in Berlin, Professor Kraus developed the "fluid theory of life."

The whole organism is therefore a membrane/electrolyte system. The electrical reaction of the body can therefore swing both ways in the nerves and in the body fluids ("Jonenvektion"). Obviously, it can also swing from the organ center [membrane center is crossed out] to the periphery and vice-versa.

Curve 28 and 29 are recorded under the same electrode-liquid conditions. Both with indirect leads. In the one case excitement increased, in the other case the same touch on the lips produces a falling curve. In the second case the kiss was unpleasurable. From this, the complete groundlessness of the "expert" argument can be seen.

4. The expert in physiology finds it particularly amusing that I conceive the orgasm as "electrical discharge" .. To this one can give a purely physiological response. Every muscle twitch is accompanied by electrical discharge. The orgasm is (See Müller page 673) convulsions not only of the genital muscles but also muscles in other parts of the body. So I have only summarized known physiological facts in this applied it in my sexual-economic theory.

In photo 21 on panel 6 you can see the rhythmic electrical discharges during ejaculation. It is the image of the experiment, which Hoffman, Löwenbach, and Schjelderup have attended, only without seeing what was in the image. In their presence was this single photo that exists taken. Hoffman's statement that this experiment brought no results is a lie.

5. Hoffman was trying to create an impression by saying that Einthoven's triangle "explains" the difference between the position of the electrocardiogram spikes. This is not correct. The Einthoven triangle is only a schematic representation of the various lead possibilities in the electrocardiogram and not a scientific explanation of the phenomena. This statement of Hoffman shows that he has no idea of the difference between a scientific description and explanation.

6. The psychological affects give only a reduction of skin potential, the so-called "psychogalvanic phenomenon" (Tarchanoff). It is correct that until now only reductions in skin potential were shown. This can be explained from the fact that so far neither the tickling phenomenon nor the erogenous sensation of the erogenous zones, and also not the vegetative streaming in orgasmic feeling have measured. Since the sexual affect was never measured, either positive charges have never been seen or it have been seen but not interpreted correctly. Positive charges, as they are rendered by the dozens in my essay, cannot be achieved artificially, therefore there are no "mistakes" that come into question here. The

vegetative sensation of pleasure is the only "sensation" that results in a steady organic wavy charge increase curve. That this is a possibility can only be explained based on a fact unknown to my opponents, that the organism is a complicated membrane electrolyte system, in which the electric energy can concentrate or spread anywhere.

7. Hoffman and Löwenbach claimed that a damp cloth displays the same phenomena. Figure 31, Table 10 in my publication shows the negative deflection when connecting two unpolarizable liquid electrodes through a damp cloth. This deflection was seen by Schjelderup, Löwenbach, and Hoffman at the much mentioned experimental evening in my apartment. A positive charge did not happen and was not recorded. Hoffman's incorrect assertion refers to the control experiments in Dikemark. Hoffman had the different electrode with which he measured, alternately placed on the palm of the catatonic or on the wet cloth was then tickled with cotton. In both cases the organic tickle fluctuations were shown. Either Löwenbach or I had overlooked that the indifferent O-electrode of the leg had not been removed. That is very easy to prove: Otherwise it would not have been possible that the measuring electrode could be alternately placed on the hand and cloth. Thus came into existence the famous "living cloth." I have repeated this after separation from Hoffman and Löwenbach dozens of times without a body connection and have not seen a tickle phenomenon or even a positive charge on a damp cloth. The experiment is easy to perform at any time. This fact is also published in my pamphlet, page 34. I declare in this respect the utterances of Hoffman, Löwenbach and Schjelderup uncritical, unproven and totally uncomprehending mistakes.

8. The pressure on the plexus and the change in skin potential above the navel. Löwenbach was in the first experiments the one who noticed the drop in potential above the navel during deep inhalation and pressing with the lead. At that time neither he nor I understood the phenomenon. I understood this phenomenon only much later, when I discovered the orgasm reflex and when I began the assessment of the role of breathing for the vegetative function of the abdominal ganglia. That I was able to provide such a context proves in itself that our outlook on the overall function of the autonomic apparatus is right and therefore we are the experts.

9. In my experiments after October of 1935, so after the departure of Löwenbach and Hoffman, I used the electrodes made by them, when I was not working with indirect leads developed by me. I learned the technique of operating the oscillograph from Löwenbach. The operation of the apparatus was confirmed by three different specialists.

II. Personal

1. Löwenbach found on his own in the beginning of the work the positive charge caused by pleasure -- like in the test case of Nic for example, and explained to me

the positive charge phenomena. He went to Dikemark for a further review of catatonia and even suggested a particular type of publication.

2. Hoffman related that Löwenbach, who I honored with a 260 monthly kroner, worked for a Rockefeller scholarship.

3. Both Hoffman and Löwenbach agreed with the initial question of the "basic antithesis."

4. Hoffman did not give up on the experiment, but I gave up on the connection with Löwenbach and Hoffman when I saw that they were not conducting the experiment with a correct viewpoint. See the accompanying letter to Schjelderup. [Could not find in the archival material.]

5. If Hoffman writes of a "circle of unlearned amateurs" that I have collected, then we need to declare emphatically that all those who work in our circle are experts.

6. Löwenbach, who is in Oslo for the time being, is a half-Jew and was discharged from the Kaiser-Wilhelm Institute in Berlin. He was paid by me for 6 months and showed a national socialist mindset, which clarifies this whole situation.

[...] Who does not understand our sexual theory also does not understand a single train of our physiological, clinical and biological work. I myself feel personally unable to respond to all the irrational objections given. Also because of censorship, I am silent, but it does not mean I overlook the objections. On the contrary I am going to collect all [the errors] as usual and always, and will in later publications explain them point by point, making things clear.

Signed Wilhelm Reich, 14 June 1938

Appendix 2

Works Cited by Reich in his *Bioelectrical Experiments*

I have attempted to present here a full bibliography of the works referenced in the published edition of the *Bioelectrical Experiments on Sexuality and Anxiety*. I have strived to make this as accurate as possible, but because these are reconstructed from clues, I cannot be sure that all entries are correct. I hope this will be of aid to future scholars.

Bernard, C. "Note sur la multiplicité des phénomènes qui résultent de la destruction de la partie cervicale du nerf grand sympathique." *Comptes rendus hebdomadaires des séances de l'Académie des sciences* (1853): 414–417.

Berthold, G. *Studien uber Protoplasmamechanik*. Leipzig: A. Felix, 1886.

Butschli, O. *Untersuchungen uber mikroskopische Schaume und das Protoplasma: Versuch und Beobachtungen zur Losung der Frage nach den physikalischen Bedingungen der Lebenserscheinungen*. Leipzig: W. Engelmann, 1892.

----- Translated by E.A. Minchin. *Investigations on Microscopic Foams and on Protoplasm: Experiments and Observations Directed Toward a Solution of the Question of the Physical Conditions of the Phenomena of Life*. London, A. and C. Black, 1894.

Davenport, C.B. *Experimental Morphology*. New York: Macmillan, 1908.

Dresel, Kurt. "Experimentelle Untersuchungen zur Anatomie und Physiologie des peripheren und zentralen vegetativen Nervensystems." *Zeitschrift für gesamte experimentelle Medizin* 37 (1923): 373–425.

Du Bois-Reymond, E. and K. Ludwig. *Zwei grosse Naturforscher des neunzehnten Jahrhunderts: ein Briefwechsel zwischen Emil du Bois-Reymond und Karl Ludwig*. Leipzig: Barth, 1927.

---- Edited by Paul F. Cranefield. Collected by Estelle Du-Bois Reymond. Translated by Sabine Lichner-Ayed. *Two Great Scientists of the Nineteenth-century: Correspondence of Emil Du-Bois Reymond and Carl Ludwig* (Baltimore: Johns Hopkins University Press, 1982).

Engelmann, T. "Ueber Reizung kontraktile Protoplasmas durch plotliche Beleuchtung." *Archiv für die gesamte Physiologie des Menschen und der Tiere* 19, no. 1 (1879): 1-7.

Freud, S. *Hemmung, Symptom und Angst*. Wien: Internationaler Psychoanalytischer Verlag, 1926.

- , Translated by Alix Strachey. *Inhibitions, Symptoms and Anxiety*. Second Impression. London: Hogarth Press, 1948.
- Goldstein, K. *The Organism: A Holistic Approach to Biology Derived from Pathological Data in Man*, with a forward by Oliver Sacks. New York: Zone Books, 2000.
- Greeley, A.W. "Experiments on the Physical Structure of the Protoplasm of Paramecium and its Relation to the Reactions of the Organism to Thermal, Chemical and Electrical Stimuli." *Biology Bulletin* 7 (1904): 3-32.
- Gruber, K. "Biologische und experimentelle Untersuchungen an Ameoba proteus." *Archiv fur Protistenkunde*. 25 (1912): 316-376.
- Harrington, N.R. and E. Learning. "The Reaction of Amoeba to Lights of Different Colors." *American Journal of Physiology* 3 (1899): 9-18.
- Hartmann, M. "Relative Sexualitat und ihre Bedeutung fur eine allgemeine Sexualitats- und allgemeine Befruchtungstheorie." *Die Naturwissenschaften* 19 (1931): 8-16; 31-37.
- . "Neue Ergebnisse zum Befruchtungs- und Sexualitatsproblem." *Die Naturwissenschaften* 20, no. 31 (1932): 567-573.
- Hofer, B. "Einfluss des Kerns auf das Protoplasmas." *Zeitschrift fur Naturwissenschaften* 63 (1890): 105-175.
- Jensen, P. *Zur Theorie der Protoplasmabewegung und uber die Auffassung der Protoplasmas als chemisches System*. Wiesbaden: J.F. Bergmann, 1905.
- Keller, P. "Elektrophysiologische Untersuchungen an der Gesunden und Erkrankten Haut. Die Bedeutung des Konzentrationseffektes." *Klinische Wochenschrift* 8, no. 2 (1929): 1081-1082.
- Kraus, F. *Die allgemeine und spezielle Pathologie der Person: klinische Syzgiologie*. Lepizig: Thieme, 1919.
- Kraus, F. and S. Zondek. "Kurze Vorläufige Mitteilung über Versuch Betreffend die Rolle der Elektrolyte beim Herzschlag, die Wirkung des Kochsalzes bei Verblutung und den sogenannten Tonusstrom." *Klinische Wochenschrift* 20 (1922): 996-997.
- Malinowski, B. *Sex and Repression in Savage Society*. Chicago: University of Chicago Press, 1927.
- Misch, W. and K. Misch-Frankl, "Die vegetative Genese der neurotischen Angst und ihre medikamentöse Beseitigung." *Nervenarzt* 5.8 (1932): 415-418.

- Muller, L.R. *Lebensnerven und lebenstriebe*. Berlin: J. Springer, 1931.
- Pohl, R.W. *Einführung in die Elektrizitätslehre*. Berlin: Springer, 1935.
- Quincke, G. "Ueber die physikalischen Eigenschaften dünner fester Lamellen." *Annalen der Physik* N.F. 35 (1888): 561-579.
- , "Ueber periodische Ausbreitung von Flüssigkeitsoberflächen und dadurch hervorgerufene Bewegungs-erscheinungen." *Annalen der Physik* N.F. 35 (1888): 580-641.
- Rein, Hermann, "Die Gleichstromleiter-Eigenschaften und elektromotorischen Kräfte der menschlichen Haut und ihre Auswertung zur Untersuchung von Funktionszuständen des Organes." *Zeitschrift für Biologie* 85 (1926): 195-247.
- , "Elektrophysiologie der Haut." In *Handbuch der Haut- und Geschlechtskrankheiten*. Edited by Josef Jadassohn. Berlin: Springer, 1929.
- Richter, C.P. "The Electrical Skin Resistance: Diurnal and Daily Variations in Psychopathic and in Normal Persons," *Archives of Neurology and Psychiatry* 19 (1928): 488.
- Rhumbler, L. "Physikalische Analyse von Lebenserscheinungen der Zelle: 1 Bewegung, Nahrungsaufnahme, Defäkation, Vacuolen-Pulsation und Gehäusebau bei lobosen Rhizopoden." *Archiv für Entwicklungsmechanik der Organismen* 7, no. 1 (1898): 103-198.
- , "Zur Theorie der Oberflächenkräfte der Amöben." *Zeitschrift für wissenschaftliche Zoologie* 83 (1905): 1-52.
- Stern, K. *Elektrophysiologie der Pflanzen*. Berlin: J. Springer, 1924.
- Straub, W. "Fortgesetzte Studien am Aplysienherzen (Dynamik, Kreislauf und dessen Innervation) nebst Bemerkungen zur vergleichenden Muskelphysiologie." *Archiv für die gesamte Physiologie des Menschen und der Tiere* 103, no. 9 (1904): 429-449.
- Tarchanoff, J. "Über die galvanischen Erscheinungen an der Haut des Menschen bei Reizung der Sinnesorgane und bei verschiedenen Formen der psychischen Tätigkeit." *Archiv für die gesamte Physiologie des Menschen und der Tiere* (1890): 46-55.
- Velten, W. "Ueber die Verbreitung der Protoplasma-bewegungen in Pflanzenreiche." *Botanische Zeitung* 36 (1872): 645-653.

Veraguth, O. *Das psychogalvanische Reflexphanomen*. Berlin: S. Karger,

Zondek, S. "Die Bedeutung des Antagonismus von Kalium und Calcium für die Physiologie und Pathologie." *Klinische Wochenschrift* 2 (1923): 382–385.

Zondek, S. "Zur Frage der Vagus- und Sympathikuswirkung." *Archiv für experimentelle Pathologie und Pharmakologie* 143 (1929): 192–208.

Archival Material

Archival research was conducted at two sites: the Countway Library of Medicine, in Boston, MA; and the Wilhelm Reich Museum in Rangeley, ME. Permission to access these archives was granted by the Wilhelm Reich Infant Trust Fund.

The Wilhelm Reich Archives are officially called “The Archives of the Orgone Institute.” They are referred to as the Wilhelm Reich Archives throughout the dissertation, following the work of James Strick.

