



TESTO



JUNKIE

BEATRIZ PRECIADO

**SEX, DRUGS, AND BIOPOLITICS IN
THE PHARMACOPORNOGRAPHIC ERA**

“Inventive, daring, and blindingly lucid, Beatriz Preciado
opens a new branch of philosophical practice.”

—AVITAL RONELL, author of *CRACK WARS*

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THE PHARMACOPORNOGRAPHIC ERA**

TRANSLATED FROM THE FRENCH BY BRUCE BENDERSON



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For our dead ones: A., T., E., J., K., S., T.

For William

For Virginie, Pepa, and Swann

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8. PHARMACOPOWER*

Pharmacia (*Pharmakeia*) is also a common noun signifying the administration of the *pharmakon*, the drug: the medicine and/or poison. . . . Socrates compares the written text Phaedrus has brought along to a drug (*pharmakon*). The *pharmakon*, this “medicine,” this philter, which acts as both remedy and poison, already introduces itself into the body of the discourse with all its ambivalence. . . . The *pharmakon* would be a substance—with all that that word can connote in terms of matter with occult virtues, cryptic depths, refusing to submit their ambivalence to analysis, already paving the way for alchemy—if we didn’t have eventually to come to recognize it as antisubstance itself: that which resists any philosopheme, indefinitely exceeding its bounds as nonidentity, nonessence, nonsubstance; granting philosophy by that very fact the inexhaustible adversity of what funds it and the infinite absence of what founds it. . . . The *pharmakon* properly consists in a certain inconsistency, a certain impropriety, this nonidentity-with-itself always allowing it to be turned against itself. What is at stake at this overturning is no less than science and death. Which are consigned to a single type in the structure of the *pharmakon*, the one and the only name for that potion that must be awaited. And even, in Socrates’s case, deserved.¹

* This chapter has been modified and developed for this English-language edition by the author.

1. Jacques Derrida, “La pharmacie de Platon,” in *La Dissémination* (Paris: Editions du Seuil, 1972), 86, 87 and 148. See also Derrida, *Dissemination*, trans. Barbara Johnson (Chicago: University of Chicago Press, 1983), 70 and 119.

NARCOSEXUAL WITCHCRAFT

Pharmacopornographic hegemony, which wouldn't become explicit until the end of the twentieth century, has its roots in the origins of modern capitalism, transformations of medieval systems of production at the end of the fifteenth century that would open the way to industrial and colonial economies, to the biopolitical fiction of the nation-state and to regimes of scientific and technical knowledge. In order to understand how new relationships of body-power, pleasure-knowledge, and *pharmakon*-subjectivities were established in the West, we must first make an indispensable detour through the relationship between capitalism and the destruction of our entheogenic² traditions.

To gain access to the question of the *pharmakon*, we have to go the way of witches. Farmers, harvesters, and preparers of medicinal plants were condemned during the Inquisition. Witches, alchemists, and midwives were declared to be heretics and satanic deviants. At the same time, Europe colonized the Americas. "Witch-hunt[s] occurred simultaneously with the colonization and extermination of the populations of the New World, the English enclosures, [or] the beginning of the slave trade."³ Feminist historian Silvia Federici has shown that the witch hunt was a double

2. Denis Richard, Jean-Louis Senon and Marc Valleur, *Dictionnaire des drogues et des dépendances* (Paris: Larousse, 2004), 267. Entheogenic comes from the Greek *entheos*, meaning trance, possession. A neologism suggested in 1979 by the Hellenist Carl Ruck, the ethno-botanist Gordon Wasson and the philosopher Jonathan Ott, pertaining to psychoactive substances capable of inducing states of ecstatic trance or shamanic possession. This term does not cover the same territory as the word psychedelic, which is related to 60s Western culture.

3. Silvia Federici, *Caliban and the Witch: Women, the Body and Primitive Accumulation* (New York: Autonomedia, 2004), 164.

attempt to appropriate women's bodies as reproductive force and to end the use of natural resources as "commons" (meadows, forests, rivers, lakes, wild pastures). The process of enclosing land, expropriating folk wisdom, criminalizing practices of "voluntary intoxication," and privatizing plant germ plasm was only beginning. It reached its apex in the modern period with the colonial expropriation of plants, animals, human bodies, and knowledges; the persecution of the producers, consumers, and traffickers of "drugs"; the gradual transformation of natural resources into pharmaceutical patents; and the confiscation by juridical-medical institutions of all experiments that involved self-administration.⁴

Most medieval preparations with hallucinogenic properties were topically absorbed, dissolved in an oil-based ointment and smeared on the neck, armpits, or stomach. The way these salves were applied closely resembles transgender people's use of testosterone in gel form today. Contemporary historians of medieval pharmacological traditions and the Inquisition hypothesize that most of the visions and acts of magic condemned as satanic by the tribunals of the Inquisition were the result of the accidental or intentional ingestion of psychoactive substances. By consulting the records of the inquisitors of the period and the ancient treatises of herbalists, today's researchers have been able to identify the different hallucinogenic and narcotic substances extracted from vegetable and animal matter that were then in use.

4. Richard Stallman, "Biopirates ou biocorsaires?," *Multitudes* 1 (mars 2000): 114–17.

A number of these recipes for ointments and concoctions mention psychoactive solanaceous ingredients, substances such as henbane (of the nightshade family), stramonium (thorn apple), belladonna, and mandrake. All of them included extracts of such plants as the poppy (source of opium, heroin, and morphine) and hemp (marijuana, hashish); toads, whose skin, we now know, contains a strong psychotropic substance; and a certain kind of “flour of damp cereals,” probably having to do with the ergot fungus that attacks rye and from which LSD would be extracted. Hallucinogenic visions worthy of the rhetoric of Deleuze and Guattari (becoming animal, becoming a plant, having sexual relations with animals, talking with trees, astral projection, etc.) could have been caused by the psychotropic effects on the organism after the ingestion or cutaneous application of these plants with hallucinogenic or aphrodisiac powers. In the 1960s, Walter Pahnke scrupulously followed the formula for an ointment appearing in a fifteenth-century book and then experimented, along with other colleagues, by smearing it on the area of the neck and armpits. All the researchers reported having been plunged into “a twenty-four-hour sleep during which they dreamed of daredevil flights, frenetic dancing and other strange adventures similar to those that took place during medieval orgies.”⁵

During periods of drought and severe food shortages, to increase the production of bread, substitute grains like rye were used, and these might have contained mycotox-

5. Antonio Escototado, *Historia General de las Drogas* (Madrid: Espasa-Calpe, 2008), 169.

ins, which were metabolites produced by the bread molds, the effects of which were poisonous to mammals, causing hallucinations and vomiting. Today we know that the victims of Ignis Sacer (Saint Anthony's fire) were suffering from the effects of the hallucinogen lysergic acid diethylamide (abbreviated after 1938 as LSD)—a mycotoxin that appeared during the baking of bread contaminated with ergot—as well as from other mycotoxins, such as belladonna alkaloids, extracted from the fruit of the mandrake root. Several more centuries were necessary before some of these mycotoxins would appear again, in the manufacture of antibiotics.⁶

The transcript of the sentencing of a woman accused of witchcraft during the Inquisition in Carcassonne, from 1330 to 1340 (the period in which the term *witch's Sabbath* first came into use), records, "She encountered and greeted a gigantic goat to which she gave herself. In exchange, the goat taught her about venomous plants cooked in a caldron over an evil fire, and poisonous plants. . . . Since that time, she has devoted herself to the preparation of certain noxious ingredients and potions."⁷ The 1580 treatise *De la démonomanie des sorciers* by Bodino established a criminal relationship between herbcraft and witchcraft.⁸

That was how herbalists, bonesetters, bards, and druids and priests and priestesses of other faiths, including all those who dared practice herbcraft (for therapeutic, ritu-

6. *Ibid.*, 164–69. See the English short version Antonio Escobedo, *A Brief History of Drugs from the Stone Age to the Stoned Age*, trans. Kent Symington (Rochester, VT: Park Street Press, 1999). See also Dale Pendel, *Pharmako/Dynamis: Stimulating Plants, Potions & Herbcraft* (San Francisco: Mercury House, 2002).