Material from the following boxes are cited in this dissertation:

Correspondence Box 1

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Correspondence Box 5

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Correspondence Box 37

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Orgone Institute (abbreviated as OI throughout) Box 1

OI Box 2

OI Box 6

Manuscripts Box 8

Personal Box 1

Personal Box 2

Personal Box 5a

References

- Abraham, Georges. "The Psychodynamics of Orgasm." *International Journal of Psychoanalysis* 83 (2002): 325-338.
- Abraham, Karl. "Character-formation on the Genital Level of Libido-development." In vol. 1 of *Selected Papers*, 407-417. New York: Basic Books, 1953.
- Ackernknecht, E.H. "The History of the Discovery of the Vegetative (Autonomic) Nervous System." *Medical History* 18.1 (1974): 1-8.
- Afansayev, V.G. *Dialectical Materialism*. New York: International Publishers, 1987.
- Alder, Ken. *The Lie Detectors: The History of an American Obsession*. New York: Free Press, 2007.
- Alexander, Sarah C. *Victorian Literature and the Physics of the Imponderable*. New York: Routledge, 2015.
- Alizade, A.M. "El cuerpo erogeno femenino: sus tabues y sus orgasmos." *Revista de Psicoanalisis* 46 (1989): 643-655.
- . *Feminine Sensuality*. London: Karnac Books, 1999.
- Allen, Garland E. *Life Science in the Twentieth Century*. New York: Cambridge University Press, 1971.
- . "Dialectical Materialism in Modern Biology." *Science and Nature* 3 (1980): 43-57.
- . "T.H. Morgan, Mechanistic Materialism, and the Gene Concept, 1910–1940," *American Zoologist* 23 (1983): 829–843.

- . "The Changing Image of Biology in the Twentieth Century." In *The Changing Image of the Sciences*. Edited by Ida H. Stamhuis, 43–83. Boston: Kluwer Academic, 2002.
- Amidon, Kevin S. "Sex on the Brain: The Rise and Fall of German Sexual Science." *World Languages and Cultures Publications* (2008). Iowa State University Digital Repository, <http://lib.dr.iastate.edu/repository/>.
- Anderson, Warwick, Deborah Jenson, and Richard C. Keller, eds. *Unconscious Dominions: Psychoanalysis, Colonial Trauma, and Global Sovereignities*. Durham, NC: Duke University Press, 2011.
- Anoes, Randolph. "The Development of Psychoanalysis in Norway: An Historical Overview." *Scandinavian Psychoanalytical Review* 3 (1980): 69.
- Anzieu, Didier. *Le moi-peau*. Paris: Dunod, 1985.
- . *The Skin-ego*. Translated by Naomi Segal. London: Karnac, 2016.
- Arlow, Jacob A. "The Theory of Drives." *Readings in Psychoanalytic Psychology*. Edited by Morton Levitt. New York: Appleton Century Crofts, 1959.
- Ash, Mitchell G. "Making A Science of Mind: Styles of Reasoning in Sensory Physiology and Experimental Psychology." In *Gestalt Psychology in German Culture, 1890-1967: Holism and the Quest for Objectivity*. New York: Cambridge University Press, 1994.
- . "Science and Politics: A History of Relations in the 20th Century." *Archiv für Sozialgeschichte* 50 (2010): 11–46.
- Avello, José Jiménez. "Metapsychology in Ferenczi: Death Instinct or Death Passion?" *International Forum for Psychoanalysis* 7 (1998): 229-234.
- Baker, Elsworth. *Man in the Trap: The Causes of Blocked Sexual Energy*. New York: MacMillan, 1967.

- Baker, J. R. "The Cell-theory: A Restatement, History, and Critique, Part II." *The Quarterly Journal of Microscopical Science* 90 (1949), 87–108.
- Barker, W.J. "Female Sexuality." *Journal of the American Psychoanalytic Association* 16 (1968): 123-45.
- Barmak, Sarah. *Closer: Notes from the Frontier of the Female Orgasm*. Toronto, ON: Coach House, 2016.
- Bassiri, Nimi. "Freud and the Matter of the Brain: On the Rearrangements of Neuropsychanalysis," *Critical Inquiry* 40 (2013): 83–108.
- Bauer, Henry H. *Scientific Literacy and the Myth of the Scientific Method*. Urbana: University of Illinois Press, 1992.
- Bechhold, Heinrich. *Colloids in Biology and Medicine*. New York: D. Van Nostrand, 1919.
- Bechtel, William. "The Evolution of Our Understanding of the Cell: A Study in the Dynamics of Scientific Progress." *Studies in the History and Philosophy of Science* 15 (1984): 309–356.
- . *Discovering Cell Mechanisms: The Creation of Modern Cell Biology* (New York: Cambridge University Press, 2006).
- Becker, Robert O. and Gary Selden, *The Body Electric: Electromagnetism and the Foundation of Life*. New York: Quill, 1985.
- Bell, William Blair. *The Sex-complex: A Study of the Relationships of the Internal Secretions to the Female Characteristics and Functions in Health and Disease*, 2nd ed. New York: W. Wood, 1920.
- Bellak, Leopold and Rudolf Ekstein. "The Extension of Basic Scientific Laws to Psychoanalysis and Psychology." *Psychoanalytic Review* 33 (1946): 306-313.

- Beneviste, Daniel. "Siegfried Bernfeld and the Spirit of Psychoanalysis." *American Psychoanalytic Association 100th Annual Meeting*. San Francisco. June 8, 2011.
- Bennett, David. "Sexual Revolutions: Towards a Brief History, from the Fall of Man to the Present" *Sexual Revolutions: Psychoanalysis, History and the Father*. Edited by Gottfried Heuer. New York: Routledge, 2011.
- Bennett, Paula. "Clitirodectomy: Female Sexual Imagery and Feminist Psychoanalytic Theory." *Signs* 18.2 (1993): 235-260.
- Bennett, Philip. "The Persecution of Dr. Wilhelm Reich by the Government of the United States." *International Forum of Psychoanalysis* 19 (2010): 51–65.
- . "Wilhelm Reich's Early Writings on Work Democracy: A Theoretical Basis for Challenging Fascism Then and Now." *Capitalism Nature Socialism* 21 (2010): 53–73.
- . "Wilhelm Reich's Self-censorship After His Arrest as an Enemy Alien: The Chilling Effect of an Illegal Imprisonment." *International Journal of Psychoanalysis* 95 (2014): 341–364.
- . "Wilhelm Reich, the FBI and the Norwegian Communist Party: The Consequences of an Unsubstantiated Rumor." *Psychoanalysis and History* 16 (2014): 95–114.
- . *From Communism to Work Democracy: The Evolution of Wilhelm Reich's Social and Political Thought*. New York: Verso, forthcoming.
- Bergmann, Martin S. "Reflections on the History of Psychoanalysis." *Journal of the American Psychoanalytic Association* 41 (1993): 929–955.
- Bernard, Claude. *Experimental Medicine*. New Brunswick: Transaction, 1999.
- Bernfeld, Siegfried. "Die kommunistische Diskussion um die Psychoanalyse und Reichs 'Widerlegung der Todestriebhypothese,'" *Internationale Zeitschrift für Psychoanalyse* 18.3 (1932): 352-385.

- . *Psychoanalyse und Marxismus: Dokumentation e. Kontroverse*. Frankfurt am Main: Suhrkamp, 1970.
- and Sergei Feitelberg. "Deformation, Unterschiedsschwelle und Reizarbeit bei Druckreizen. Mit 14 Figuren im Text." *Archiv für die Gesamte Psychologie* 83.1 (1932): 197–260.
- . *Energie und Trieb: Psychoanalytische Studien zur Psychophysiologie*. Vienna: Internationaler Psychoanalytischer Verlag: 1930.
- . "The Principle of Entropy and the Death Instinct." *International Journal of Psychoanalysis* 12 (1931): 61-81.
- Berry, David, ed. *Revisiting the Frankfurt School: Essays on Culture, Media, and Theory*. Burlington, VT: Ashgate, 2012.
- Bernstein, H., F. A. Hopf, and R.E. Michod. "The Molecular Basis of the Evolution of Sex." *Advances in Genetics* 24 (1987): 323–370.
- Berthold, G. *Studien über Protoplasma-mechanik*. Leipzig: Arthur Felix, 1886.
- Binswanger, L. "On the Psychogalvanic Phenomenon in Association Experiments." In *Studies in Word-Association: Experiments in the Diagnosis of Psychopathological Conditions Carried Out at the Psychiatric Clinic of the University of Zurich, Under the Direction of C.G. Jung*. Edited by C.G. Jung, 446-531. New York: Moffat, Yard, and Company, 1919.
- Birken, Lawrence. *Consuming Desire: Sexual Science and the Emergence of a Culture of Abundance, 1871-1914*. Ithaca: Cornell University Press, 1988.
- Blackledge, Katherine. *The Story of V: A Natural History of Female Sexuality*. New Brunswick: Rutgers University Press, 2004.

- Blass, R.B. and B. Simon. "The Value of Historical Perspective to Contemporary Psychoanalysis: Freud's 'Seduction Hypothesis.'" *International Journal of Psychoanalysis* 75 (1994): 677–693.
- Blumenfeldt, Ernst "Beiträge zur Kaliausscheidung unter normalen und pathologischen Verhältnissen." *Zeitschrift für experimentelle Pathologie und Therapie* 12.3 (1913): 523-528.
- . "Die Chronaxie und Ihre Bedeutung für die Elektrodiagnostik." *Klinische Wochenschrift* 7.3 (1928): 97-100.
- Boadella, David. *Wilhelm Reich: The Evolution of His Work*. London: Vision, 1973.
- Bogue, Herman Robert. *The Theory and Application of Colloidal Behavior*, vol. 1. New York: McGraw-Hill, 1924.
- Böhm, Ewald, *Lehrbuch der Rorschach-Psychodiagnostik für Psychologen, Ärzte und Pädagogen*. Bern: H. Huber, 1957, c. 1951.
- . *Vergleichende Untersuchung der Kiefer und Zähne des prähistorischen Menschen auf der einen und des jetzt lebenden wilden und modernen Menschen auf der anderen Seite*. Doctoral Thesis, Friedrich-Wilhelms-Universität zu Berlin, 1921.
- Boller, Francois, Nanci C. Keefe, and Pierluigi Zoccolotti. "Luigi Galvani, Body Electricity, and the 'Galvanic Skin Response.'" *Neurology* 39 (1989): 868–870.
- Borck, Cornelius. "Electricity as a Medium of Psychic Life: Electrotechnological Adventures in Psychodiagnosis in Weimar Germany." *Science in Context* 14.4 (2001): 565-590.
- Bos, Jaap, David W. Park, and Petteri Pietikainen, "Strategic Self-Marginalization: The Case of Psychoanalysis." *Journal of the History of the Behavioral Sciences* 41.3 (2005): 207-224.
- Boucsein, Wolfram. *Electrodermal Activity*. 2nd ed. New York: Springer, 2012.

- Bourguignon, G. "Neuro-muscular and Vestibular Chronaxies in Multiple Sclerosis." *Sixth Annual Conference on Neurology*.
- . "Signes objectifs fournis par la chronaxie dans l'hysterie." *Les entretiens de Bichat* 29.6 (1948): 12-6.
- Brady, Mildred. "The Strange Case of Wilhelm Reich." *Bulletin of the Menninger Clinic* 12.2 (1948): 61.
- Brain, Robert Michael. "Representation on the Line: Graphic Recording Instruments and Scientific Modernism." In *From Energy to Information: Representation in Science and Technology, Art and Literature*. Edited by Bruce Clark and Linda Henderson. Stanford: Stanford University Press, 2002.
- . "How Edvard Munch and August Strindberg Contracted Protoplasmania: Memory, Synthesis and the Vibratory Organism in Fin-de-Siècle Europe." *Interdisciplinary Science Reviews* 35.1 (2010): 7-38.
- . "Materialising the Medium: Ectoplasm and the Quest for Supra-normal Biology in *Fin-de-Siècle* Science and Art." In *Vibratory Modernism*. Edited by Anthony Enns and Shelley Trower, 115–144. New York: Palgrave MacMillan, 2013.
- . *The Pulse of Modernism: Physiological Aesthetics in Fin-de-siecle Europe*. Seattle: University of Washington Press, 2015.
- Bresadola, Marco. *Luigi Galvani: Devozione, scienza e rivoluzione*. Bologna: Editrice, 2011.
- Brody, S. "Vaginal Orgasm is Associated With Better Psychological Function." *Sex Relationship Therapy* 22 (2007): 173-91.
- and R. M. Costa, "Vaginal Orgasm is Associated With Less Use of Immature Psychological Defense Mechanisms." *Journal of Sexual Medicine* 5 (2008): 1167-76.

- Bronner, Andrea, ed. *Vienna Psychoanalytic Society: The First 100 Years*. Vienna: Christian Brandstätter Verlag, 2008.
- Brooks, Chandler McC. and Horst Seller. "Early and Late Contributions to our Knowledge of the Autonomic Nervous System and its Control made by German Scientists." *Journal of the Autonomic Nervous System* 3 (1981): 105–119.
- Brown, Norman O. and Christopher Lasch, "Sexuality and Childhood." *Life Against Death: The Psychoanalytic Meaning of History*. Middletown: Wesleyan University Press, 2012.
- Brunner, José. *Freud and the Politics of Psychoanalysis*. Cambridge, MA: Blackwell, 1995.
- Bunn, Geoffrey C. *The Truth Machine: A Social History of the Lie Detector*. Baltimore: Johns Hopkins University Press, 2012.
- Burnham, John C. "The Medical Origins and Cultural Uses of Freud's Instinctual Drive Theory." *The Psychoanalytic Quarterly* 43 (1974): 193–217.
- Burr, H.S. and F.S.C. Northrop. "Experimental Findings Concerning the Electro-Dynamic Theory of Life and an Analysis of their Physical Meaning." (1937).
- Bütschli, Otto. *Studien über die ersten Entwicklungsvorgänge der Eizelle: Die Zelltheilung und die Conjugation der Infusorien*. Frankfurt am Main.: C. Winter, 1876.
- Buzin, V.N. "Psychoanalysis in the Soviet Union: On the History of a Defeat." *Russian Social Science Review* 36.6 (1995): 65-73.
- Byrne, J.H. and S.G. Schultz, *An Introduction to Membrane Transport and Bioelectricity*, 2nd ed. New York: Raven Press, 1994.
- Campenot, Robert B. *Animal Electricity: How We Learned that the Body and Brain are Electric Machines*. Cambridge, MA: Harvard University Press, 2016.

Canner, Liz, director. *Orgasm, Inc.* Norwich, VT: Astrea Media, 2011.

Carlson, W. Bernard. "The Competitive Advantages of the Inventor's Workshop: Lessons from the Career of Nikola Tesla, 1886-1905." *De l'atelier au laboratoire: Recherche et innovation dans l'industrie électrique, XIXe-XXe siècles*. Edited by Yves Bouvier. New York: P. Lang, 2011.

Chalker, Rebecca. *The Clitoral Truth: The Secret World at Your Fingertips*. New York: Seven Stories Press, 2010.

"Charles Benedict Davenport," *Science* 99.2579 (1944): 441.

Chesser, Eustace. *Reich and Sexual Freedom*. London: Vision Press, 1972.

Churchill, Frederick B. "The Guts of the Matter: Infusoria from Ehrenberg to Bütschli, 1838-1876." *Journal of the History of Biology* 22.2 (1989): 189-213.