7. Escobedo, *History of Drugs*, 277.

8. *Ibid.*, 358.

alistic, or simply recreational purposes) came to be listed under the category of the “unspeakable” and were persecuted, without any further distinction, for “sorcery.” The Inquisition would function as an authority of control and repression as much for the pharmacological knowledge of women belonging to the lower class as for the *potentia gaudendi* generated by the body’s metabolism of the chemical composition of these plants, as well as by the discourse and shared knowledge attached to social rituals.

The feminist activist and pagan witch Starhawk argues that the persecution of witches in Europe (and eventually in the American colonies) from 1430 to 1740 was part of a larger process of eradicating knowledge and lower-class power while simultaneously working to reinforce the hegemonic knowledge of the expert, something indispensable to the gradual insertion of capitalism on a global scale.⁹

The *Malleus Maleficarum*, a handbook for the Inquisition and its techniques for extracting knowledge, condemns female sexuality, nonproductive sexuality (anal practices and masturbation), and all experimentation with psychoactive substances.¹⁰ As Starhawk points out, the Inquisition punished aggressiveness and pleasure in women and imposed passivity, submission, and silence on them in the domain of sexual practices.¹¹ All of it was connected: the emergence of proto-industrial capitalism and its scientific forms of production and transmission of knowledge; the extermination of a part of the population that had

9. Starhawk, *Dreaming the Dark: Magic, Sex, and Politics* (Boston: Beacon Press, 1997), 200–4.

10. Arthur Evans, *Witchcraft and the Gay Counter-Culture* (Boston: Fag Rag Books, 1981).

11. Starhawk, *Dreaming*, 215.

been endowed with pharmacological awareness; the use of racial discourses as religious and biological arguments for enslavement and oppression; the appearance of new methods of segmenting, demarcating, and enclosing land; the raising of livestock that would sustain the future textile industry; colonial expansion in America, Africa, the Indies, and the Far East; and the invention in Europe of servile and pro-slavery models of labor.

Contrary to the generally accepted idea, women did not wait until the twentieth century to become part of the labor market. Their practice of fields of knowledge and their production of wealth were carefully ousted from the circuits of medieval economy so that such exclusion would strengthen early capitalism. Angela Davis has taught us that the “white woman” as mother and housewife is an invention of modern capitalism: the creation of bourgeois concepts of wife and reproductive mother are accompanied by the economic devaluation of the household and the exclusion of housework from the productive sphere.¹²

Starhawk finds a correlation between this economic analysis and the criminalization of witchcraft:

The Witch persecutions were tied to another of the far-reaching changes in consciousness that occurred during the sixteenth and seventeenth centuries. The rise of professionalism in many arenas of life meant that activities and services that people had always performed for themselves or for their neighbors and families were taken over by a body of paid experts, who were licensed or otherwise recognized as being the guardians of an officially approved and restricted body of knowledge.

12. Angela Y. Davis, *Women, Race, & Class* (New York: Vintage, 1983), 8–12.

The Catholic Church had for centuries served as a model for an approved body that dispensed approved grace. Many of the charges against Witches and heretics can be seen as charges of giving or receiving “Brand X” grace, one that lacked the official seal of approval; of transmitting knowledge without approval. Witches’ powers, whether used for harming or for healing, were branded as evil because they came from an unapproved source.¹³

During the medieval period, women were in charge of caring for and healing the body by employing traditional forms of knowledge that were based on the use of herbs in the context of ritualistic practice. Female caregivers, whether scholars or midwives, represented a threat to the professional orders, at the center of which were the new information experts, who would soon be legitimized as scientific, and who included those in the field of medicine. Such members of these orders would organize to form guilds at the beginning of the sixteenth century. Licenses to regulate the exercise of the medical profession were created. These excluded white women and nonwhite people of all genders who were learned in pharmacology.

At the end of the Middle Ages, the drainage of lakes and swamps, the cutting of forests, the fencing of land, the institution of private property for farming and cattle raising worked simultaneously to crush the pagan community, where the mythical forces of the popular imagination and the ecosystem were located, and in which grew those plants and substances used in the “art of witchcraft.” From this

13. Starhawk, *Dreaming*, 199.

perspective, the persecution of witches can be interpreted as a war between expert knowledge and the non-professional knowledge of the multitude, a war between white patriarchal power and narcosexual knowledge as it was traditionally practiced by women, colonized peoples, and non-authorized sorcerers. It became a matter of exterminating or confiscating a certain ecology of body and soul, hallucinogenic treatments, and forms of pleasure or excitation. Modern colonial capitalist knowledge came to pathologize those technologies of subjectification produced by the collective and physical experience of rituals, the process of the transmission of symbols, and the absorption of any hallucinogenic or sexually arousing substances. Using the accusation of heresy and apostasy (denial of God), witch hunts did nothing more than conceal the criminalization of practices of “voluntary intoxication” and sexual and hallucinogenic self-experimentation. It was on this forced oversight that electrical and hormonal modernity would be erected.

SOMATIC FICTIONS: THE INVENTION OF SEX HORMONES

The sweet ferment of subjectivity eating away at itself.

—PETER SLOTERDIJK¹⁴

Everything we are today, our way of comprehending ourselves as free, individual, and desiring bodies, begins with printing, the Industrial Revolution, magnetism and its transformation into electricity, rapid transport, long-

14. Peter Sloterdijk, *Sphères*, trans. Olivier Mannoni, *Ecumes*, vol. 3 (Paris: Hachette Littératures, 2003), 26.

distance communication, and the organization of the modern city and its territorial grid. It also begins with the displacement of millions of non-white human bodies from Africa to Europe and America as labor and as a reproductive force for capitalism, but also as bodies used to produce pleasure and wealth. It also includes the commercialization of white male bodies as prostheses of wage-earning industrial work; the transformation of the white female body into a reproductive, domestic being; and the changing of the surface of the planet into a single, endless railway . . . In this context dominated by communication, travel, trade, connection, and distribution, it isn't surprising that a growing interest in the circulation of fluids and transmission of information inside the body came to the fore, to create conditions for the invention of hormones as communicating secretions.

From the beginning of the twentieth century to the current day, the processes of the imagining and conceptualizing of hormones, as well as their production techniques, have been carried out using animals and then human guinea pigs, usually coming from the disciplinary institutions to which they had been sent (army, jail, psychiatric hospital, school . . .) or from colonized territories regulated by a new articulation of sovereign (necropolitical) and biopolitical techniques.¹⁵ Bodies of rats, rabbits, chickens, bulls, pigs; the “infrahuman” bodies of “niggers,” “nuts,” “fairies,” “criminals” . . . Our models for gender—which are not only conceptual categories but also embodied somato-political

15. For more about the articulation of sovereign and biopolitical regimes, see Roberto Esposito, *Bios: Biopolitics and Philosophy*, trans. Timothy Campbell (Minneapolis: University of Minnesota Press, 2008), 33–34.

fictions—were manufactured at the crossroads at which human, the supposedly nonhuman, and animal meet. Such a process obviously suggests a complex feedback relationship: human and animal are, as Donna J. Haraway has argued, the technobiocultural results of these practices of discursive materialization, which unite and separate them with the same movement. Once again, this traffic begins in the biological laboratories.

In 1767, the surgeon John Hunter, brother of the famous anatomist William Hunter, performed the autograft tissue transplantation of gonads onto castrated rats, and experimented with the heterograft transplantation of cocks' testicles into the abdominal cavity of hens, which led to his establishing for the first time a relationship between testicles and masculinity.¹⁶ A century later, Arnold Adolf Berthold, a physiologist at the University of Göttingen, engaged in a series of experiments on roosters, removing their testicles and transplanting them onto another place on the body. His treatise, which was published during a period when the notions of “heterosexuality” and “homosexuality” were being invented as clinical concepts, would be one of the first to resort to the heterosexual rhetoric of male superiority and the complementary nature of the sexes, as an explanation for variations in internal secretions.¹⁷ What interests me about this—aside from the heteroscientific caricature created by Berthold's seeing the

16. Jan Bondeson, *A Cabinet of Medical Curiosities* (London: I.B. Tauris, London, 1997), 187.

17. This treatise on anatomy and physiology by Berthold has been abundantly analyzed by such contemporary female readers as Nelly Oudshoorn and Anne Fausto-Sterling, who have underlined the use of gender metaphors within biological narratives. Numerous accounts and critiques of the cultural history of scientific technical practices that led to the invention of hormones as pharmacological artifacts are also available. See Anne Fausto-

roosters given testicles “as warriors sent out in pursuit of the hens” and castrated capons as “languid and peace-loving”—is the way in which an internal secretion is interpreted for the first time as distributed information. His treatise concludes with the necessary condition of a chemical, rather than neuronal, transmission of the information contained in the testicles, since these secretions seem to circulate through the entire body by means of the bloodstream and are not dependent on the location at which the testicles were reimplanted.