----. "The Evolutionary Ethics of Alfred C. Kinsey." *History and Philosophy of the Life Sciences* 24.3/4 (2002): 391-411.

----. "Living With the Biogenetic Law." *From Embryology to Evo-Devo: A History of Developmental Evolution*. Edited by Manfred D. Laubichler and Jane Maienschein. Cambridge, Mass.: MIT Press, 2007.

----. "August Weismann Embraces the Protozoa." *Journal of the History of Biology* 43 (2010): 767-800.

----. *August Weismann: Development, Heredity, and Evolution*. Cambridge, MA: Harvard University Press, 2015.

Clarke, Adela E. and Joan H. Fujimura. *The Right Tools for the Job: At Work in Twentieth-century Life Sciences*. Princeton: Princeton University Press, 2014.

- Clarke, Edwin and L.S. Jacyna, "The Vegetative Nervous System," *Nineteenth-century Origins of Neuroscientific Concepts*. Edited by Edwin Clarke. Berkeley: University of California Press, 1987.
- Cocks, Geoffrey. "Repressing, Remembering, Working Through: German Psychiatry, Psychotherapy, Psychoanalysis, and the 'Missed Resistance' in the Third Reich." In *Resistance Against the Third Reich, 1933–1990*. Edited by Michael Geyer and John W. Boyer, 312–324. Chicago: University of Chicago Press: 1994.
- Cody, Lisa Forman. *Birthing the Nation: Sex, Science, and the Conception of Eighteenth-century Britons*. New York: Oxford University Press, 2005.
- Collett, John Peter. "The History of Electronics: From Vacuum Tubes to Transistors." *Science in the Twentieth Century*. Edited by John Krige and Dominique Pestre. Amsterdam: Harwood Academic Publishers, 1997.
- Colson, M.H. "Female Orgasm: Myths, Facts, and Controversies." *Sexologies* 19 (2010): 8-14.
- Connor, Steven. *The Book of Skin*. Ithica: Cornell University Press, 2004.
- Cook, Hera. *The Long Sexual Revolution: English Women, Sex, and Contraception, 1800–1975*. New York: Oxford University Press, 2004.
- Cornell, William F. "Stanger to Desire: Entering the Erotic Field," *Studies in Gender and Sexuality* 10 (2):
- Corrington, Robert S. *Wilhelm Reich: Psychoanalyst and Radical Naturalist*. New York: Farrar, Straus and Giroux, 2003.
- Cossidente, Alberto and Mario G. Sarti. "History and Fundamentals of Psychosomatic Dermatology." *Clinics in Dermatology* 2.4 (1984): 1-16.
- Cotti, Patricia. "Freud and the Sexual Drive Before 1905: From Hesitation to Adoption." *History of the Human Sciences* 21.3 (2008), 26-44.

----. "Sexuality and Psychoanalytic Aggrandisement: Freud's 1908 Theory of Culture." *History of Psychiatry* 22 (2010): 58–74.

Couteau, Rob. "Jungian Social Neglect." *Spring: A Journal of Archetype and Culture* (1988).

Cranefield, Paul F. "The Organic Physics of 1847 and the Biophysics of Today." *Journal of the History of Medicine and Allied Sciences* 12.10 (1957): 407-423.

----. "The Philosophical and Cultural Interests of the Biophysics Movement of 1847." *Journal of the History of Medicine and Allied Sciences* 21.1 (1966): 1–7.

----, ed. *Two Great Scientists of the Nineteenth Century: Correspondence of Emil Du Bois-Reymond and Carl Ludwig*. Baltimore: Johns Hopkins University Press, 1982.

Cullis, Roger. "Faith, Hope, and Clarity: The Inventor's Role." *Patents, Inventions, and the Dynamics of Innovation: A Multidisciplinary Study*. Northampton: Edward Elgar, 2007.

D'Agostino, Salvo. "German Electrodynamics in the 1870's." In *A History of the Ideas of Theoretical Physics: Essays on the Nineteenth and Twentieth Centuries*. Boston: Kluwer Academic, 2002.

Danto, Elizabeth Ann. "An Anxious Attachment: Letters from Sigmund Freud to Wilhelm Reich." *Contemporary Psychoanalysis* 47 (2011): 155–166.

----. *Freud's Free Clinics: Psychoanalysis and Social Justice, 1918-1938*. New York: Columbia University Press, 2005.

Darwin, Charles. *The Descent of Man and Selection in Relation to Sex*, vol. 1. New York: D. Appleton, 1872.

Davidson, Arnold I. "How to Do the History of Psychoanalysis: A Reading of Freud's 'Three Essays on the Theory of Sexuality.'" *Critical Inquiry* 13.2 (1987): 252-277.

- de Bruyn, PPH. "Theories of Amoeboid Movement." *Quarterly Review of Biology* 22.1 (1947): 1-24.
- de Chadarevian, Soraya. "Graphical Method and Discipline: Self-Recording Instruments in 19th-Century Physiology." *Studies in History and Philosophy of Science* 24 (1993): 267-291.
- DeFazio, Kimberly. "Red Vienna, Class, and the Common." In *Marxism and Urban Culture*. Edited by Benjamin Fraser, 159–87. New York: Lexington, 2014.
- de Klerk, Eddy and Harry Stroeken, "The Dutch Psychoanalytic Movement and the IPA," *100 Years of the IPA: The Centenary History of the International Psychoanalytical Association, 1910–2010: Evolution and Change*. Edited by Peter Loewenberg and Nellie L. Thompon. London: Karnac Books, 2011.
- DeMeo, James. *The Orgone Accumulator Handbook: Construction Plans, Experimental Use, and Protection Against Toxic Energy*. El Cerrito, CA: Natural Energy Works, 1989.
- Derksen, A.A. "The Seven Sins of Pseudo-Science." *Journal for the General Philosophy of Science* 24.1 (1993): 17–42.
- Dickinson, Edward Ross. *Sex, Freedom, and Power in Imperial Germany, 1880–1914*. New York: Cambridge University Press, 2014.
- Diercks, Christine. "The Vienna Psychoanalytic Polyclinic ('Ambulatorium'): Wilhelm Reich and the Technical Seminar." *Psychoanalysis and History* 4.1 (2002): 66-84.
- Dimen, Muriel. "Psychoanalysis and Sexuality." In *The Routledge Handbook of Psychoanalysis in the Social Sciences and Humanities*. Edited by Anthony Elliot and Jeffrey Prager. New York: Routledge, 2016.
- Dror, Otniel E. "Creating the Emotional Body: Confusion, Possibilities, and Knowledge." In *An Emotional History of the United States*. Edited by Peter N. Stearns and Jan Lewis, 173–194. New York: New York University Press, 1998.

Dröscher, Ariane. "Edmund B. Wilson's 'The Cell' and Cell Theory between 1896 and 1925." *History and Philosophy of the Life Sciences* 24.3/4 (2002): 357-389.

Drucker, Donna J. *The Classification of Sex: Alfred Kinsey and the Organization of Knowledge*. Pittsburgh: University of Pittsburgh Press, 2014.

Dyson, Freeman. *The Scientist as Rebel*. New York: New York Review Books, 2006.

Ede, Andrew. "Colloids and Quantification: The Ultracentrifuge and its Transformation of Colloid Chemistry." *Ambix* 32.1 (1996): 32-45.

-----, *The Rise and Decline of Colloid Science in North America, 1900-1935: The Neglected Dimension*. Burlington, VT: Ashgate, 2007.

Eeman P.D. and C. Berg. "Physiology of the Orgasm and of Psychoanalysis." *International Journal of Sexology* 3.2 (1949): 92-98.

Elder, R. Bruce. *A Body of Vision: Representations of the Body in Recent Film and Poetry*. Waterloo: Wilfrid Laurier University Press, 1997.

"Electric Disease Detector." *Time* 28.21, 11/23, 1936, 56.

Ellis, Havelock. *Analysis of the Sexual Impulse: Love and Pain, The Sexual Impulse in Women*. Philadelphia: F.A. Davis, 1903.

----, *Erotic Symbolism: The Mechanism of Detumescence, The Psychic State in Pregnancy*. Philadelphia: F.A. Davis, 1906.

Engels, Friedrich. *Dialectics of Nature*. New York: International Publishers, 1940.

----, *The Origin of the Family, Private Property, and the State*. New York: International Publishers, 1942.

Enns, Anthony and Shelley Trower, editors. *Vibratory Modernism*. Basingstoke: Palgrave Macmillan, 2013.

Erwin, Edward. *The Freud Encyclopedia: Theory, Therapy, and Culture*. New York: Routledge, 2002.

Esterson, Allen. "The Myth of Freud's Ostracism by the Medical Community in 1896-1905: Jeffrey Masson's Assault on Truth." *History of Psychology* 5.2 (2002): 115-134.

Estupinyà, Pere. $S=EX^2$: *The Science of Sex*. Cham: Springer, 2016.

Everett, D.H. "What are Colloids?" *Basic Principles of Colloid Science*. London: Royal Society of Chemistry, 1988.

Fallend, Karl. *Der "Fall" Wilhelm Reich: Beiträge zum Verhältnis von Psychoanalyse und Politik*. Giessen: Psychosozial-Verlag, 2002.

----. *Wilhelm Reich in Wien: Psychoanalyse und Politik*. Wein: Salzburg, 1988.

Falzeder, Ernst. ed. *The Complete Correspondence of Sigmund Freud and Karl Abraham, 1907–1925*. New York: Karnac, 2002.

Fenichel, Otto. "The Pregonal Antecedents of the Oedipus Complex." *International Journal of Psychoanalysis* 12 (1931): 141-166.

Fere, C. "Note sur des modification de la resistance electrique sous l'influence des excitations sensorielles et des emotions." *Comptes Rendus des Stances de la Societe de Biologie* 40 (1888): 217-219.

Ferenczi, Sandor. "Psycho-analysis of Sexual Habits." *International Journal of Psychoanalysis* 6 (1925).

----. *Thalassa: A Theory of Genitality*. Translated by Henry Alden Bunker. Albany: Psychoanalytic Quarterly, 1938.

----. "The Ontogenesis of the Interest in Money," *Sex in Psycho-analysis: Contributions to Psychoanalysis*. Translated by Ernest Jones. New York: Richard Badger, 1916.

----. "The Principle of Relaxation and Neocatharsis." *International Journal of Psychoanalysis* 11 (1930).

----. *Versuch einer Genitaltheorie*. Leipzig: Internationaler Psychoanalytischer Verlag, 1924.

Ferrario, CE and L. Coris, "Vitalism and Teleology in Kurt Goldstein's Organismic Approach." *Vitalism and the Scientific Image in Post-Enlightenment Life Science, 1800-2010*. Edited by Sebastian Normandin and Charles T. Wolfe. Dordrecht: Springer, 2013.

Ferro, Shaunacy. "FYI: Do Animals Have Orgasms?" *Popular Science*. 26 September 2013.

Feyerabend, Paul. *Against Method*. New ed. New York: Verso, 2010.

Fine, Reuben. *The Development of Freud's Thought: From the Beginnings (1886-1900) through Id Psychology (1900-1914) to Ego Psychology (1914-1939)*. New York: Jason Aronson, 1973.

Finger, Stanley "Holism and the Critics of Cortical Localization," *Origins of Neuroscience*. New York: Oxford University Press, 1994.

----. *The Shocking History of Electric Fishes: From Ancient Epochs to the Birth of Modern Neurophysiology*. New York: Oxford University Press, 2011.

Finkelstein, Gabriel. *Emil du Bois-Reymond: Neuroscience, Self, and Society in Nineteenth-Century Germany*. Cambridge, Mass.: MIT Press, 2013.

Fishbein, Morris. "The Quackery of the Abrams Box." In *The Medical Follies*, 99–118. New York: Boni and Liveright, 1925.

Flugel, J.C. "The Death Instinct, Homeostasis and Allied Concepts: Some Problems and Implications." *International Journal of Psychoanalysis* 34S (1953).

Fowler, W.S. *The Development of the Scientific Method*. New York: Macmillan, 1962.

Francis, Andrew M. "The Wages of Sin: How the Discovery of Penicillin Reshaped Modern Sexuality." *Archives of Sexual Behavior* 42 (2014): 5–13.

Frank, Claudia. "On the Reception of the Concept of the Death Drive in Germany: Expressing and Resisting an 'Evil Principle'?" *International Journal of Psychoanalysis* 96 (2015): 425-444.

Frankel, Hyman. "Marxism and Physics: A New Look." *Science and Society* 55.3 (1991): 336-347.

Frazier, Kendrick. *Science Under Siege: Defending Science, Exposing Pseudoscience*. Amherst, NY: Prometheus, 2009.

Freiberger, Eric D. "In the Beginning was the Act: Basic Instinct as the Cinematic Image of Freud's Death Drive." *Literature and Psychology* 46.4 (2000): 1-25

Freud, Sigmund. "Project for a Scientific Psychology (1895)." In Vol. 1 of *The Standard Edition of the Complete Psychological Works of Sigmund Freud*. Edited by James Strachey, 281–391. London: Hogarth Press, 1950.

----. "A Difficulty in the Path of Psycho-analysis." In Vol. 17 of *The Standard Edition of the Complete Works of Sigmund Freud*. Edited by James Strachey. London: Hogarth Press, 1964.

----. *A Phylogenetic Fantasy: Overview of the Transference Neuroses*. Edited by Ilse Grubrich-Simitis. Translated by Axel Hoffer and Peter T. Hoffer. Cambridge, Mass.: Belknap University Press, 1987.

----. "Beyond the Pleasure Principle." In Vol. 18 of *The Standard Edition of the Complete Works of Sigmund Freud*. Edited by James Strachey. London: Hogarth Press, 1971.

- . *Civilization and its Discontents*. Translated by James Strachey. New York: W.W. Norton, 1962.
- . "Introductory Lectures on Psycho-analysis: Part III General Theory of the Neuroses." In Vol. 16 of *The Standard Edition of the Complete Works of Sigmund Freud*. Edited by James Strachey. London: Hogarth Press, 1964.
- . "On Narcissism: An Introduction." In Vol. 14 of *The Standard Edition of the Complete Works of Sigmund Freud*. Edited by James Strachey. London: Hogarth Press, 1964.
- . *The Freud-Jung Letters: The Correspondence Between Sigmund Freud and C.G. Jung*. Edited by William McGuire. Princeton: Princeton University Press, 1994.
- . "The Ego and the Id." In Vol. 19 of *The Standard Edition of the Complete Works of Sigmund Freud*. Edited by James Strachey. London: Hogarth Press, 1971.
- . "Three Essays on Sexuality." In Vol. 7 of *The Standard Edition of the Complete Works of Sigmund Freud*. Edited by James Strachey. London: Hogarth Press, 1953.
- Frith, Hannah. "'Congrats!! You Had an Orgasm': Constructing Orgasm on an Internet Discussion Board." *Feminism and Psychology* 23.2 (2012): 252-260.
- . *Orgasmic Bodies: The Orgasm in Contemporary Western Culture*. London: Palgrave MacMillan, 2015.
- Frixione, Eugenio. "Sigmund Freud's Contribution to the History of the Neuronal Cytoskeleton." *Journal of the History of the Neurosciences* 12 (2003): 12-24.
- Frosh, Stephen. "Facing Political Truths." *Psychotherapy and Politics International* 5.1 (2007): 29-36.
- Frøshaug, H. and N.B. Johannessen, "The Seventieth Birthday of R. Gjessing." *The British Journal of Psychiatry* 104.436 (1958): 822.

- Frühstück, Sabine. "Male Anxieties: Nerve Force, Nation, and the Power of Sexual Knowledge." *Journal of the Royal Asiatic Society* 15 (2005): 71–88.
- Fuchs, Daniel. "Wilhelm Reich." *The Limits of Ferocity: Sexual Aggression and Modern Literary Rebellion*. Durham: Duke University Press, 2011.
- Galanter, Marc. *Cults: Faith, Healing, and Coercion*. New York: Oxford University Press, 1989.
- Gardner, Sheldon and Gwendolyn Stevens, *Red Vienna and the Golden Age of Psychology, 1918-1938*. New York: Praeger, 1992.
- Geison, Gerald L. "The Protoplasmic Theory of Life and the Vitalist-Mechanist Debate." *Isis* 60.3 (1969): 273-292.
- Gerhard, Jane "Revisiting 'The Myth of the Vaginal Orgasm': The Female Orgasm in American Sexual Thought and Second Wave Feminism." *Feminist Studies* 26.2 (2000): 449-476.
- Gilman, Sander L. "Sigmund Freud, Electrotherapy, and the Voice." In *Diseases and Diagnoses: The Second Age of Biology*. New Brunswick, NJ: Transaction, 2010.
- . *Illness and Image: Case Studies in the Medical Humanities*. New Brunswick, NJ: Transaction, 2014
- . "Stand up Straight!" *A History of Posture*. London: Reaktion, forthcoming.
- Gjessing, R. "Occupational Therapy at Dikemark." *Occupational Therapy and Rehabilitation* 26.5 (1947): 363-6.
- Goggin, James E. and Eileen Brockman Goggin. *Death of a "Jewish Science:" Psychoanalysis in the Third Reich*. West Lafayette: Purdue University Press, 2001.

- Goldstein, Kurt. "The Function of the Cerebellum from a Clinical Standpoint." *The Journal of Nervous and Mental Diseases* 83.1 (1936): 1-12.
- . *The Organism: A Holistic Approach to Biology Derived from Pathological Data in Man*. New York: Zone Books, 1996.
- Gordin, Michael D. "How Lysenkoism became Pseudoscience: Dobzhansky to Velikovsky." *Journal of the History of Biology* 45 (2012): 443–468.
- . *The Pseudoscience Wars: Immanuel Velikovsky and the Birth of the Modern Fringe*. Chicago: University of Chicago Press, 2012.
- Gould, Stephen Jay. "Freud's Phylogenetic Fantasy." *Natural History* 96.12 (1987): 10-19.
- . "Male Nipples and Clitoral Ripples." *Columbia: A Journal of Literature and Art* 20 (1993): 80-96.
- . *Ontogeny and Phylogeny*. Cambridge, Mass.: Belknap Press, 1977.
- Gower, Barry. *Scientific Method: An Historical and Philosophical Introduction*. New York: Routledge, 1997.
- Gray, George W. "The Electrical Basis of Life." *Harper's Magazine* November 1943.
- Greenberg, Daniel E. "Instinct and Narcissism in Freud's Later Theory: An Interpretation and Reformulation of 'Beyond the Pleasure Principle.'" *International Journal of Psychoanalysis* 71 (1990): 271-83.
- Greenfield, Jerome. *Wilhelm Reich vs. the U.S.A.* New York: W.W. Norton, 1974.
- Gregor, A. and W. Gorn. "Zur psychopathologischen und klinischen Bedeutung des psychogalvanischen Phänomens." *Zeitschrift für die gesamte Neurologie und Psychiatrie* 16 (1913): 1–104.

Gregory, Frederick. "Scientific versus Dialectical Materialism: A Clash of Ideologies in Nineteenth-century German Radicalism." *Isis* 68 (1977): 206–233.

Groenedijk, Leendertf. "Masturbation and Neurasthenia: Freud and Stekel in Debate on the Harmful Effects of Autoerotism." *Journal of Psychology and Human Sexuality* 9 (1997): 71–94.

Gronseth, Erik. "The Significance of Wilhelm Reich's Work for the Study of the Child and the Family." *Journal of Comparative Family Studies* 13.2 (1982): 143-153.

Grossbart, Ted. *Skin Deep: A Mind/Body Program for Healthy Skin*. New York: W. Morrow, 1986.

Grossman, Atina. *Reforming Sex: The German Movement for Birth Control and Abortion Reform, 1920–1950*. New York: Oxford University Press, 1995.

Gruber, Helmut. "Sexuality in 'Red Vienna': Socialist Party Conceptions and Programs and Working Class Life, 1920-34." *International Labor and Working-Class History* 31 (1987): 37-68.

Gutrecht, Jose A. "Sympathetic Skin Response." *Journal of Clinical Neurophysiology* 11 (1994): 519–524.

Guttman, S. et al., *The Concordance to the Standard Edition of the Complete Psychological Works of Sigmund Freud*. New York: International Universities Press, 1984.

Haas, L. "Symptom Formation and Character Formation – Contributions to Discussion of Prepublished Papers." *International Journal of Psychoanalysis* 45 (1964): 161-163.

----. "The Secondary Defensive Struggle Against the Symptom in Sexual Disturbances." *International Journal of Psychoanalysis* 49 (1968): 402-406.

Haldane, John Burdon Sanderson. *The Marxist Philosophy and the Sciences*. New York: Books for Libraries Press, 1969.

- Hall, Thomas S. "The Scientific Origins of the Protoplasm Problem." *Journal of the History of Ideas* 11 (1950): 339–356.
- Hansson, Sven Ove. "Defining Pseudoscience and Science." In *Philosophy of Pseudoscience: Reconsidering the Demarcation Problem*. Edited by Massimo Pigliucci and Maarten Boudry. Chicago: University of Chicago Press, 2013.
- "Harold Saxton Burr." *Yale Journal of Biological Medicine* 30.3 (1957): 161.
- Harman, Oren and Michael R. Dietrich. *Outsider Scientists: Routes to Innovation in Biology*. Chicago: University of Chicago Press, 2013.
- Harper, Robert S. "The First Psychological Laboratory." *Isis* 41.2 (1950): 158-161.
- Harrington, Anne. "Interwar 'German' Psychobiology: Between Nationalism and the Irrational," *Science in Context* 4.2 (1991): 429-447.
- . *Reenchanted Science: Holism in German Culture from Wilhelm II to Hitler*. Princeton: Princeton University Press, 1999.
- Harrington, Nathaniel Russell and Edward Leaming. "The Reaction of Amoeba to Lights of Different Colors." *American Journal of Physiology* (1899): 9-18.
- Harris, Benjamin and Adrian Brock, "Freudian Psychopolitics: The Rivalry of Wilhelm Reich and Otto Fenichel, 1930-1935." *Bulletin of the History of Medicine* 66.4 (1992): 578-612.
- Hartmann, Max. *Allgemeine Biologie: Eine Einführung in die Lehre vom Leben*. Jena: G. Fischer, 1933.
- . "Sex Problems in Algae, Fungi and Protozoa: A Critical Account Following the Review of R.A. Lewin." *American Naturalist* 139.849 (1955): 321.
- Hartocollis, Peter. "Origins and Evolution of the Oedipus Complex as Conceptualized by Freud." *Psychoanalytic Review* 92.3 (2005): 315–334.

- Hatfield, H. Stafford. *The Inventor and His World*, 2nd edition. Great Britain: Penguin Books, 1948.
- Hau, Michael. *The Cult of Health and Beauty in Germany: A Social History, 1890–1930*. Chicago: University of Chicago Press, 2003.
- Hauser, Ernst A. “The History of Colloid Science: In Memory of Wolfgang Ostwald.” *Journal of Chemical Education* 32 (1955): 2–9.
- Hayden, Wendy. “Physiology: Rewriting the Body and Sexual Desire.” In *Evolutionary Rhetoric: Sex, Science, and Free Love in Nineteenth-century Feminism*, 79–111. Carbondale: Southern Illinois University Press, 2013.
- Hegarty, Peter. *Gentlemen’s Disagreement: Alfred Kinsey, Lewis Terman, and the Sexual Politics of Smart Men*. Chicago: University of Chicago Press, 2013.
- Heidenry, John. *What Wild Ecstasy: The Rise and Fall of the Sexual Revolution*. New York: Simon and Schuster, 1997.
- Hein, Hilde “The Endurance of the Mechanism-Vitalism Controversy,” *Journal of the History of Biology* 5.1 (1972): 159-188.
- Heller, Michael Coster. “The Golden Age of Body Psychotherapy in Oslo,” *Body, Movement and Dance in Psychotherapy* 2.2 (2007): 5-94.
- Hendrickson, Michael R. “Exorcizing Schrödinger’s Ghost: Reflections on ‘What is Life?’ and Its Surprising Relevance to Cancer Biology.” In *What is Life?: The Intellectual Pertinence of Erwin Schrödinger*. Edited by Hans Ulrich. Stanford: Stanford University Press, 2011.
- Hensen, V. “Das Protoplasma als physikalisches System von Ludwig Rhumbler.” *Naturwissenschaften* 2.39 (1914): 893.

- Herr, Hedwig. "Die Syzygiologie von Friedrich Kraus." Ph.D. diss., Universität Münster, 1965.
- Hess, Tracey Lee. "Consciousness and Quantum Physics: Freud's Death Instinct and the Phenomenology of Corbin's Mundus Imaginalis Manifested as Complex Fractal in Epilepsy." PhD Dissertation, Pacifica Graduate Institute, 2004.
- Hess, Walter Rudolf. "The Reciprocal Relations Between Psychic and Vegetative Functions." *Biological Order and Brain Organization: Selected Works of W.R. Hess*. New York: Springer-Verlag, 1981.
- Heuer, Gottfried. "Psychoanalysis at the Crossroads." *International Journal of Psychoanalysis* 83 (2002): 1181–1184.
- Hiebert, Erwin N. "The Uses and Abuses of Thermodynamics in Religion." *Daedalus* 95.4 (1996): 1046-1080.
- Hille, Hermann. "A History of Colloids in Medicine." *Medical Life* 32 (1925): 419–453.
- Hirschfeld, Magnus and Ewald Bohm, *Sexualerziehung: Der Weg durch Natürlichkeit zur neuen Moral*. Berlin: Universitas, 1930.
- Hite, Shere. "The Female Orgasm as Metaphor." *The Shere Hite Reader: New and Selected Writings on Sex, Globalization, and Private Life*. New York: Seven Stories Press, 2006.
- . *The Hite Report: A Nationwide Study of Female Sexuality*. New York: Seven Stories Press, 2004.
- Hodgkin, A.L. "Chance and Design in Electrophysiology: An Informal Account of Certain Experiments on Nerve Carried out Between 1934 and 1952." *The Pursuit of Nature: Informal Essays on the History of Physiology*. New York: Cambridge University Press, 1977.
- Hoff, F. "Gedenktage: Ludwig Robert Müller zum 85. Geburtstag." *Deutsche Medizinische Wochenschrift* 80.16 (1955): 649.

Hoffer, Peter T. "Ferenczi's Collaboration with Rank: On Paradigm Shift and the Origins of Complementarity in Psychoanalysis." *American Journal of Psychoanalysis* 68 (2008): 130.

Hoffman, W. "Dr. Reich og hans elektro-fysiologi." *Arbeiderbladet*, 8 June 1938.

Holmes, Deborah and Lisa Silverman, eds. *Interwar Vienna: Culture Between Tradition and Modernity*. Rochester, NY: Camden House, 2009.

Holmes, Frederic L. and Kathryn M. Olesko. "The Images of Precision: Helmholtz and the Graphical Method in Physiology." In *The Values of Precision*, edited by M. Norton Wise, 198-221. Princeton: Princeton University Press, 1995.

---, Jürgen Renn, and Hans-Jörg Rheinberger, eds. *Reworking the Bench: Research Notebooks in the History of Science*. Boston: Kluwer, 2003.

Hopwood, Nick. *Haeckel's Embryos: Images, Evolution, and Fraud*. Chicago: University of Chicago Press, 2015.

Horowitz, Allan V. "The Freudian Revolution." In *Anxiety: A Short History*, 75–97. Baltimore: John Hopkins University Press, 2013.

Hristeva Galina and Philip W. Bennett, "Wilhelm Reich in Soviet Russia: Psychoanalysis, Marxism, and the Stalinist Reaction," *International Forum of Psychoanalysis* (2016): 1–16.

Ierodiakonou, Katerina and Sophia Roux, eds. *Thought Experiments in Methodological and Historical Contexts*. Boston: Brill, 2011.

"Is a Possum Neurotic?" *Time Magazine* 64.16, October 18, 1954.

J., E. Book Review, "Thalassa." *International Journal of Psycho-Analysis* 21 (1940): 100.

- Jablonski, Nina G. *Skin: A Natural History*. Berkeley: University of California Press, 2006.
- Jacobs, Natasha X. "From Unit to Unity: Protozoology, Cell Theory, and the New Concept of Life." *Journal of the History of Biology* 22.2 (1989): 215-242.
- Jacoby, Russell. *Social Amnesia: A Critique of Contemporary Psychology*. New Brunswick: Transaction, 1997.
- . *The Repression of Psychoanalysis: Otto Fenichel and the Political Freudians*. New York: Basic Books, 1983.
- Jagose, Annemarie. "Face Off: Artistic and Medico-sexological Visualizations of Orgasm." *Orgasmology*, 135-174. Durham: Duke University Press, 2013.
- Janssen, Diederik F. "First Stirrings: Cultural Notes on Orgasm, Ejaculation, and Wet Dreams." *Journal of Sex Research* 44.2 (2007): 122-134.
- Jayne, Cynthia. "Freud, Grafenberg, and the Neglected Vagina: Thoughts Concerning an Historical Omission in Sexology." *Journal of Sex Research* 20.2 (1984): 212-215.
- . "The Dark Continent Revisited: An Examination of the Freudian View of the Female Orgasm." *Psychoanalysis and Contemporary Thought* 3 (1980): 545-568.
- Jensen, Reimer and Henning Paikin. "On Psychoanalysis in Denmark." *Scandinavian Psychoanalytic Review* 3 (1980): 103-116.
- Jovanovic, Gordana. "Psychoanalysis, Marxism: Once and Again." *Psychotherapy and Politics International* 13.2 (2015): 129-140.
- Kaiser, Andy. "Orgone Energy v. the Scientific Method." *Skeptic* 15 (2009): 12-13.
- Kantorovich, Aharon. *Scientific Discovery: Logic and Tinkering*. Albany: State University of New York Press, 1993.