Toward the end of the nineteenth century, it seemed probable that the “internal secretions” of certain organs were the origins of physiological processes in different parts of the body.¹⁸ Charles-Edouard Brown-Séquard, the founder of “organotherapy,” focused on the sex glands and decided to employ “animal organ extracts” to therapeutic ends. Extracts from testicles, thought Brown-Séquard, could guarantee eternal youthfulness and vigor for men. Similarly, potions containing extracts of guinea pigs’ ovaries were used to treat various forms of uterine disease, as well as cases of hysteria.¹⁹ However, the unusual thing about Brown-Séquard, which would place him at the edge of the scientific conventions of the time, is his penchant for self-experimentation and public claims regarding such processes, the way in which he becomes fascinated by the

Sterling, *Sexing the Body: Gender Politics and the Construction of Sexuality* (New York: Basic Books, 2000); Nelly Oudshoorn, *Beyond the Natural Body: an Archeology of Sex Hormones* (New York: Routledge, 1994). See also Chandak Sengoopta, *The Most Secret Quintessence of Life, Sex, Glands and Hormones 1850–1950* (Chicago: University of Chicago Press, 2006), 33–36.

18. Nelly Oudshoorn, “Hormones, technique et corps: L’archéologie des hormones sexuelles 1923–1940,” *Annales HSS* 53, no. 4–5 (juillet–octobre 1998): 775–93.

19. *Ibid.*, 779.

increases promised by these extracts and uses his own body as a field for clinical experimentation.

The science historian Chandak Sengoopta reports that in 1889 Brown-Séguard “nearly ruined his hard-won reputation by declaring before an assembly of august scientists in Paris that he had ‘rejuvenated’ himself by injections of testicular extracts of dogs and guinea pigs.”²⁰ The results, he proclaimed, were “spectacular”: a marked gain in vigor and mental lucidity. In addition, he maintained that the female patients to whom he had administered preparations of ground guinea pig ovaries had also experienced physical and mental improvements. Although several doctors reacted to these affirmations with skepticism, organotherapy would become enormously popular. “Within a decade, however, the new treatments fell into disrepute. Brown-Séguard admitted that the effects of his testicular injections were short-lived, probably the result of the power of suggestion.”²¹

Brown-Séguard’s failed experiment would, however, contribute to the elaboration of a theory on the long-distance transmission of bio-information, in which secretions would for the first time be understood as resembling “chemical messages.”²² A few years later, Edward Schäfer, a professor of physiology at London University College, measured the effects of injecting adrenal, thyroid, pancreas, and liver extracts into the bloodstream. Schäfer recorded, “Every part of the body does, in fact, take up materials from the

20. Sengoopta, 36–37. See also, Anne Fausto-Sterling, *Sexing the Body*, 182.

21. Fausto-Sterling, *Sexing the Body*, 149.

22. *Ibid.*, 150.

blood, and does transform these into other materials. Having thus transformed them, they are ultimately returned into the circulating fluids and in that sense every tissue and organ of the body furnishes an internal secretion.”²³

The year is 1905. Freud writes his *Three Essays on the Theory of Sexuality*, and Dr. Ernest Henry Starling and William Bayliss invent the concept of the hormone. While Freud is imagining an invisible geography that he calls “the unconscious”—a virtual space that is both deep within and parallel to the body and in which desire, the affects, and the sexual identity of the subject are at play—science, emerging biotechnology, and disciplinary institutions are taking on subjectivity and sexuality and transforming them into biochemical nodes of technical management. While Freud is inventing sexuality as an entity independent of anatomical sex, Starling and Bayliss are studying human reactions as if they were the effects of substances released from different parts of the body. Their breakthrough was the identification of what they called “secretin,” a substance produced by the duodenum that stimulated pancreatic secretion.²⁴ Secretin will become the paradigm for a new kind of physical functioning that they name *hormone*, from the Greek *horman*, which means to excite, or activate, and which worked, independently from the nervous system, as a *chemical messenger*. As a historian of medicine has noted, “The middle of the nineteenth century finds an awareness of glands that had no ducts, glands that communicated

23. E.A. Schäfer, “On Internal Secretions,” *Lancet* (August 10, 1895): 321–24.

24. Icon Group International, *Hormones: Western Timeline History, 1656–1972* (San Diego: ICON Group International, 2009), 6.

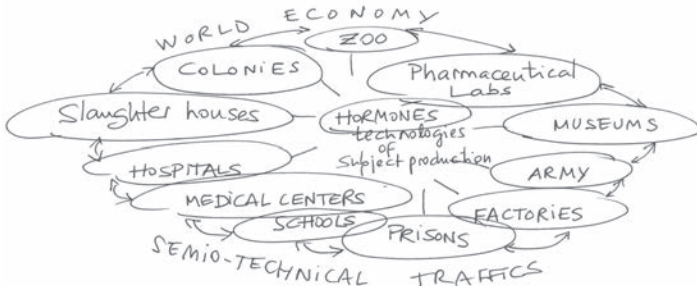
only with blood vessels.”²⁵ The paradigm of wireless sex had been established.

Within a European colonial and industrial capitalist context defined by the practices of telecommunication, travel, traffic, and exchange, Starling and Bayliss are conceptualizing hormones according to an early form of information theory: “These chemical messages, or hormones, as they could be called, have to be carried from the organ where they are produced to the organ which they affect by means of the bloodstream and the continually physiological needs of the organism must determine their repeated production and circulation throughout the body.”²⁶ The invention of the notion of “hormone” represents an epistemological break, not only in relation to the modern model of the mechanical body, but also in relation to the emerging psychological model of the sexual unconscious. Whereas Freud is conceptualizing the subject as an archeological terrain of invisible signs, the hidden strata of which have to be revealed by patient linguistic excavation, Starling and Bayliss are sketching a diagram of the modern individual as a silent biochemical communication network, a complex interlacing of densely connected circuits that emit, receive, and decode biochemical information. In opposition both to Descartes’s and La Mettrie’s mechanical body, and to the Freudian archeology of the ego, appears a new hormonal, electrochemical, media-related, and ultraconnected sub-

25. John Henderson, “Ernest Starling and ‘Hormones’: an historical commentary,” *Journal of Endocrinology* 184 (January 2005): 5–10, doi: 10.1677/joe.1.06000.

26. Ernest Starling, “The Croonian Lectures on the Chemical Correlations of the Functions of the Body” (lecture, the Royal College of Physicians of London; June 20, 22, 27, and 29, 1905), 6.

ject. The modern biopolitical body, as Foucault suggested, is no longer a one-dimensional surface where power, law, and punishment come to be inscribed, but rather a *thick interiority* where life, but also political control, take place in the form of exchange, traffic, and communication.²⁷ If biopower has to go into and through the body (*passer à l'intérieur du corps*), the space of the body must be extended, inflated, opened up, and magnified to become a communication system. In 1904, Maurice Adolphe Limon gave the name *endocrinology* to the science of internal secretions, defining *interiority* (*endo* means “inside” or “within” in Greek) as a space of intense, yet invisible, chemical traffic.



Between 1860 and 1910, the fifty-year period during which the concept of hormone is being elaborated, James Clerk Maxwell announces the existence of radio waves and Heinrich Rudolph Hertz demonstrates that rapid variations of electric currents can be projected into space in the form of waves that resemble those of light or heat, and

27. Michel Foucault, “Les rapports de pouvoir passent à l’intérieur du corps,” [1977] in *Dits et Ecrits II* (Paris: Gallimard, 1994), 228–36.

these discoveries permit the invention of the telegraph and the radio. The press and mail delivery are now available to the masses. Hormonal theory represents another form of mass communication—an attempt to conceptualize the body as a system of biocommunication. Endocrinology can be read as the biologization of a theory of broadcasting, distribution, and treatment of information—in a world gradually undergoing globalization. For Starling and Bayliss, hormones are characterized by their capacity for invisible action from a distance: “a substance which has to be turned out into the blood at repeated intervals to produce in some distant organ or organs a physiological response proportional to the dose.”²⁸ Starling described hormones as “carriers” of “chemical messages transported by blood from the organ where they are produced to the organ where they must act.”²⁹ The hormone, then, operates according to a logic of tele-action: the capacity to modify an organ by the emission of biocoded information from some distance away. Conceptualized as a tele-transmitter, the hormone implies transport, distribution, exportation, availability for extradomestic use, outflow, escape, flight, exodus, and exchange; but also reading, decodification, and translation. Similar to the process of writing in Derrida’s deconstruction, Starling’s and Bayliss’s hormone is a biological postcard, a chemical telephone message, a long-distance biocall.³⁰ It confronts us with a new way of understanding

28. John Henderson, “Ernest Starling and ‘Hormones,’” 9.

29. Ernst Starling, “The Croonian Lectures on the Chemical Correlations of the Functions of the Body,” 6.

30. For a deconstructive theory of the telephone that could respond to this genealogy of hormones see Avital Ronell, *The Telephone Book, Technology, Schizophrenia, Electric Speech* (Lincoln, NE: University of Nebraska Press, 1991).

the production of power and subject, distinct from that suggested by Foucault in his description of the orthopedic and architectonic disciplinary mechanisms of the prison or the panopticon. The tele-cinematic hormonal theory is a biomedica theory, a theory about a form of communication in which the body is no longer just a means of transmission, distribution, and collection of information, but the *material effect* of these semiotechanical exchanges. We have come face to face with a new understanding of space and the body, but also of the production of power and of the subject (both subjugation and subjectification) that, I shall argue, demands a new theory of biopolitics going beyond the one developed by Foucault in *Discipline and Punish* and the *History of Sexuality*. What are the specific practices through which power is spatialized according to endocrinological knowledge and techniques? How do these practices differ from the institutional disciplinary architectures of the hospital and the prison that defined, according to Foucault, nineteenth-century biopolitics?

The apparatus (*dispositif*) of subjectification that we can reconstruct starting with hormonal theory at the beginning of the twentieth century is a collection of institutional and technical networks in which living artifacts are produced, and are given political recognition within a predetermined cultural context.³¹ The pharmacopornographic subject will emerge from a techno-scientific-pop apparatus that con-

31. In the pharmacopornographic regime, the difference between "apparatus" and human being, as described by Giorgio Agamben, is put into question. On the contrary, the techno-living emerges like an apparatus from a process of techno-political construction; cf. Giorgio Agamben, *What Is an Apparatus?* and *Other Essays*, trans. David Kishik and Stefan Pedatella (Stanford, CA: Stanford University Press, 2009).

nects elements as heterogeneous as slave ships, whale testicles, impotent soldiers, penal institutions, pregnant slaves, biochemical texts, and currency. As Nelly Oudshoorn has emphasized, the emergence of sex endocrinology was characterized by a shift from descriptive, morphological approaches to experimental approaches, which created the need for obtaining new research materials.³² Claiming that sex hormones were produced and stored in the gonads, endocrinologists and pharmaceutical industries fought to obtain large quantities of ovaries and testicles, both animal and human.

Looking for a solution to the shortage of glandular extracts, Alan Parkes, an English physiologist, obtained blue whale ovaries with the help of the British Museum.³³

Because whales do not habitually swim near laboratories in the western world, this source was not a structural solution to the problem of scarcity. To gain access to the enormous quantities of required material, scientists had to create new infrastructural arrangements to secure a steady supply of organic matter. The previous arrangements in the laboratory and the clinic were no longer sufficient. To find access to research materials, laboratory scientists and gynecologists had to leave their laboratories and clinics. The most likely places where large quantities of ovaries and testes could be obtained were the slaughterhouses.³⁴

32. Nelly Oudshoorn, *Beyond*, 67–68.

33. *Ibid.*, 68.

34. *Ibid.*

A similar process of glandular expropriation and industrialization was taking place with human animals. Laboratories waited for the execution of men who had received the death penalty in order to collect their testicles.³⁵

These new scientific and commercial practices established the first regular trafficking networks of biological materials among gynecologists, laboratory researchers, pharmaceutical industries, prisons, and slaughterhouses. Sex hormones are the result of such traffic. They *are* this traffic. Each time I give myself a dose of testosterone, I agree to this pact. I kill the blue whale; I cut the throat of the bull at the slaughterhouse; I take the testicles of the prisoner condemned to death. I become the blue whale, the bull, the prisoner. I draft a contract whereby my desire is fed by—and retroactively feeds—global channels that transform living cells into capital.

In 1926, this dense trafficking of body fluids, tissues, and organs used in attempts to detect the raw materials that would allow the “manufacture” of hormones led two German gynecologists to suggest that the highest hormonal concentration was found in human urine.³⁶ This waving of a magic wand debunked the idea of the gonads as the organic medium of hormones and achieved a radical modification of those institutional spaces that had until then held power over sex hormone research. The pharmaceutical firms,

35. On the trafficking of animal and human organs and glands, see David Hamilton, *The Monkey Gland Affair* (London: Chatto & Windus, 1986), and David Hamilton, *A History of Organ Transplantation*, (Pittsburgh: University of Pittsburgh Press, 2012).

36. Hans O. Haterius, “The Female Sex Hormones,” *The Ohio Journal of Science* 37, no. 6 (November 1937): 394–407.

which had contracts with the slaughterhouses to obtain testicles or ovaries from animals sacrificed for this purpose, lost their dominant position. The discovery of urine as a reserve of hormones changed power relationships between production groups. Henceforth, gynecological clinics would be first in line for experimental production because it is easy to obtain urine from the bodies of pregnant women. For male urine, the pharmaceutical laboratories turned to nonmedical institutions, places where large concentrations of bioproducer bodies were available: the army, schools, factories, prisons, police stations . . . “In 1931, the German chemist Adolf Butenandt collected 25,000 liters of urine on the premises of the Berlin police stations. From this method, he was able to isolate 50 mg of a crystalline substance that he called ‘androsterone,’ thinking that it was the male hormone par excellence. This was the first time such a term had been used.”³⁷ The concentration camp (a hybrid of the animal slaughterhouse and the colonial laboratory) would reduce human bodies to biomaterial for research, revealing the inner links between the biopolitical apparatus and necropolitical techniques.³⁸

The process of isolating hormones allows us to establish a cartography of sexopolitical disciplinary spaces and locate within them the different institutions where fluids and organs were collected and treated as technical enclaves

37. Adolf Butenandt received the Nobel Prize for chemistry in 1939. See Jie Jack Li, *Laughing Gas, Viagra, and Lipitor: The Human Stories behind the Drugs We Use* (New York: Oxford University Press, 2006), 114.

38. See Robert Jay Lifton, *The Nazi Doctors: Medical Killing and the Psychology of Genocide* (New York: Basic Books, 2000).

of gender production. The trafficking of human fluids developed among the different disciplinary institutions of reclusion, which came to share a common system of production of body-capital: the gynecology clinic, hospital, factory, prison, laboratory, pharmaceutical industry, concentration camps . . .