- Kapp, Reginald O. "Comments on Bernfeld and Feitelberg's 'The Principle of Entropy and the Death Instinct.'" *International Journal of Psychoanalysis* 12 (1931): 83.
- Keesling, Barbara. "Beyond Orgasmatron." *Psychology Today* 32.6 (1999): 59.
- Keiser, S. "On the Psychopathology of Orgasm." *Psychoanalytic Quarterly* 16 (1947): 378-90.
- Keller, Philipp. "Elektrophysiologische Untersuchungen an der Gesunden und Erkrankten Haut: Die Bedeutung des Konzentrationseffektes." *Klinische Wochenschrift* 8.23 (1929): 1081-82.
- Kendall, Joshua. "Alfred Kinsey: The Rabid Orgasm Counter." *America's Obsessives: The Compulsive Energy That Built A Nation*. New York: Grand Central Publishing, 2013.
- Kerker, Milton. "Classics and the Classicists of Colloid and Interface Science: 6. John Tyndall." *Journal of Colloid and Interface Science* 119 (1987): 602-604.
- Kerr, John. *A Most Dangerous Method: The Story of Jung, Freud, and Sabina Spielrein*. New York: Knopf, 1993.
- Killen, Andreas. *Berlin Electropolis: Shock, Nerves, and German Modernity*. Berkeley: University of California Press, 2006.
- Kipnis, Naum "Luigi Galvani and the Debate on Animal Electricity, 1791-1800." *Annals of Science* 44.2 (1987): 107-142.
- Kitcher, Patricia and Kathleen V. Wilkes. "What Is Freud's Metapsychology?" *Proceedings of the Aristotelian Society, Supplementary Volumes* 62 (1988): 117-137.
- Kim, Kyung-man. *Explaining Scientific Consensus: The Case of Mendelian Genetics*. New York: Guilford, 1994.

- King, C. Richard. "To Have or Not To Have Sex in Critical Theory: Sexuality in the Early Writings of Wilhelm Reich and Erich Fromm." *Mid-American Review of Sociology* 16 (1992): 81–91.
- Kircz, Joost. "Engels and Natural Science: A Starting Point." *Science and Society* 62 (1998): 62–78.
- Kjaergaard, Rikke Schmidt. "Exhibitions, Museums and Scientific Gardens in Nineteenth-century Denmark." In *Popularizing Science and Technology in the European Periphery, 1800–2000*. Edited by Faidra Papanelopoulou, Agustí Nieto-Galan, and Enrique Perdiguero, 135–155. Farnham: Ashgate, 2009.
- Klein, Ursula. "The Laboratory Challenge: Some Revisions of the Standard View of Early Modern Experimentation." *Isis* 99.4 (2008): 769–782.
- Klotz, Marcia. "Alienation, Labor, and Sexuality in Marx's 1844 Manuscripts." *Rethinking Marxism* 18.3 (2006):
- Knorr, Karin D., Hermann Strasser, and Hans Georg Zilian. *Determinants and Controls of Scientific Development*. Boston: D. Reidel, 1975.
- Koblenzer, Caroline S. "Psychodermatology of Women." *Clinics in Dermatology* 15 (1997): 127–141.
- Koedt, Anne. "The Myth of the Vaginal Orgasm." *Feminism in Our Time: The Essential Writings, World War II to Present*. Edited by Miriam Schneir. New York: Vintage Books, 1994.
- Komisaruk, Barry R., Carlos Beyer-Flores, and Beverly Whipple. *The Science of Orgasm*. Baltimore: Johns Hopkins University Press, 2006.
- Komisaruk, Barry R., Beverly Whipple, Sara Nasserzadeh, and Carlos Beyer-Flores. *The Orgasm Answer Guide*. Baltimore: Johns Hopkins University Press, 2010.
- Kool, S. "The Soother of Evil Pains: Asclepius and Freud," *Akroterion* 60 (2015): 13–32.

- Korda, Joanna B., Sue W. Goldstein, and Frank Sommer, "Sexual Medicine History: The History of Female Ejaculation." *The Journal of Sexual Medicine* 7 (2010): 1965–75.
- Koppe, Simo. "The Psychology of the Neuron: Freud, Cajal and Golgi." *Scandinavian Journal of Psychology* 24 (1983): 1–12.
- Korsgaard, Lea. *Orgasmeland: Da den seksuelle revolution kom til Denmark*. Copenhagen: Gyldendal Fakta, 2014.
- Kragh, Helen. *Entropic Creation: Religious Contexts of Thermodynamics and Cosmology*. Abingdon: Ashgate, 2013
- . "The Universe, the Cold War, and Dialectical Materialism." Manuscript submitted to *Centaurus* (2012): 1–32.
- Kramer, Peter D. "Development of the Hero." *Freud: Inventor of the Modern Mind*. New York: Harper Collins, 2006.
- Kraus, Friedrich. *Die allgemeine und spezielle Pathologie der Person: Klinische Sychiologie*. Leipzig: G. Thieme, 1919.
- . "Die Person in der Medizin aus dem Gesichtspunkt der Kolloidchemie." *Spezielle Pathologie und Therapie innerer Krankheiten*, Band 2. Edited by Theodor Brugsch. Berlin: Urban and Schwarzenberg, 1928.
- Kuhn, Thomas. *The Structure of Scientific Revolutions*. 4th ed. Chicago: University of Chicago Press, 2012.
- Küppers, E. "Weiteres zur Lokalisation des Psychischen (Versuch einer Analyse der Vorderhirnfunktionen)." *Zeitschrift für die gesamte Neurologie und Psychiatrie* 83.1 (1923): 247-276.
- Ladyman, James. "Towards a Demarcation of Science from Psuedoscience." In *Philosophy of Pseudoscience: Reconsidering the Demarcation Problem*. Edited

- by Massimo Pigliucci and Maarten Boudry. Chicago: University of Chicago Press, 2013.
- Lamb, S.D. *Pathologist of the Mind: Adolf Meyer and the Origins of American Psychiatry*. Baltimore: Johns Hopkins University Press, 2014.
- Lamoreaux, Naomi R. and Kenneth L. Sokoloff, “The Decline of the Independent Inventor: A Schumpeterian Story?” *Perspectives on Commercializing Innovation*. Edited by F. Scott Kieff and Troy. A Paredes. New York: Cambridge University Press, 2012.
- Landis, Carney. “Psychology and the Psychogalvanic Reflex.” *Psychological Review* 37.5 (1930): 381-398.
- Langbein, Georg. *Handbuch der elektrolytischen Metallniederschlaege*. Leipzig: J. Klinkhardt, 1903.
- Langley, J.N. “Sketch of the Progress of Discovery in the Eighteenth Century as Regards the Autonomic Nervous System.” *Journal of Physiology* 50 (1916): 225–258
- Lapicque, Louis. “The Chronaxic Switching in the Nervous System.” *Science* 70.1807 (1929): 151-4.
- Laqueur, Thomas. *Making Sex: Body and Gender from the Greeks to Freud*. Cambridge, MA: Harvard University Press, 1990.
- . “Orgasm, Generation, and the Politics of Reproductive Biology.” *The Gender/Sexuality Reader: Culture, History, Political Economy*. Edited by Roger N. Lancaster and Micaela di Leonardo. New York: Routledge, 1997.
- Large, David Clay. *Between Two Fires: Europe’s Path in the 1930s*. New York: Norton, 1990.
- Latour, Bruno and Steve Woolgar. *Laboratory Life: The Construction of Scientific Facts*. Princeton: Princeton University Press, 1986.

- Leck, Ralph M. *Vita Sexualis: Karl Ulrichs and the Origins of Sexual Science*. Urbana: University of Illinois Press, 2016
- Lemov, Rebecca. *World as Laboratory: Experiments with Mice, Mazes, and Men*. New York: Hill and Wang, 2005.
- Lesky, Erna. "Institute of the History of Medicine, University of Vienna." *Journal of the History of Medicine and Allied Sciences* 20.2 (1965).
- Levine, Norman. "Wilhelm Reich: Culture as Power." *History of European Ideas* 5.3 (1984): 273-292.
- Levins, Richard and Richard Lewontin. *The Dialectical Biologist*. Cambridge, MA: Harvard University Press, 1985.
- Levy, Joel. *Freudian Slips: All the Psychology You Need to Know*. London: Michael O'Mara, 2013.
- Lewes, Kenneth. *Psychoanalysis and Male Homosexuality*. Northvale, NJ: J. Aronson, 1995.
- Lieb, Elliot H. and Jakob Yngvason, "A Fresh Look at Entropy and the Second Law of Thermodynamics." *Physics Today* 53.32 (2000): 32-38.
- Lillie, Frank R. "The History of the Fertilization Problem," *Science* 43 (1916): 39–53.
- Ling, Gilbert N. and Ochsenfeld, Margaret M. "A Historically Significant Study that at Once Disproves the Membrane (Pump) Theory and Confirms that Nano-protoplasm is the Ultimate Physical Basis of Life." *Physiological Chemistry and Physics and Medical NMR* 40 (2008): 89–113.
- Lloyd, Elisabeth Anne. *The Case of the Female Orgasm: Bias in the Science of Evolution*. Cambridge, Mass.: Harvard University Press, 2005.

- Loeb, Jaques. *Proteins and the Theory of Colloidal Behavior*. New York: McGraw-Hill, 1922.
- . *The Mechanistic Conception of Life*. Edited by Donald Fleming. Cambridge, MA: Belknap, 1964.
- Loewenberg, Peter. "Sexual Morality and the Clinical Situation." In *Rediscovering History: Culture, Politics, and the Psyche*. Edited Michael S. Roth, 61–82. Stanford: Stanford University Press, 1994.
- Logan, Cheryl A. *Hormones, Heredity, and Race: A Spectacular Failure in Interwar Vienna*. New Brunswick, NJ: Rutgers University Press, 2013.
- Lothane, Zvi. "Freud's Seduction Theory Revisited." *Psychoanalytic Review* 88.5 (2001): 674–723.
- Loewenberg, Peter. "Psychohistorical Perspectives on Modern German History." *The Journal of Modern History* 47.2 (1975): 229–279.
- Lüdtke, Alf. "Love of State—Affection for Authority: Politics of Mass Participation in Twentieth Century European Contexts." In *New Dangerous Liaisons: Discourses on Europe and Love in the Twentieth Century*. Edited by Luisa Passerini, Lilian Ellena, and Alexander C.T. Geppert, 38–73. New York: Beghahn, 2010.
- Lunbeck, Elizabeth. *The Americanization of Narcissism*. Cambridge, MA: Harvard University Press, 2014.
- Lustig, A.J. "Sex, Death, and Evolution in Proto- and Metazoa, 1876-1913." *Journal of the History of Biology* 33 (2000): 221-246.
- Maddox, Brenda. *Freud's Wizard: Ernest Jones and the Transformation of Psychoanalysis*. Cambridge, Mass.: Da Capo Press, 2007.
- Maehle, Andreas-Holge. "The Power of Suggestion: Albert Moll and the Debate on Hypnosis." *History of Psychiatry* 25 (2014): 3–19

- Mah, Kenneth and Yitzchak M. Binik, "The Nature of Human Orgasm: A Critical Review of Major Trends." *Clinical Psychology Review* 21.6 (2001): 823-856.
- Maier, Thomas. *Masters of Sex: The Life and Times of William Masters and Virginia Johnson, The Couple Who Taught America How to Love*. New York: Basic Books, 2009.
- Maines, Rachel. *The Technology of Orgasm: "Hysteria," The Vibrator, and Women's Sexual Satisfaction*. Baltimore: Johns Hopkins University Press, 1999.
- Malinowski, Bronislaw. *Sex and Repression in Savage Society*. New York: Harcourt Brace, 1927.
- Manias, Chris. "Scholarly Visions of Prehistoric Sexuality, 1859–1900." In *Sex, Knowledge, and Receptions of the Past*. Edited by Kate Fisher and Rebecca Langlands. New York: Oxford University Press, 2015.
- Manjapra, Kris. *Age of Entanglement: German and Indian Intellectuals across Empire*. Cambridge, MA: Harvard University Press, 2014.
- Margolis, Jonathan. *O: The Intimate History of the Orgasm*. London: Century, 2004.
- Marples, Mary. "The Human Skin as an Ecosystem." In *Ecology in Theory and Practice*, ed. Jonathan Benthall, 114-128. New York: Viking Press, 1973.
- Marquit, Erwin. "Engels on Motion: A Comment." *Nature, Society, and Thought* 16 (2003): 315.
- Martin, Emily. "The Egg and the Sperm: How Science Has Constructed a Romance Based on Stereotypical Male-Female Roles," *Signs* 16.3 (1991): 485-501.
- Martin, Jim. *Wilhelm Reich and the Cold War*. Fort Bragg: Flatland Books, 2000.

Marx, Karl. *Economic and Philosophic Manuscripts of 1844*. Edited by D.J. Struik. New York: International Publishers, 1964.

Masson, Jeffrey Moussaieff, ed. *The Complete Letters of Sigmund Freud to Wilhelm Fliess, 1887–1904*. Cambridge, MA: Belknap, 1985.

“Max Hartmann.” *Nature* 4008 (1946): 265.

May, Ulrike. “Freud’s ‘Beyond the Pleasure Principle’: The End of Psychoanalysis or Its New Beginning?” *International Forum of Psychoanalysis* 22.4 (2013): 208-216.

Mayer, Andreas. *Sites of the Unconscious: Hypnosis and the Emergence of the Psychoanalytic Setting*. Chicago: University of Chicago Press, 2013.

Mazurkiewicz, Stany. “Which Materialism? Against Which Idealism? Dialectical Thinking of Nature According to Hegel, Engels, and Schelling.” *Almagest* 5 (2014): 14–21.

McComas, Alan J. “The Cathode Ray Oscilloscope.” *Galvani’s Spark: The Story of the Nerve Impulse*. New York: Oxford University Press, 2011.

McEwen, Britta. “Purity Redefined: Catholic Attitudes Towards Children’s Sex Education in Austria, 1920-36.” In, *Shaping Sexual Knowledge: A Cultural History of Sex Education in Twentieth Century Europe*. Edited by Lutz D.H. Sauerteig and Roger Davidson. New York: Routledge, 2009.

----. *Sexual Knowledge: Feeling, Fact, and Social Reform in Vienna, 1900–1934*. New York: Berghahn, 2012.

McGuire, Randall H. “The Dialectic–Marxism as a Theory of Relations.” In *A Marxist Archaeology*, 91–115. San Diego: Academic Press, 1992.