A network of power, knowledge, and capital would determine where and how different fluids, tissues, organs, and bodies circulate, creating differences along gender, sex, race, disability, and class lines. Fluids from women's bodies would also have to move from a disciplinary space that was difficult to reach (the space of domesticity) to spaces to which the mechanisms of public management are strongly attached (the hospital, the gynecology center) only to return later to the supposedly private space of the home where hormones were distributed on a massive scale in the form of the Pill. Racialized bodies on the paths of slavery or extermination and bodies stigmatized as "handicapped" or sexually abnormal would be rapidly inserted into this industrial system of capitalization of the living. A large part of the clinical tests for hormones would therefore be carried out in colonial (for example, the Pill would be mostly tested on Puerto Rico's non-white population) and psychiatric (homosexuals and transsexuals would be declared mentally ill and subjected to violent surgical and hormonal protocols whereas "disabled" bodies would be sterilized³⁹) enclaves, as well as among the pregnant populations of penitenti-

39. On disability and sterilization see Marsha Saxton, "Disability Rights and Selective Abortion," in Lennard J. Davis, ed. *The Disability Studies Reader*, (New York: Routledge, 2006), 105–16.

ries and other correctional settings, until hormonal technologies could be assimilated by the anonymous masses in domestic spaces and schools.

The epistemological model for the study and production of hormones is built on animal “sex change,” even if the actual notion of “transsexuality” does not appear until later, with the works of Magnus Hirschfeld, D. O. Caudwell, and Harry Benjamin: “At the turn of the twentieth century scientists began to search actively for chemical substances in the sex glands using techniques of castration and transplantation. In this surgical approach, scientists removed ovaries and testes from animals like rabbits and guinea-pigs, cut them into fragments, and reimplanted them.”⁴⁰ The psychological concept of transsexuality popularized by Benjamin in the 1960s ensues—paradoxically—from this game of cut-and-paste on the bodies of non-human animals, even though the notion of “psychological sex” conflicts with the scientific idea of “animality.”

After the 1930s, hormonal classification becomes more complex; for the first time, it seems clear that no hormones are specific to one or the other sex, but that all bodies produce both estrogen and testosterone, the difference lying in the variable quantities of this production. Nevertheless, the terminology and technical use of male and female hormones remains the same: sex hormones are defined as *chemical agents* of masculinity and femininity, working as “the missing link between the genetic and the physiological models of sex determination.”⁴¹

40. Oudshoorn, *Beyond*, 19.

41. *Ibid.*, 21.

Hormones, beginning with estrogen and progesterone and followed by testosterone, go from having the status of a molecule to having that of *pharmakon*, from silent chains of carbon to biopolitical entities that can be legally inserted in a human body in a manner that is intentional and deliberate. Hormones are bio-artifacts made of carbon chains, language, images, capital, and collective desires. This is how they will reach me.

POP CONTROL: MODES OF PHARMACOPORNOGRAPHIC SUBJECTIFICATION

Following the gradual change in their consumption since their invention at the end of the 1940s, estrogen and progesterone, the molecular basis for the production of the contraceptive pill, are today the most manufactured synthetic substances in all the pharmaceutical industries of the world; they are also the most employed molecules in the entire history of medicine. The surprising thing is not this massive industrial production of hormones placed under the category of *sexual*, but the fact that these molecules were used primarily, and almost exclusively, on women's bodies, at least until the beginning of the twenty-first century.⁴² The fiction of biofemininity, as it is "produced" in the West today, doesn't exist without a whole array of media and biomolecular technologies: "Diagnostic pro-

42. On the pharmaceutical management of women's bodies, see Anita Harden, Janita Janssen and Ivan Wolfers, *Marketing Fertility. Women, Menstruation and the Pharmaceutical Industry* (Amsterdam: WEMOS, 1989).

cedures and therapies such as in vitro fertilization (IVF), hormone replacement therapy (HRT), screening programs for breast and cervical cancer, the contraceptive pill, and a wide variety of other contraceptives for women have accentuated the distinct reproductive role of women and thus designated the female body as a natural object of intervention.”⁴³ Cis-females, like hormones, are modern industrial artifacts, techno-organisms from the capitalist-colonial laboratory. This pharmacological imbalance in the production of gender changes after 1998 with the discovery of the side effects on the penis of the molecule sildenafil.⁴⁴ In 1969, when French feminist activist Françoise d’Eaubonne invented the term *phallocracy* to refer to the symbolic and political domination of the penis in Western culture, she couldn’t have imagined that this same penis would become the object of intense surveillance and that it would quickly find itself at the center of a rise in pharmacopornographic normalization. Between the middle of the twentieth century, when David O. Caudwell, Harry Benjamin, and John Money experimented with the effects of sex hormones on genital response to excitation, and the beginning of the twenty-first, when the laboratories Pfizer, Bayer, and Lilly, using the names Viagra, Levitra, or Cialis, quarreled over the commercialization of a vasodilator molecule that can prompt a lasting erection, masculinity ceased to be an exclusive preserve of natural privilege and became a domain of capitalization and biopolitical engineering. At

43. Nelly Oudshoorn, *The Male Pill: A Biography of a Technology in the Making* (Durham, NC: Duke University Press, 2003), 4.

44. On the pharmacological use of sildenafil, see Meika Loe, *The Rise of Viagra: How the Little Blue Pill Changed Sex in America* (New York: New York University Press, 2006).

the same time, male impotence went from being a shameful private affair to being a health condition. As a pharmaceutical product, the sildenafil molecule has enjoyed the fastest takeoff ever recorded for a new drug.⁴⁵ The social anxiety and economic speculation that have sprung up around the penis during the first decade of the new millennium are without precedent. Today, instead of using the term *phallocracy*, it makes more sense to speak of *phallocontrol*—referring to that collection of pharmacopornographic mechanisms struggling to design the frontiers of the new technomascularity. The time of female monopoly over victimization is drawing to a close; we are entering an era in which the technomolecular control of sex, gender, and sexuality will extend to everything and everyone. The twenty-first century will be the century of the production and pharmacopornographic control of masculinity. Viagra and testosterone are currencies of that new molecular production.

Hormonal research has been characterized historically by a second biopolitical imbalance: pharmacological interest in testicles and male hormone supported the normative representation of men's bodies, associating testosterone from the start with youth, strength, sexual desire, vigor, and vital energy; conversely, research projects on hormones considered to be female were aiming only to control women's sexuality and their capacity for reproduction. Masculinity is still produced according to a model of sovereign patriarchal power, whereas femininity is regulated according to a set of biopolitical techniques intended to control

45. B. Handy, "The Viagra Craze," *Time* 151 (May 4, 1998): 39.

the reproduction of the nation's population in hygienic and eugenic terms, enforcing the reduction of "deviancy" understood in terms of class, race, sexuality, sickness, and disability.⁴⁶

In both cases, the objective is the normalization and capitalization of the living. On one side, Viagra works as a normative molecular prosthesis that comes to repair the nonerectile male body considered as sperm producer. On the other side, women's bodies are still constructed by the pharmacopornographic regime as a public reproductive system (womb, reproductive cells, vagina, placenta . . . understood as "public goods" and research materials) at the service of the national interest.

There is no universal human body, but a multiplicity of gendered, racialized, and sexualized living beings and organic tissues. Within modern capitalism, male and female hormones and organs don't have the same biopolitical value. As Nelly Oudshoorn observes:

With the introduction of the concept of sex hormones, scientists explicitly linked women's reproductive functions with laboratory practice. The study of women as the Other was thus extended from the clinic to the laboratory and thereby firmly rooted in the heart of life sciences. . . . This asymmetry in the institutionalization of female and male reproductive bodies in medicine prevailed until well into the second half of the twentieth century. It was only in the late 1970s that the scientists and clinicians

46. For a critical reading of biopolitical regulations, see Lennard J. Davis, "Constructing Normalcy: The Bell Curve, the Novel, and the Invention of the Disabled Body in the Nineteenth Century," in *The Disability Studies Reader*, ed. Lennard J. Davis (New York: Routledge, 1997), 9–28.

established andrology as a medical specialty devoted to the study and medical treatment of male reproductive bodies.⁴⁷

A brief genealogy of surgical practices reveals this biopolitical asymmetry. Beginning in 1870, the ablation of ovaries became a standard operation for curing certain “menstrual disturbances and various mental illnesses ascribed to the ovaries.”⁴⁸ On the other hand, the ablation of testicles was a technique reserved for penal castrations (practiced, for example, in the United States on black subjects accused of having raped white women),⁴⁹ used for the eugenic treatment (both surgical and chemical) of “maniacs” and the “mentally retarded” and for therapy for “sexual psychopaths.” The biopolitical techniques of castration remained at a distance from the white, male, middle-class heterosexual body; its masculinity, as well as its organic enclaves—testicles and penis—were the embodiment of sovereign power and could not be simply uprooted.⁵⁰

At the beginning of the twentieth century, the pharmaceutical industry became interested for the first time in the production of preparations from ovarian extracts for the treatment of hysteria and infertility in cis-females, as well as testicular extracts of animal origin for the treatment of

47. Oudshoorn, *Male Pill*, 6.

48. Harold Speert, *Obstetrics and Gynecology: A History and Iconography* (New York: Informa Healthcare, 2004), 407.

49. The foundations of penal castration for sex crimes are linked as much to the production of race as to that of gender; see Davis, “Rape, Racism, and the Myth of the Black Rapist,” chap. 11 in *Women, Race & Class*.

50. See Piotr O. Scholz, *Eunuchs and Castrati: A Cultural History* (Princeton, NJ: Marcus Weiner Publishers, 2001); Gary Taylor, *Castration: An Abbreviated History of Western Manhood* (New York: Routledge, 2002).

impotence or sexual fatigue. During World War I, German laboratories were pioneers in experiments on dogs using derivatives of animal testosterone, but also on human bodies. In the 1930s, the laboratory Schering AG carried out the harvesting and conversion of urine; and after the 1960s, this laboratory would become the leader in the production and marketing of the contraceptive pill Yasmin.

After World War II, infectious diseases in wealthy countries fell behind illnesses related to aging, the management of sexuality, the modification of affect and mind control, and the regulation of reproduction and the body's immune system in highly toxic environments. This is the point at which the production and commercialization of synthetic hormones unveil their true pharmacopornographic function.

Testosterone bursts onto the sports scene after 1950. John Ziegler's laboratories in Germany produce Dianabol (an oral variant of anabolic steroids that is not very effective because stomach enzymes can destroy testosterone molecules) and Methandrosterolone (the injectable, more effective variant) to supplement the American weightlifting team for the Olympic Games. After the 1960s, anabolic steroids enter the pharmaceutical market, along with growth hormone, and become the molecular hardware of such well-known users as Arnold Schwarzenegger and Sergio Oliva. From then on, all steroids, testosterone, anabolics, and so on, will be sold on the medical pharmaceutical market as well as on other markets, open or black. Contemporary men live in technotesto times.

THE EDIBLE PANOPTICON

During the period when the notion of gender, the H-bomb, silicone breast implants, electric prostheses, the computer, and Formica furnishings begin circulating in Western societies, a pioneering domestic, portable, and consumable nanotechnology of hormonal modification is produced. In 1951, a mistake made by Gregory Pincus at G. D. Searle and Company laboratories leads to the invention of the first contraceptive pill in the form of the molecule norethindrone, a synthetic variant of the active molecule progesterone that can be administered orally. The production of a portable and edible contraceptive pill enables the entrance of synthetic hormones (and therefore endocrinological and governmental birth control techniques) into the domestic space, which becomes a consumption/production knot within the pharmacological network. This is part of a larger biopolitical process of the medicalization and pharmacological regulation of domesticity that was already at work earlier in the twentieth century.

At the farthest boundary of the same traffic, moving from the domestic to the colony, endocrinological programs for controlling natality and gender production were targeting the racialized body, circulating first within the slavery trade and later within urban segregated spaces, as well as the “disabled,” or the “sexually deviant.” As we will see, most clinical trials with sexual hormones are done in colonial settings, in psychiatric institutions (where homosexual, intersexual, and transsexual bodies, regarded as

physical or mentally ill, are submitted to endocrinological and surgical procedures), and in penitentiaries and correctional institutions until hormones, produced and designed as consumption goods, end up being absorbed into the everyday American heterosexual domestic space.

There is a Pill geography where bodies, fluids, molecules, and capital are produced and distributed. An examination of the economic and technical networks that resulted in the production of the Pill reveals that, while originating with Pincus's project, the Pill was perfected by John Rock within the unexpected framework of experimental research on aiding procreation for sterile white Catholic families.⁵¹ Pincus's and Rock's research projects, although conflicting in relation to their vision of the function of white women in society, shared an understanding of nonwhite and deviant subjects as bodies whose reproductive power should be restricted by the state in order to "reduce hunger, poverty, and disease while fostering economic stability."⁵² The antibaby molecule was intended to be made into a "simple, cheap, safe contraceptive to be used in poverty-stricken slums, jungles, and among the most ignorant people."⁵³ In the context of an emerging politicization of racial, ethnic, and sexual minorities in the United States, the contraceptive molecule was thought of as an urban eugenic device and as a method of controlling nonwhite population growth, as

51. For the invention of the Pill, see Marks, *Sexual Chemistry*, 89–137. See also Tone, *Devices*, 203–85.

52. Tone, *Devices*, 207.

53. Margaret Sanger's declarations quoted by Tone, *Devices*, 207.

well as the population growth of nations that had not yet entered postwar liberal capitalist economies.

Protocols of research and evaluation of the Pill's technical effectiveness reveal its disciplinary and colonial roots. After the success of the preliminary Boston trials for the Pill in 1954 and 1955, John Rock and Gregory Pincus needed a large-scale human group to test the new molecule in order to receive approval from the US Food and Drug Administration, or FDA, to bring the drug to market. The first large clinical contraceptive pill trials were performed by Searle on several groups of female psychiatric patients at Worcester State Hospital and on male prison inmates in the state of Oregon in 1956–57. The tests were intended to measure the effectiveness of using synthetic oral hormones as a method of birth control in women, and also the effectiveness of these substances in controlling and decreasing “homosexual tendencies” in men.⁵⁴ In fact, the relationship between hormonal research and the Worcester State Hospital was crucial for the development of the Pill. Founder and feminist activist Katherine McCormick had decided to invest in research on the Pill in order to fight the hereditary transmission of mental illness.⁵⁵ Her husband was diagnosed with schizophrenia, and since at that time the illness was considered hereditary, she tried to locate a safe way of preventing pregnancy in people suffering from the condition who were potential parents. In 1944, the McCormicks helped Dr. Hudson Hoagland found the Worcester Foun-

54. Tone, *Devices*, 220.

55 See Armond Fields, *Katharine Dexter McCormick: Pioneer for Women's Rights* (Westport, CT: Praeger, 2003), 115.

dation for Experimental Biology, dedicated to the study of the influence of hormones on mental conditions, and this transformed the Worcester Hospital into a major pharmacological laboratory.

Constructed in 1833 following the Thomas S. Kirkbride plan, also known as the “building as cure” theory, according to which architecture itself was meant to have a therapeutic effect, the Worcester State Hospital in Massachusetts was one of the most prestigious institutions of its time, well known for having been visited by Freud in 1909 when he traveled to the United States. The Worcester State Hospital was the American version of the modern *machine à guérir* (cure machine), to use the expression coined by Jacques-René Tenon in his *Mémoires sur les hôpitaux de Paris* (1788), which Michel Foucault used as the key document in his study of the emergence of a new set of techniques of “public hygiene” that came to spatialize the sick body within the modern city.⁵⁶ As Foucault argued, after the end of the eighteenth century, the modern hospital and the prison became the paradigmatic architectures of a pervasive medicalization of social and political space. A visual and spatial machinery to produce knowledge about madness and reason, the Worcester Hospital combined prison architecture with large collective rooms and numerous workshops for experimental treatment, such as saunas and rotating chairs

56. René Tenon, *Mémoires sur les hôpitaux de Paris* (Paris: Doin, 1998). This text was originally published in Paris in 1788. A similar plan was also at work in the projects by Bernard Poyet and C.P. Coquéau. For a discussion of these hospital projects, see Colin Jones and Michael Sonenscher, “The Social Functions of the Hospital in Eighteenth-Century France: The Case of the Hôtel-Dieu of Nîmes,” *French Historical Studies* 13, no. 2 (Autumn 1983).

intended to cure patients. Whereas the architecture and the treatment were still derived from the nineteenth-century disciplinary biopolitical model for understanding madness and therapy, the hospital also introduced within its walls new “soft” and molecular techniques invented during the Cold War period. But mental and prison institutions were not ideal settings for testing the Pill.