Mendelsohn, Everett. “Cell Theory and the Development of General Physiology.” *Archives Internationales d’Histoire des Sciences* 16 (1963): 419–429.

- Merdian, Hannah L. and David T. Jones, "Phallometric Assessment of Sexual Arousal." In *International Perspectives on the Assessment and Treatment of Sexual Offenders: Theory, Practice, and Research*. Edited by D.P. Boer, R. Eher, L.A. Craig, M.H. Miner, and F. Pfafflin, 141–169. Chichester, UK: John Wiley and Sons, 2011.
- Merton, Robert K. "Priorities in Scientific Discovery: A Chapter in the Sociology of Science." *American Sociological Review* 22.6 (1957): 635–659.
- Mesler, Bill. *A Brief History of Creation: Science and the Search for the Origin of Life*. New York: W.W. Norton, 2016.
- Miller, Martin Allen. *Freud and the Bolsheviks: Psychoanalysis in Imperial Russia and the Soviet Union*. New Haven: Yale University Press, 1998.
- . "Freudian Theory under Bolshevik Rule: The Theoretical Controversy During the 1920s." *Slavic Review* 44.4 (1985): 625-646.
- Miller, Tyrus. *Modernism and the Frankfurt School*. Edinburgh: Edinburgh University Press, 2014.
- Millett, David. "Hans Berger: From Psychic Energy to the EEG." *Perspectives in Biology and Medicine* 44.4 (2001): 522–542.
- Minerbo, Marion. "Two Faces of Thanatos: Broken Flowers (2005) and Ai no corrida (1976)." *International Journal of Psychoanalysis* 88.3 (2007): 777-790.
- Misch, Kathë. "Die biologischen Grundlagen der Freudschen Angsttheorie." *Internationale Zeitschrift für Psychoanalyse* 21 (1935).
- Misch, Walter. "The Syndrome of Neurotic Anxiety: The Somatic and Psychic Components of its Genesis and Therapy." *British Journal of Psychiatry* 81 (1935).
- Misch, W. and K. Misch-Frankl, "Die vegetative Genese der neurotischen Angst und ihre medikamentöse Beseitigung." *Nervenarzt* 5.8 (1932): 415-418.

Moll, Albert. *Das Sexualleben des Kindes*. Berlin: Walther, 1909.

----. *Libido sexualis: Studies in the Psychosexual Laws of Love Verified by Clinical Sexual Case Histories*. Translated by David Berger .New York: American Ethnological Press, 1933.

----. *The Sexual Life of the Child*. Translated by Eden Paul. New York: Macmillan, 1912.

Mollenhauer, Dieter “Max Hartmann’s Green Protists.” *Protist* 149 (1998): 185-189.

Mollon, Phil. “Revisiting ‘Analysis Terminable and Interminable’ – Expressions of Death Instinct by Patients and Analyst.” *Psychoanalytic Inquiry* 34 (2014): 28-38.

Money, John. “History, Causality, and Sexology.” *Journal of Sex Research* 40.3 (2003): 237–239.

Montagu, Ashley. *Touching: The Human Significance of the Skin*. New York: Columbia University Press, 1971.

Moore, Alison M. “Androgyny, Perversion, and Social Evolution in Interwar Psychoanalytic Thought,” in *Sex, Knowledge, and Receptions of the Past*, 220–242. New York: Oxford University Press, 2015.

Moragne, Micael and Matthew Cobb. *A History of Molecular Biology*. Cambridge, MA: Harvard University Press, 1998.

Morantz, Regina Markell. “The Scientist as Sex Crusader: Alfred C. Kinsey and American Culture.” *American Quarterly* 29.5 (1977): 563-96.

Morawski, Jill. “Epistemological Dizziness in the Psychological Laboratory: Lively Subjects, Anxious Experimenters, and Experimental Relations, 1950-1970.” *Isis* 106.3 (2015):

- Morris, David B. "Un-forgetting Asclepius: An Erotics of Illness." *New Literary History* 38.3 (2007): 419-441.
- Morris, Edmund. "Edison Illuminated: The 'Life and Phenomenon' of an Inventor." *This Living Hand and Other Essays*. New York: Random House, 2012.
- Moss, Lenny. *What Genes Can't Do*. Cambridge, MA: MIT Press, 2004.
- Moyaert, Paul. "The Death Drive and the Nucleus of the Ego: An Introduction to Freudian Metaphysics." *Southern Journal of Philosophy* 51 (2013): 94-119.
- Muchembled, Robert. *Orgasm and the West: A History of Pleasure from the Sixteenth Century to the Present*. Malden, MA: Polity, 2008.
- Mukherjee, Bijoy "Experiments and Research Programmes: Revisiting Vitalism/Non-Vitalism Debate in Early Twentieth Century." *Argument: Biannual Psychological Journal* 1.2 (2012): 171-197.
- Mundy-Castle, A.C. and B.L. McKiever, "The Psychophysiological Significance of the Galvanic Skin Response." *Journal of Experimental Psychology* 46.1 (1953): 15-24.
- Müller, Dieter G. "Relative Sexuality in *Ectocarpus siliculosus*: A Scientific Error." *Archives of Microbiology* 109 (1976): 89-94.
- Müller, Ludwig Robert. *Lebensnerven und lebenstriebe*. Berlin: J. Springer, 1931.
- Müller, Reinhard. "Die Arbeitslosen von Marienthal." *Archiv für die Geschichte der Soziologie in Österreich*. <http://agso.uni-graz.at/marienthal/> May 2012. Last accessed June 25, 2015.
- Murray, J.M. "Narcissism and the Ego Ideal." *Journal of the American Psychoanalytic Association* 12 (1964): 477-511.
- "Nathaniel Russell Harrington," *Science* 10.250 (1899): 529-531.

- Neill, R.B. "Character, Society, and the Politics of Hope: A Comparative Look at the Theories of Wilhelm Reich, Erich Fromm, and Herbert Marcuse." *Humboldt Journal of Social Relations* 2 (1975): 36–48.
- Neubauer, John. *The Fin-de-Siècle Culture of Adolescence*. New Haven: Yale University Press, 1992.
- Neuhaus, Jessamyn. "The Important of Being Orgasmic: Sexuality, Gender, and Marital Sex Manuals in the United States, 1920-1963." *Journal of the History of Sexuality* 9.4 (2000): 447–473.
- Neuman, R.P. "The Sexual Question and Social Democracy in Imperial Germany." *Journal of Social History* 7.3 (1974): 271-286.
- Neundörfer, Bernhard and Max J. Hilz, "Ludwig Robert Müller (1870-1926): A Pioneer of Autonomic Nervous System Research." *Clinical Autonomic Research* 8 (1998): 2.
- Nicholas, Aurelie, Stuart Brody, Pascal De Sutter, and François De Carufel, "A Woman's History of Vaginal Orgasm is Discernible from Her Walk." *The Journal of Sexual Medicine* 5.9 (2008): 2119-2124.
- Nilsen, Havard Friss. "Resistance in Therapy and War: Psychoanalysis Before and During the Nazi Occupation of Norway, 1933-45." *International Journal of Psychoanalysis* 94 (2013): 725-746.
- . "The Biologist of Love and Fear." *Studies in History and Philosophy of Biological and Biomedical Sciences* 54 (2015): 89–93.
- Nitzschke, Bernd. "Psychoanalyse im Nationalsozialismus: Aktuelle Konsequenzen einer historischen Kontroverse: der 'Fall' Wilhelm Reich." *Psychotherapie, Psychosomatik, medizinische Psychologie* 49 (1999): 131-137.
- . "Psychoanalysis and National Socialism." *International Forum of Psychoanalysis* 12 (2003): 98-108.

- Nordbo, R. "The Concentration of Ionized Magnesium and Calcium in Milk." *Journal of Biological Chemistry* 128 (1939): 745-757.
- Novey, S. "Some Philosophical Speculations about the Concept of the Genital Character." *International Journal of Psychoanalysis* 36 (1955): 88-94.
- Nunberg, Herman and Ernst Federn, eds. *Minutes of the Vienna Psychoanalytic Society, Volume IV: 1912-1918*. New York: International Universities Press, 1975.
- Nyhart, Lynn K. "Descent and the Laws of Development." *Biology Takes Form: Animal Morphology and the German University, 1800-1900*. Chicago: University of Chicago Press, 1995.
- Oakes, Len. "The Charismatic Intellectual: Sigmund Freud." *The Charismatic Personality*. Sydney: Australian Academic Press, 2010.
- Ödegaard, Örnulv. "The Psychogalvanic Reaction in Normals and in Various Psychopathic Conditions." *Acta Psychiatrica Scandinavica* 5.1 (1930): 55-103.
- O'Leary, W.D. "The Autonomic Nervous System as a Factor in the Psychogalvanic Reflex." *Journal of Experimental Psychology* 15 (1932): 767-772.
- Oosterhuis, Harry. "Sexual Modernity in the Works of Richard von Krafft-Ebing and Albert Moll." *Medical History* 56.2 (2012): 133-155.
- Orrells, Daniel. *Sex: Antiquity and its Legacy*. New York: Oxford University Press, 2015.
- Orsted, Hans Christian. "On an Apparent Paradoxical Galvanic Experiment." In *Selected Scientific Works*. Edited by Karen Jelved, Andrew D. Jackson, and Ole Knudson, 478-480. Princeton: Princeton University Press, 1998.
- Osterhout, W.J.V. *Biographical Memoir of Jacques Loeb*. Washington, DC: National Academy of Sciences, 1930.

Ostwald, Wolfgang. *An Introduction to Theoretical and Applied Colloid Chemistry: The World of Neglected Dimensions*. New York: John Wiley and Sons, 1917.

----. *A Handbook of Colloid Chemistry*. Philadelphia: P. Blakiston's Son, 1919.

Otis, Laura. *Membranes: Metaphors of Invasion in Nineteenth-century Literature, Science, and Politics*. Baltimore: Johns Hopkins University Press, 1999.

Oudshoorn, Nelly. *Beyond the Body: An Archaeology of Sex Hormones*. New York: Routledge, 1994.

Owens, B. Robert. "'Laboratory Talk' in U.S. Sociology, 1890–1930: The Performance of Scientific Legitimacy." *Journal of the History of the Behavioral Sciences* 50 (2014): 302–320.

Páramo-Ortega, Raúl. "Hinging Concepts: Between Marxism and Psychoanalysis." *Psychotherapy and Politics International* 12.3 (2014): 196–207.

Parikh Manoj and Stephen T. Webb, "Cations: Potassium, Calcium, and Magnesium." *Continuing Education in Anesthesia, Critical Care, and Pain* 12.4 (2012); 195–198.

Parker, Wendy. "Distinguishing Real Results from Instrumental Artifacts: The Case of the Missing Rain." In *Going Amiss in Experimental Research*. Edited by Giora Hon, Jutta Schickore, and Friedrich Steinle. S.l.: Springer, 2009.

Parmeggiani, P.L. "Interaction Between Theory and Experiment in the Study of Sleep Physiology: A Historical Survey of Early Sleep Research." *Revue Neurologique* 164 (2008): 629–633.

Particle Fever. Directed by Mark Levinson. USA: Anthos Media, 2014.

Pauly, Philip J. *Controlling Life: Jacques Loeb and the Engineering Ideal in Biology*. New York: Oxford University Press, 1987.

- Pavón-Cuéllar, David. "The Freudo-Marxist Tradition and the Critique of Psychotherapeutic Ideology." *Psychotherapy and Politics International* 12.3 (2014): 208–219.
- Payne, T.R. "On the Theoretical Foundations of Soviet Psychology." *Studies in Soviet Thought* 6 (1966): 124–134.
- Peglau, Andreas. *Unpolitische Wissenschaft? Wilhelm Reich und die Psychoanalyse im Nationalsozialismus*. Giessen: Psychosozial-Verlag, 2013.
- Penrose, L.S. "Freud's Theory of Instinct and Other Psycho-Biological Theories," *International Journal of Psychoanalysis* 12 (1931).
- Personal Library of Wilhelm Reich*. Rangeley, ME: Wilhelm Reich Infant Trust, 2012.
- Petersen, Randall S. and S. Wiley Wakeman. "The Type of Narcissist That Can Make a Good Leader." *Harvard Business Review*, 3 March 2017.
- "Physics of Cell Life," *The American Naturalist* 34.397 (1900): 54-56.
- Piccolino, Marco and Marco Bresadola. *Shocking Frogs: Galvani, Volta, and the Electric Origins of Neuroscience*. New York: Oxford University Press, 2013.
- Pind, Jörgen L. *Edgar Rubin and Psychology in Denmark: Figure and Ground*. Berlin: Springer, 2014.
- Porter, Roy and Lesley Hall. *The Facts of Life: The Creation of Sexual Knowledge in Britain, 1650–1950*. New Haven: Yale University Press, 1995.
- Pow, Stephen and Frank W. Stahnisch, "Pioneers in Neurology: Kurt Goldstein (1878-1965)." *Journal of Neurology* 261.5 (2014): 1049.
- Prenant, Marcel. *Biology and Marxism*. New York: International Publishers, 1943.

- Press, Howard. "The Marxism and Anti-Marxism of Wilhelm Reich." *Telos* 9 (1971).
- Preston, John. *Kuhn's The Structure of Scientific Revolutions: A Reader's Guide*. New York: Continuum, 2008.
- Probst, Siegmund. "Leibniz as Reader and Second Inventor: The Cases of Barrow and Mengoli." *G.W. Leibniz: Interrelations between Mathematics and Philosophy*. Edited by Norma B. Goeth, Philip Beeley, and David Rabouin. Dordrecht: Springer, 2015.
- Quincke, G. "Über periodische Ausbreitung von Flüssigkeitsoberflächen und dadurch hervorgerufene Bewegungserscheinungen." *Annalen der Physik* 35 (1888); 580-642.
- Rabinbach, Anson G. "The Politicization of Wilhelm Reich: An Introduction to 'The Sexual Misery of the Working Masses and the Difficulties of Sexual Reform.'" *New German Critique* 1 (1973): 90-97.
- Raknes, Ola. *Wilhelm Reich and Orgonomy: The Brilliant Psychiatrist and His Revolutionary Theory of Life Energy*. Princeton: American College of Orgonomy Press, 2004.
- . *Wilhelm Reich and Orgonomy: The Controversial Theory of Life Energy*. Baltimore: Pelican, 1970.
- Rancour-Laferriere, Daniel. "Four Adaptive Aspects of the Female Orgasm." *Journal of Social and Biological Structures* 6.4 (1983): 319-333.
- Rand, H.W. and S. Hsu. "Concerning Protoplasmic Currents Accompanying Locomotion in Ameba." *Science* 65.1680 (1927): 261.
- Rank, Otto. *The Trauma of Birth*. New York: Robert Brunner, 1952.
- Reich, Ilse Ollendorf. *Wilhelm Reich: A Personal Biography*. New York: Avon, 1969.