The Worcester and Oregon trials were not enough to obtain approval from the FDA to commercialize the Pill or to test the ability of ordinary women to take the Pill regularly outside medical institutions. Since strong anti-birth control laws in Massachusetts and in many other states made it impossible for Searle to conduct the large study of humans required by the FDA, it turned to Puerto Rico, which already had a long history of governmental birth control programs. The pseudocolonial island of Puerto Rico became the most important clinical site for testing the Pill outside the national disciplinary institutions of the asylum and the prison and functioned as a parallel, life-sized biopolitical pharmacological laboratory and factory during the late 1950s and early 1960s. During the Cold War period, Puerto Rico would become the United States’ biggest pharmacological backyard. The island was the invisible factory behind the Playboy mansion and the white liberated middle-class American housewife.

In 1955, American physician Edris Rice-Wray, the medical director of the Puerto Rican Family Planning Association, already working with Searle, offered Pincus the possibility of conducting the Pill trials at Rio Piedras, a suburb of San Juan where a new housing project had been set

up as part of a slum clearance campaign. In the summer of 1955, Pincus visited Puerto Rico and immediately decided that the Rio Piedras housing was the perfect location for a large-population, long-term Pill trial.

The general features of legally enforced pharmacological experimentation in an environment of imposed isolation spread from Europe and North America to colonial and postcolonial regions, transforming the design models of their penal and medical institutions.⁵⁷ Puerto Rico was a paradigmatic case of transition from the colonial regime to postcolonial economic and political control. At the end of the nineteenth century, the Spanish colonial regime left the island overpopulated and in extreme poverty. After the end of the anticolonial war of 1898, the island became a US territory. Already in 1917, the Puerto Rican ruling classes and the American government, inspired by neo-Malthusianism ideas, had drawn up the first population control plan for the island. In 1925, in the overpopulated slums of Ponce, Dr. José A. Lanause Rolón founded the Birth Control League, built on an educational program.⁵⁸ These early birth control programs understood sterilization as a safe means of reduc-

57. About disciplinary techniques in colonial settings, see Satadru Sen, *Disciplining Punishment: Colonialism and Convict Society in the Andaman Islands* (New York: Oxford University Press, 2000); Ian Duffield, "From Slave Colonies to Penal Colonies: The West Indians Transported to Australia," *Slavery and Abolition* 7, no. 1 (1986): 24–45. Imperial authorities also imposed racial quarantines between colonial settlers and indigenous people. See Barbara Bush, *Imperialism, Race, and Resistance: Africa and Britain, 1919–1945* (New York: Routledge, 1999); D.T. Goldberg, *Racist Culture: Philosophy and the Politics of Meaning* (Oxford, UK: Basil Blackwell, 1993), 3; Sheldon Watts, *Epidemics and History: Disease, Power, and Imperialism* (New Haven, CT: Yale University Press, 1997).

58. About Puerto Rico as experimental colonial site for contraception techniques, see Annette B. Ramirez de Arellano and Conrad Seipp, *Colonialism, Catholicism, and Contraception: A History of Birth Control in Puerto Rico* (Chapel Hill, NC: University of North Carolina Press, 1983).

ing natality and “cleansing” the slums, where reduction of population was to be a first step followed by urban modernization and the development of employment, to transform agrarian Puerto Rico into an industrial economy. In fact, Puerto Rico was not a stranger to forced sterilizations. As early as 1907, the United States had instituted public policy that gave the state the right “to sterilize unwilling and unwitting people.” By 1936, there were more than one hundred birth control clinics operating on the island under federal law. As Katherine Krase has argued, in order to “catalyze economic growth” and respond to “depression-era unemployment,” in 1937 the “Eugenics Board” passed Law 136, an event that signified the institutionalization of these population control programs and the legalization of sterilization techniques. “Both U.S. government funds and contributions from private individuals supported the initiative.”⁵⁹ Laws similar to Law 136 were passed in thirty states. These policies identified the “insane,” the “feeble-minded,” the “dependent,” and the “diseased” as incapable of regulating their own reproductive abilities, thereby justifying government-imposed sterilizations. Legitimizing sterilization for certain groups led to further exploitation, as group divisions were made along race, class, and disability lines.⁶⁰

From the beginning of the experimental trials with hormones, the challenge was how to switch from animals

59. Katherine Krase, “Birth Control—Sterilization Abuse,” *Our Bodies Ourselves*, accessed December 3, 2011, <http://www.ourbodiesourselves.org/book/companion.asp?id=18&compID=55>. Originally published in *Newsletter of the National Women's Health Network* (January/February 1996).

60. *Ibid.*

to human subjects confined to institutions and finally to the general population. As McCormick infamously said, in stressing the connection between imprisonment and scientific control, the key issue was to find a “cage of ovulating females”: “Human females are not easy to investigate as are rabbits in cages. The latter can be intensively *controlled all the time*, whereas the human females leave town at unexpected times so cannot be examined at a certain period; and they also forget to take the medicine sometimes—in which case the whole experiment has to begin over again, —for scientific accuracy must be maintained or the resulting data are worthless.” (emphasis in text)⁶¹ For Pincus, the island of Puerto Rico offered the most accessible and most easily monitored population pool that McCormick could ever want: the island itself was already a hermetic cage. Puerto Rican women were considered to be not only as docile as laboratory animals, but also as poor and uneducated and therefore an exemplary group: if they could follow the regimen involved in taking the Pill, any white American woman could do the same. The island of Puerto Rico itself was treated as an extended, nonwhite, female body to which the Pill was administered in terms of what Foucault called “urban therapeutics.”⁶²

As historians of medicine Jordan Goodman, Anthony

61. Katherine McCormick, quoted in Lara Mark “A ‘Cage of Ovulating Females.’ The History of the Early Oral Contraceptive Pill Clinical Trials, 1950–1959,” in *Molecularizing Biology and Medicine: New Practices and Alliances, 1910s–1970s*, eds. Soraya de Chadarevian and Harmke Kamminga (Amsterdam: Harwood Academic Publishers, 1998), 208.

62. Michel Foucault, “Le pouvoir psychiatrique (1974),” in *Dits et Écrits* (Paris: Gallimard, 2001), 1, 1543–54. Here Foucault studies the spatialization of the psychiatric power outside of the hospital.

McElligot, and Lara Marks have shown, Puerto Rico's trials are not an exception but rather belong to a larger history of colonial and hygienist scientific experimentation involving humans that occurred during the twentieth century: "Doctors and biohygienists became the determinators of a bioracially constituted state; they saw themselves as its gatekeepers and guardians, programmed with the mission to secure a utopian healthy society."⁶³ However, after World War II, with the scandals of Nazi medicine and the Nuremberg Code,⁶⁴ the role of the state in pharmacological and medical experimentation became less clearly visible, as this experimentation moved from state institutions to industrial pharmacological companies. As part of a larger mutation from a disciplinary to a pharmacopornographic regime, "research became 'de-centered' as it became more commercialized, and moved beyond the immediate sphere of the state or state-related agencies and transcended national borders, borne on the wings of multinational corporations."⁶⁵ The birth control programs tested in Puerto Rico clearly show the complicity between national eugenic programs and private pharmacological interests before the war and the transition from the colonial and state model to the postcolonial and neoliberal multinational model of drug production and population control after the 1940s.

63. Jordan Goodman, Anthony McElligot and Lara Marks, eds., *Useful Bodies: Humans in the Service of Medical Science in the Twentieth Century* (Baltimore: John Hopkins University Press, 2003), 5.

64. See George J. Annas and Michael A. Grodin, eds., *The Nazi Doctors and the Nuremberg Code: Human Rights in Human Experimentation* (New York: Oxford University Press, 1992).