Reich, Peter. *A Book of Dreams*. New York: Harper and Row, 1973.

Reich, Wilhelm. "Über Spezifität der Onanieformen," *Internationale Zeitschrift für Psychoanalyse* 8 (1922): 38–40.

----. "Weitere Bemerkungen über die therapeutische Bedeutung der Genitallibido." *Internationale Zeitschrift für Psychoanalyse* 11 (1925): 297–317.

----. "The Sources of Neurotic Anxiety: A Contribution to the Theory of Psychoanalytic Therapy." *International Journal of Psychoanalysis* 7 (1926): 381–391.

----. "Über die chronische hypochondrische Neurasthenie mit genitaler Asthenie." *Internationale Zeitschrift für Psychoanalyse* 12 (1926): 25–39.

----. "Book Review: Kraus, Prof. Fr.: *Allgemeine und spezielle Pathologie der Person, klinische Syzygiologie, besonderer Teil I: Tiefenperson* (253 S., Verlag Thieme, Leipzig, 1926.)" *International Zeitschrift für Psychoanalyse* 13.3 (1927): 338–339.

----. "Die Stellung der Psychoanalyse in der Sowjetunion. Notizen einer Studienreise in Rußland." *Die Psychoanalytische Bewegung* 1 (1929): 358–368.

----. "The Characterological Mastery of the Oedipus Complex." *International Journal of Psycho-Analysis* 12 (1931).

----. "Abschließende Bemerkung zu 'Gegenkritik' Bernfelds." *Internationale Zeitschrift für Psychoanalyse* 18.3 (1932): 386–387.

----. "Der Ausschluss Wilhem Reichs aus der Internationalen Psychoanalytischen Vereinigung." *Zeitschrift für politische Psychologie und Sexualökonomie* (1935).

----. *Die Sexualität im Kulturkampf: Zur sozialistischen Umstrukturierung des Menschen*. Copenhagen: Sexpol-Verlag, 1936.

- . *The Murder of Christ: The Emotional Plague of Mankind*. New York: Noonday Press, 1953.
- . *Selected Writings: An Introduction to Orgonomy*. New York: Farrar, Straus and Cudahy, 1960.
- . "Dialectical Materialism and Psychoanalysis." *Studies on the Left* 6.4 (1966): 5-45.
- . *Children of the Future: On the Prevention of Sexual Pathology*. New York: Farrar, Straus and Giroux, 1967.
- . *Reich Speaks of Freud*. New York: Farrar, Straus and Giroux, 1967.
- . *The Sexual Revolution: Towards a Self-governing Character Structure*. New York: Farrar, Straus and Giroux, 1969.
- . *The Mass Psychology of Fascism*. New York: Farrar, Straus and Giroux, 1970.
- . *The Invasion of Compulsory Sex-Morality*. New York: Farrar, Straus and Giroux, 1971.
- . "The Masochistic Character." *Character Analysis*, 3rd edition. Translated by Vincent R. Carfagno. New York: Farrar, Straus and Giroux, 1972.
- . *The Sexual Struggle of Youth*. London: Socialist Reproduction, 1972.
- . *The Function of the Orgasm: Volume 1 of the Discovery of the Orgone*. New York: Farrar, Straus and Giroux, 1973.
- . "The Sexual Misery of the Working Masses and the Difficulties of Sexual Reform." *New German Critique* 1 (1973): 105-106.
- . *Early Writings, Volume One*. New York: Farrar, Straus and Giroux, 1975.

- . *People in Trouble, Volume Two of the Emotional Plague of Mankind*. Translated by Philip Schmitz. New York: Farrar, Straus, and Giroux, 1976.
- . *Genitality in the Theory and Therapy of Neurosis*. New York: Farrar, Straus and Giroux, 1980.
- . *The Bioelectrical Investigation of Sexuality and Anxiety*. New York: Farrar, Straus and Giroux, 1982.
- . *Passion of Youth: An Autobiography, 1897-1922*. New York: Farrar, Straus, and Giroux, 1988.
- . "The Silent Observer." Republished in: *Orgonomic Functionalism 2*. Rangeley: The Wilhelm Reich Infant Trust Fund, 1990.
- . "The Evasiveness of Homo Normalis." Republished in: *Orgonomic Functionalism 3*. Rangeley: The Wilhelm Reich Infant Trust Fund, 1991.
- . *Beyond Psychology: Letters and Journals, 1934-1939*. New York: Farrar, Straus and Giroux, 1994.
- . "Psychoanalysis in the Soviet Union (1929)." In *Sex-Pol: Essays 1929-1934*. Edited by Lee Baxandall, 77-88. New York: Verso, 2012.
- . *The Bion Experiments on the Origin of Life*. New York: MacMillan, 2013.
- Reichmayr, J. and E. Mühlleitner. "Psychoanalysis in Austria after 1933/34." *International Forum of Psychoanalysis* 12 (2003): 118-129.
- Reid-Schrewe, Ursula. "Freud's Début in the Sciences." *Reading Freud's Reading*. Edited by Sander L. Gilman, Jutta Birmele, Jay Geller, and Valerie D. Greenberg. New York: New York University Press, 1994.

Reiss, Ira L. *An Insider's View of Sexual Science since Kinsey*. Lanham, MD: Rowman and Littlefield, 2006.

Rheinberger, Hans-Jörg. "Eudorina, Max Hartmann's Experiments on Biological Regulation in Protozoa, 1914–21." In *An Epistemology of the Concrete: Twentieth-century Histories of Life*, 82–93. Durham, NC: Duke University Press, 2010.

Retterstøl, Nils. "A Pioneer of Biological Psychiatry: The Centenary of the Birth of Rolv Gjessing." *Journal of the Oslo City Hospitals* 37.10 (1987): 119.

Reynolds, Andrew. "The Theory of the Cell State and the Question of Cell Autonomy in Nineteenth and Early Twentieth-Century Biology." *Science in Context* 20.1 (2007): 71-95.

----. "Amoebae as Exemplary Cells: The Protean Nature of an Elementary Organism." *Journal of the History of Biology* 41 (2008): 307–337.

Richards, Arnold. "Freud's Free Clinics: A Tale of Two Continents," *Psychoanalytic Review* 100.6 (2013): 819-38.

Richards, Robert J. *The Tragic Sense of Life: Ernst Haeckel and the Struggle over Evolutionary Thought*. Chicago: University of Chicago Press, 2008.

----. *Was Hitler a Darwinian?: Disputed Questions in the History of Evolutionary Theory*. Chicago: University of Chicago Press, 2013.

Richter, Curt Paul. *Biological Clocks in Medicine and Psychiatry*. Springfield, Ill.: C.C. Thomas, 1965.

----. "Biology of Drives." *Journal of Comparative and Physiological Psychology* 40.3 (1947): 129-134.

----. "Electrical Skin Resistance: Diurnal and Daily Variations in Psychopathic and in Normal Persons." *Archives of Neurology and Psychiatry* 19 (1928): 488–508.

- . "The Significance of Changes in the Electrical Resistance of the Body During Sleep." *Proceedings of the National Academy of Sciences of the United States of America* 12 (1926): 214-222.
- Richter, Curt P. and Frederick G. Whelan, "Description of a Skin Galvanometer That Gives a Graphic Record of Activity in the Sympathetic Nervous System," *Journal of Neurosurgery* 6.4 (1949): 279-84.
- Rieff, Philip. "The World of Wilhelm Reich." *Commentary* 38.3 (1964): 50.
- Riskin, Jessica. *The Restless Clock: A History of the Centuries-long Argument Over What Makes Living Things Tick*. Chicago: University of Chicago Press, 2016.
- Ritvo, Lucille B. "Darwin as the Source of Freud's Neo-Lamarckianism." *Journal of the American Psychoanalytic Association* 13 (1965): 499-517.
- Rhumbler, Ludwig. "Das Protoplasma als physikalisches System." *Ergebnisse der Physiologie* 14.1 (1914): 474-617.
- Roach, Mary. *Bonk: The Curious Coupling of Science and Sex*. New York: W.W. Norton, 2008.
- Roazen, Paul. "Book Review: *Fury on Earth: A Biography of Wilhelm Reich*. Myron Sharaf. New York: St. Martin's Press/Marek 1983, xii + 550 pp." *Psychoanalytic Review* 72 (1985): 668-71.
- Robertiello, Richard C. "The 'Clitoral versus Vaginal Orgasm' Controversy and Some of Its Ramifications." *The Journal of Sex Research* 6.4 (1970): 307-311.
- Robinson, Paul. *The Freudian Left: Wilhelm Reich, Geza Roheim, Herbert Marcuse*. Harvard University, PhD, 1968.
- . *The Modernization of Sex: Havelock Ellis, Alfred Kinsey, William Masters and Virginia Johnson*, 2nd edition. Ithaca: Cornell University Press, 1989.

Rodgers, Joann Ellison. *Sex: A Natural History*. New York: Times, 2001.

Rodriguez, Sarah B. *Female Circumcision and Clitoridectomy in the United States: A History of a Medical Treatment*. Rochester, NY: University of Rochester Press, 2014.

“Rolv Gjessing.” *The Lancet* 276.7157 (1960): 970.

Rosen, Raymond C. and J. Gayle Beck, *Patterns of Sexual Arousal: Psychophysiological Processes and Clinical Applications*. New York: Guilford Press, 1988.

Rosenberg, Charles E. “Body and Mind in Nineteenth-century Medicine: Some Clinical Origins of the Neurosis Construct.” *Bulletin of the History of Medicine* 63 (1989): 185–197.

Rosenman, Ellen Bayuk. “Body Doubles: The Spermatorrhea Panic.” *Journal of the History of Sexuality* 12 (2003): 365–399.

Rosenwein, Robert E. “Social Influence in Science: Agreement and Dissent in Achieving Scientific Consensus.” In *The Social Psychology of Science*. Edited by William R. Shadish and Steve Fuller, 262–285. New York: Guilford, 1994.

Ross, N. “The Primacy of Genitality in the Light of Ego Psychology – Introductory Remarks.” *Journal of the American Psychoanalytic Association* 18 (1970): 267–84.

Ross, C. Joseph, John B. Hickam, William P. Wilson, Hans Lowenback, “Reflex Venoconstrictor Response to Strong Autonomic Stimulation.” *American Heart Journal* 57.3 (1959): 418–422.

Rothschuh, Karl *History of Physiology*. Huntington, N.Y.: R.E. Krieger, 1973.

Roueché, Berton. “A Reporter at Large: Zweckwissenschaft.” *New Yorker*, August 9, 1947.

- Rowlands, P. "Schizophrenia and Sexuality." *Sexual and Marital Therapy* 10.1 (1995): 50-51.
- Rubin Reich, Lore. "Wilhelm Reich and Anna Freud: His Expulsion from Psychoanalysis." *International Forum of Psychoanalysis* 12 (2003): 109-117.
- Ruckmick, Christian A. "Emotions in Terms of the Galvanometric Technique." *The British Journal of Psychology* 21 (1930): 149-159.
- . "Introduction." *Psychological Monographs* 48 (1936): iii-iv.
- Rycroft, Charles. *Wilhelm Reich*, 2nd edition. New York: Viking Press, 1971.
- Sadoff, Dianne F. *Sciences of the Flesh: Representing Body and Subject in Psychoanalysis*. Stanford: Stanford University Press, 1998.
- Sadowsky, Jonathan. *Electroconvulsive Therapy in America: The Anatomy of a Medical Controversy*. New York: Routledge: 2016.
- Sakezles, Priscilla. "Feminism and Aristotle." *Apeiron* 32 (1999): 67-74.
- Sakula, Alex. "Samson Wright (1899-1956): Physiologist Extraordinaire." *Journal of the Royal Society of Medicine* 92 (1999): 484.
- Sapp, Jan. *Where the Truth Lies: Franz Moewus and the Origins of Molecular Biology*. New York: Cambridge University Press, 1990.
- Sarlin, C.N. "Feminine Identity," *Journal of the American Psychoanalytic Association* 11 (1963): 790-816.
- . "The Current Status of the Concept of Genital Primacy." *Journal of the American Psychoanalytic Association* 18 (1970): 285-299.

- Sattar, Atia. "The Aesthetics of Laboratory Inscription: Claude Bernard's Cahier Rouge." *Isis* 104.1 (2013): 63-85.
- Sauerteig, Lutz D.H. "Loss of Innocence: Albert Moll, Sigmund Freud, and the Invention of Childhood Sexuality." *Medical History* 56.2 (2012): 156-183
- Saul, Leon J. "Freud's Death Instinct and the Second Law of Thermodynamics." *International Journal of Psychoanalysis* 39 (1958): 323-5.
- Savoia, Paolo. "Seeing and Hearing: Charcot, Freud and the Objectivity of Hysteria." In *Objectivity in Science: New Perspectives from Science and Technology Studies*. Edited by Flavia Padovani, Alan Richardson, and Jonathan Y. Tsou, 123–144. New York: Springer, 2015.
- Schaeffer, Asa A. *Amoeboid Movement*. Princeton: Princeton University Press, 1920.
- Schaffner, Anna Katharina. *Modernism and Perversion: Sexual Deviance in Sexology and Literature, 1850–1930*. New York: Palgrave Macmillan, 2012.
- Schimek, Jean G. "Fact and Fantasy in the Seduction Theory: A Historical Review." *Journal of the American Psychoanalytic Association* 35 (1987): 937-964.
- Schimmel, Paul. *Sigmund Freud's Discovery of Psychoanalysis: Conquistador and Thinker*. Hove: Routledge, 2014.
- Schloegel, Judy Johns and Henning Schmidgen, "General Physiology, Experimental Psychology, and Evolutionism: Unicellular Organisms as Objects of Psychophysiological Research, 1877-1918." *Isis* 93.4 (2002): 614-645.
- Schmidgen, Henning. "Pictures, Preparations, and Living Processes: The Production of Immediate Visual Perception (Anschauung) in Late-19th-Century Physiology." *Journal of the History of Biology* 37 (2004): 477-513.
- Schrödinger, Erwin. *What is Life? The Physical Aspect of the Living Cell with Mind and Matter and Autobiographical Sketches*. New York: Cambridge University Press, 1962.

- Schulkin, Jay. *Curt Richter: A Life in the Laboratory*. Baltimore: Johns Hopkins University Press, 2005.
- . "Curt Richter: Psychobiology and the Concept of Instinct." *History of Psychology* 10.4 (2007): 325-343.
- Searls, Damion. *The Inkblots: Hermann Rorschach, His Iconic Test, and the Power of Seeing*. New York: Crown, 2017.
- Sears, Richard. *Psychogalvanic Responses in Arithmetical Work: Effects of Experimental Changes*. New York: Archives of Psychology, 1933.
- Segal, Hanna. "On the Clinical Usefulness of the Concept of Death Instinct." *International Journal of Psychoanalysis* 74 (1993): 55-61.
- Segal, Naomi. "Witnessing Through the Skin: The Hysteric's Body as Text." *Journal of Romance Studies* 9.3 (2009): 73-86.
- Seideman, Steven. *The Social Construction of Sexuality*, 3rd ed. New York: W.W. Norton, 2015.
- Shapin, Steven. *The Scientific Life: A Moral History of a Late Modern Vocation*. Chicago: University of Chicago Press, 2008.
- . *Leviathan and the Air-pump: Hobbes, Boyle, and the Experimental Life*. Princeton: Princeton University Press, 2011.
- . "Kuhn's *Structure*: A Moment in Modern Naturalism." In *Kuhn's Structure of Scientific Revolutions—50 Years On*. Edited by W.J. Devlin and A. Bokulich, 11–21. Cham: Springer, 2015.
- Sharaf, Myron. *Fury on Earth: A Biography of Wilhelm Reich*. New York: De Capo Press, 1994.

- Sharma, Avi. "Medicine from the Margins? Naturheilkunde from Medical Heterodoxy to the University of Berlin, 1889-1920." *Social History of Medicine* 24.2 (2011): 334-351.
- Shechner, Mark. "From Socialism to Therapy II: Wilhelm Reich," *After the Revolution: Studies in the Contemporary Jewish American Imagination*. Bloomington: Indiana University Press, 1987.
- Shor, Robert E. "A Survey of Representative Literature on Freud's Death-Instinct Hypothesis." *Journal of Humanistic Psychology* (1961): 73-83.
- Sidis, Boris and Louis Nelson. "The Nature and Causation of the Galvanic Phenomenon." *Psychological Review* 17.2 (1910): 98-146.
- Sigusch, Volkmar. "The Sexologist Albert Moll – Between Sigmund Freud and Magnus Hirschfeld." *Medical History* 56.2 (2012): 184-200.
- Simon, Linda. *Dark Light: Electricity and Anxiety from the Telegraph to the X-ray*. Orlando: Harcourt, 2004.
- Simon, Matt. "Fantastically Wrong: Why is the Sky Blue? It's Packed with Sexy Energy, Of Course." *Wired.com*. 26 November 2014.
- Skinner, B.F. "A Case History in Scientific Method," *The American Psychologist* 11 (1956): 221-233.
- Slavet, Eliza. "Freud's 'Lamarckism' and the Politics of Racial Science." *Journal of the History of Biology* 41 (2008): 37-80.
- Sletvold, John. *The Embodied Analyst: From Freud to Reich to Relationality*. New York: Routledge, 2014.
- . "'The Reading of Emotional Expression': Wilhelm Reich and the History of Embodied Analysis." *Psychoanalytic Dialogues* 21.4 (2011): 453-467

- Some Questions and Answers about Orgone Therapy: An Interview with Chester M. Raphael, M.D.* Rangeley, ME: Wilhelm Reich Museum, 1977.
- Sommer, R. "Zur weiteren Entwicklung der wissenschaftlichen Pyschiatric." *Beitrage zur psychiatrischen Klinik* 1.1 (1902).
- Sonneborn, G.N. "Sexuality in Unicellular Organisms." *Protozoa in Biological Research*. Edited by G.N. Calkins and F.M. Summers. New York: Macmillan, 1941.
- Spring, William J. "A Critical Consideration of Bernfeld and Feitelberg's Theory of Psychic Energy." *Psychoanalytic Quarterly* 3 (1934): 446-7.
- Stainbrook, E.J. and H. Löwenbach. "The Reorientation and Maze Behavior of the Rat after Noise-fight and Electroshock Convulsions." *Journal of Comparative Psychology* 34.3 (1942): 293-299.
- Starr, Karen E. and Lewis Aron. "Women on the Couch: Genital Stimulation and the Birth of Psychoanalysis." *Psychoanalytic Dialogues* 21 (2011): 373-392.
- Stevens, Anthony and John Price. *Prophets, Cults, and Madness* (London: Duckworth, 2000).
- Stevens, William K. "Curt Richter, Credited with Idea of Biological Clock, is Dead at 94." *New York Times* 22 December 1988: D23.
- Strick, James. *Wilhelm Reich: Biologist*. Cambridge, MA.: Harvard University Press, 2015.
- Stuart, Michael T. "Taming Theory with Thought Experiments: Understanding and Scientific Progress." *Studies in History and Philosophy of Science* 58 (2016): 24–33.
- Sturm Thomas and Mitchell G. Ash. "Roles of Instruments in Psychological Research." *History of Psychology* 8 (2005): 3-34.

Swann, Brenda and Francis Aprahamian, eds. *J.D. Bernal: A Life in Science and Politics*. London: Verso, 1999.

Sugarman, Susan. *What Freud Really Meant: A Chronological Reconstruction of his Theory of Mind* (Cambridge: Cambridge University Press, 2016

Sulloway, Frank J. *Freud, Biologist of the Mind: Beyond the Psychoanalytic Legend*. New York: Basic Books, 1979.

Suls, Jerry M. and Ralph L. Rosnow. "Concerns about Artifacts in Psychological Experiments." In *The Rise of Experimentation in American Psychology*. Edited by Jill G. Morawski. New Haven: Yale University Press, 1988.

Syz, Hans C. "Psychogalvanic Studies in Schizophrenia." *Archives of Neurology and Psychiatry* 16 (1926): 747–760.

Syz, Hans C. and E.F. Kinder. "Electrical Skin Resistance in Normal and in Psychotic Subjects." *Archives of Neurology and Psychiatry* 19 (1928): 1026–1035.

Szasz, Thomas S. "Is the Concept of Entropy Relevant to Psychology and Psychiatry?" *Psychiatry* 19 (1956): 199–202.

Tarchanoff, J.R. "Zur Physiologie des Geschlechtsapparates des Frosches." *Archiv für die gesamte Physiologie des Menschen und der Tiere* 40 (1887): 330–351.

Taylor, Eugene. "Jung Before Freud, Not Freud Before Jung: On the Reception of Jung's Work in American Psychoanalytic Circles Between 1904 and 1909." *Journal of Analytical Psychology* 43 (1998): 104.

Teitelbaum, Stephanie. "Drives." In the *Encyclopedia of Psychology and Religion*. Edited by David A. Leeming, Kathryn Madden, and Stanton Marlan, 258–59. New York: Springer, 2010.

Tiarhou, Lazaros C. and Manuel Del Cerro. "The Histologist Sigmund Freud and the Biology of Intracellular Motility." *Biology of the Cell* 61 (1987): 111–114.

Thatcher, Adrian. *Redeeming Gender*. New York: Oxford University Press, 2016.

The Correspondence of Sigmund Freud and Sándor Ferenczi Volume 1, 1908-1914. Cambridge, MA: Belknap, 1993.

The Correspondence of Sigmund Freud and Sandor Ferenczi, Volume 3. Cambridge, MA: Belknap, 2000.

“The Late Professor Friedrich Kraus,” *The Lancet* 227.5884 (1936): 1328.

Tobin, Robert Deam. “‘Homosexuality’ and the Politics of the Nation in Austria, Hungary, and Austria-Hungary.” In *Peripheral Desires: The German Discovery of Sex*, 111–133. Philadelphia: University of Pennsylvania Press, 2015.

Todes, Daniel P. “Pavlov’s Physiology Factory.” *Isis* 88 (1997): 205-250.

----. *Ivan Pavlov: A Russian Life in Science* (New York: Oxford University Press, 2014).

---- and N. Kementsov. “Dialectical Materialism and Soviet Science in the 1920s and 1930s.” In *A History of Russian Thought*. Edited by W.J. Leatherbarrow and D. Offord. New York: Cambridge University Press, 2010.

Toepfer, Karl Eric. *Empire of Ecstasy: Nudity and Movement in German Body Culture, 1910–1935*. Berkeley: University of California Press, 1997.

Totten, Nick. “Wilhelm Reich’s Theory of Sexuality.” *Sexual Revolutions: Psychoanalysis, History and the Father*. Edited by Gottfried Heuer. New York: Routledge, 2011.

Tsagareli, Merab G. “Ivane Tarkhnishvili (Tarchanoff): A Major Georgia Figure from the Russian Physiological School.” *Journal of the History of the Neurosciences* 21 (2012): 393–408.

- Turkel, William. *Spark From the Deep: How Shocking Experiments with Strongly Electric Fish Powered Scientific Discovery*. Baltimore: Johns Hopkins University Press, 2013.
- Turner, Christopher. *Adventures in the Orgasmatron: How the Sexual Revolution Came to America*. New York: Farrar, Straus and Giroux, 2011.
- Van Deusen, Edmund L. "The Inventor in Eclipse." *The Mighty Force of Research*. New York: McGraw-Hill, 1956.
- Van Haute, Philippe and Tomas Geyskens. *Confusion of Tongues: The Primacy of Sexuality in Freud, Ferenczi, and Laplanche*. New York: Other Press, 2004.
- Veraguth, Otto. *Das psychogalvanische Reflexphänomen*. Berlin: Von S. Karger, 1909.
- . "Measuring Joy and Sorrow." *Scientific American Supplement* 67 (February 6, 1909).
- Waidzunus, Thomas and Steven Epstein, "'For Men Arousal is Orientation': Bodily Truthing, Technosexual Scripts, and the Materialization of Sexualities through the Phallometric Test." *Social Studies of Science* 45 (2015): 187–213
- Wallen, Martin. "The Electromagnetic Orgasm and History Outside the City." *City of Health, Fields of Disease: Revolutions in the Poetry, Medicine, and Philosophy of Romanticism*, 149–172. Burlington, VT: Ashgate, 2004.
- Wang, Ging Hsi. "The Galvanic Skin Reflex: A Review of Old and Recent Works from a Physiologic Point of View II." *American Journal of Physical Medicine* 37.1 (1958): 35-57.
- Wasserman, Janek. *Black Vienna: The Radical Right in the Red City, 1918-1938*. Ithaca: Cornell University Press, 2014.
- Weber, Max. *On Charisma and Institution Building*. Chicago: The University of Chicago Press, 1968.

- Widacki, Jan. "Ivane Tarkhnishvili (Ivan Tarchanoff) and his Links with Poland." *Journal of the History of the Neurosciences* 25 (2016): 204–212.
- Wiesz, Eduard. *Diagnostik mit freiem Auge: Ektoscopie*. Berlin: Urban and Schwarzenberg, 1924.
- Weizmann, Frederic. "Early Development and Psychology: Genetic and Embryological Influences, 1880–1920." In *The Transformation of Psychology: Influences of 19th-century Philosophy, Technology, and Natural Science*. Edited by Christopher D. Green, Marlene Shore, and Thomas Teo, 219–235. Washington, DC: American Psychological Association, 2001.
- Wilder, Joseph. *Stimulus and Response: The Law of Initial Value*. Cambridge, UK: Elsevier, 2014.
- Winkler, Karen "Kinsey, Sex Research, and the Body of Knowledge: Let's Talk About Sex." *Women's Studies Quarterly* 33.3/4 (2005): 285-313.
- Wegs, Robert G. "Youth Culture, Sex, and Marriage." *Growing Up Working Class: Continuity and Change Among Viennese Youth, 1890-1938*. University Park: Pennsylvania State University Press, 1989.
- Welche, G. Rickey and James S. Clegg. "From Protoplasm Theory to Cellular Systems Biology: A 150-year Reflection." *American Journal of Physiology* 298 (2010): C1280–C1290.
- Westburg, Edward M. "Psychogalvanic Studies on Affective Variations in the Mentally Diseased." *Archives of Neurology and Psychiatry* 22 (1929): 719–736.
- Wieser, Martin. "From the EEL to the EGO: Psychoanalysis and the Remnants of Freud's Early Scientific Practice." *Journal of the History of the Behavioral Sciences* 49 (2013): 259–280.
- Wightman, W. P. D. *The Growth of Scientific Ideas*. New Haven: Yale University Press, 1953.

- Wilbur, George B. "Some Problems Presented by Freud's Life-Death Instinct Theory." *American Imago* 2 (1951): 209-265.
- Wollheim, Ernst. "Friedrich Kraus zum 100. Geburtstag (31.5.1958)." *Die Medizinische* 3.24 (1958): 995.
- Wortis, Joseph. "Remembering Gjessing: 1887-1959." *Biological Psychiatry* 24 (1988): 2.
- Wyckoff, James. *Wilhelm Reich: Life Force Explorer*. Greenwich, Conn.: Fawcett, 1973.
- Wydnam, Diana. *Norman Haire and the Study of Sex*. Sydney: Sydney University Press, 2012.
- Young, Courtenay. "The History and Development of Body-Psychotherapy: The American Legacy of Reich." *Body, Movement and Dance in Psychotherapy* 3.1 (2008): 5-18.
- Young-Bruehl, Elisabeth and Murray M. Schwartz, "Why Psychoanalysis Has No History." *American Imago* 69 (2012).
- Zachar, Peter. *A Metaphysics of Psychopathology*. Cambridge, MA: MIT Press, 2014.
- Zajicek, Benjamin. "Scientific Psychiatry in Stalin's Soviet Union: The Politics of Modern Medicine and the Struggle to Define 'Pavlovian' Psychiatry, 1939–1953." PhD dissertation, University of Chicago, 2009.
- Zajko, Vanda and Ellen O'Gorman. *Classical Myth and Psychoanalysis: Ancient and Modern Stories of the Self*. Oxford: Oxford University Press, 2013.
- Zeigler, J. "Skin and Character in Medieval and Early Renaissance Physiognomy." *Micrologus* 13 (2005).
- Zepf, Siegfried. "Libidio and Psychic Energy—Freud's Concepts Reconsidered." *International Forum of Psychoanalysis* 19.1 (2010): 3-14.

---- and Florian D. Zepf. “‘You are Requested to Close an Eye’: Freud’s Seduction Theory and Theory of the Oedipus Complex Revisited,” *Psychoanalytic Review* 98.3 (2011): 287–323.

---- and Johannes Nicolas Zepf. "Wilhelm Reich – ein blinder Seher?; Wilhelm Reich – A Blind Seer? A Late Addendum to his 100 Anniversary." *Forum Der Psychoanalyse* 26.1 (2010): 71-86.

Zondek, Samuel G. *Elektrolyte: Ihre Bedeutung für Physiologie, Pathologie und Therapie*. Berlin: J. Springer, 1927.

----. “Zur Frage der Vagus- und Sympathikuswirkung.” *Naunyn-Schmiedebergs Archiv für experimentelle Pathologie und Pharmakologie* 143 (1929): 192–208.

Zweig, M.B. “Wilhelm Reich’s Theory: Ethical Implications.” *American Imago* 28 (1971): 268–286.