65. Goodman, McElligot, and Marks, eds., *Useful Bodies*, 13.

From the Colonial Brothel to the Pharmacopornographic Lab

In the past few years, several historical essays have developed a postcolonial reading of the relationship between space, prostitution, gender, and race on the island of Puerto Rico. Radost Rangelova has argued that in Puerto Rico, the relationship between gender and space has been historically and socially contingent on colonial domination, the legacy of slavery, and racial purification of the nation.⁶⁶ We can conclude from studies by Eileen Suárez Findlay, Vázquez Lazo, and Laura Briggs on the history of prostitution in Puerto Rico before World War II that, beginning with the early years of colonization, the island functioned as a pornotopic colonial site and later became a post- and neocolonial site of pharmacological development.⁶⁷ Although colonially promoted from the time of Carlos I, prostitution entered the realm of legal, medical, and media discourse during the nineteenth century as female slavery turned into domestic and sex labor.⁶⁸ Conforming to the ideas of such European theorists as William Acton and Parent Duchâtelet, the management of spaces of prostitution within the island became a medical as well as colonial task that “enjoined a sharp geographic separation between *gente*

66. See Radost A. Rangelova, “House, Factory, Beauty Salon, Brothel: Space, Gender and Sexuality in Puerto Rican Literature and Film,” (PhD dissertation, the University of Michigan, 2009).

67. Laura Briggs, “Familiar Territory: Prostitution, Empires, and the Question of U.S. Imperialism in Puerto Rico, 1849–1916,” in *Families of a New World: Gender, Politics, and State Development in a Global Context*, eds. Lynne Haney and Lisa Pollard (New York: Routledge, 2003), 40–63; Eileen Suárez Findlay, *Imposing Decency: The Politics of Sexuality and Race in Puerto Rico, 1870–1920* (Durham, NC: Duke University Press, 2000); Nieve de los Ángeles Vázquez Lazo, *Meretrices: La prostitución en Puerto Rico de 1876 a 1917* (Hato Rey, Puerto Rico: Publicaciones Puertorriqueñas, 2008).

68. Briggs, “Familiar Territory,” 58.

decente and prostitutes,”⁶⁹ implementing a double process of inclusionary exclusion and spatialization of difference as techniques of urban formation.

For Rangelova, the traditional European and North American segregation of spaces according to gender (private/public, domestic/nondomestic) and sexuality (places for family and places for prostitution) was reorganized in Puerto Rico according to a colonial logic that separated reproductive spaces from prostitudinal spaces in terms of race. Black and poor working-class women were often represented as prostitutes, being excluded from the nineteenth-century autonomist narrative of the “*gran familia* of Puerto Rico.”⁷⁰ Kept separate from the “white” and the “mother” figure, poor nonwhite women were not understood as bodies for the reproduction of the nation, but rather as “deviants” (*elementos divergentes*) to be medically and legally monitored. Poor nonwhite women were first redefined and managed as potential sex workers. The same bodies would later be the object of contraception management and experimentation, enabling an unexpected transformation from colonial brothel to pharmacopornographic laboratory.

As was the case for the early theories of Restif de la Bretonne and Parent Duchâtelet regarding the construction of the utopian state-brothel in Europe, Puerto Rico’s policies associated disease, delinquency, and the presence

69. *Ibid.*, 59.

70. Findlay, *Imposing Decency*, 12.

of female sexuality within public spaces. But in Puerto Rico, the biopolitical configuration of urban space in the island's principle cities, Ponce and San Juan, was determined by the complex crossing of gender and class categories with colonial constructions of race. Thus, nonwhite marginal women were the object of a network of disciplinary institutions; hospitals (where gynecological exams took place twice a week), prisons, and brothels (within "zones of tolerance") created a penal closed-circuit network of control intended to remove the black sexual female body from the public space, as well as to regulate the nonwhite female's reproductive system. According to Rangelova, "Space was the main axis along which women's bodies and the practice of prostitution were regulated, restricted and controlled."⁷¹ Vázquez Lazo provides numerous examples of this spatial control developed by the 1890 Reglamento de Higiene Pública, which divided prostitutes into three main topopolitical categories, depending on the type of house in which they practiced prostitution.⁷² Segregation was simultaneously meant to be a preventive, protective, and therapeutic technique. According to this segmentation of space, the residence of prostitutes was not considered "domestic," since it was not to be a site for the reproduction of family and nation, but rather a "brothel," meaning a space that the government could inspect, control, and govern. This regulation of sexual spaces dismantled the traditional public and private divisions of the domestic space and reconstructed the nonwhite working class and impoverished domestic space

71. Rangelova, "House, Factory, Beauty Salon," 255.

72. *Ibid.*

as a site that would be ready for absorption by liberal and pharmacological companies after World War II. In Puerto Rico, the colonial and national state brothel was mutating into a pharmacopornographic heterotopia. The racial and sexual zoning of spaces that had occurred previously would provide the ideal site for the testing of contraceptives.

The Pharmacological Industrialization of the Domestic

In the 1930s, the process of excluding and monitoring nonwhite female sexuality and reproduction in Puerto Rico went from techniques of control used in medical and prison settings into several active eugenics programs, such as Law 136, which for the first time authorized sterilization for other than medical reasons. Between 1933 and 1939, a large network of maternity hospitals and sterilization and birth control clinics were established on the island. A liberal eugenics law, the network of birth control clinics, and the possibility of combining clinical trials with housing development and inexpensive labor for American companies and pharmacological industries made Puerto Rico the ideal setting for the Pill trials, which were the largest series of clinical tests ever performed.

In 1948, the US government, with the support of the local government under Luis Muñoz Marín, began “Operation Bootstrap,” which aimed to encourage rapid industrialization on the island.⁷³ Puerto Rico offered tax exemptions,

73. For more about gender production, space, and labor transformation in Puerto Rico, see Alice Colón Warren, “The Feminization of Poverty among Women in Puerto Rico and Puerto Rican Women in the Middle Atlantic Region of the United States” *Brown Journal of World Affairs* 5, no. 2 (1998): 262–82; Luz del Alba Acevedo, “Género, trabajo asalariado y desarrollo industrial en Puerto Rico: la división sexual del trabajo en la manufactura,” in *Género*

low-cost labor, and differential rental rates to encourage US industrial facilities to settle there. As a result, in a few years the island's economy shifted from colonial labor-intense agrarian industries, such as those of tobacco and sugar, to pharmaceutical, chemical, and electronics production. In a period of twenty years, Puerto Rico became the biggest biochemical and pharmaceutical laboratory in North America.

Access to contraceptive techniques was, in fact, designed as a component of a larger project involving housing, urban modernization, and industrialization on the island. Control of reproduction and modern housing were, according to the American government, the two major forces that could guarantee the improved standard of living in Puerto Rico. The main location for the first contraceptive trial, begun in 1955, was a G. D. Searle and Company clinic located in El Fanguito (often shown in US documents as El Fangitto, "the little mud hole"), the "worst slum" on the island, located just outside San Juan. Soon it would be razed in order to build a mass-produced planned community with "functionalist, seven-story residential buildings with running water and sunny balconies." Mass-produced single-family houses also were built by federal programs in Delano and in other villages: they were low-priced versions of white middle-class American suburban houses, closer to military housing units and the spaces and living conditions of the residential ghettos of the Chicago Black Belt than to

y trabajo: *La industria de la aguja en Puerto Rico y el Caribe Hispánico*, ed. María del Carmen Baerga (San Juan, Puerto Rico: Editorial de la Universidad de Puerto Rico, 1993), 161–212.

the Levittown model. Nevertheless, as Lara Marks argues, “Many of these families highly prized their new accommodation and were therefore unlikely to move away during the course of the trial. This would make them easy to monitor.”⁷⁴ The Pill trials were a biopolitical program of “modernizing” life that extended to the transformation of the family house, but also to sexuality and reproduction. With its strict spatial partitioning, the “modern” home became the site in which to reproduce the “American way of life,” but also a site of reproductive surveillance. The El Fanguito housing program was the “cage of ovulating females” that McCormick dreamed of and that Searle needed to transform its molecule into a commercial drug. As part of the same urban development, several American pharmacological companies built factories on the island, transforming the same women who at night were testing the oral contraceptives at home into factory workers during the day.

In 1956, when the trials were initiated, the pill selected for use was Enovid, Searle’s brand name for a synthetic oral progesterone—a white pill that came in an ordinary glass bottle and that women had to take on a regular basis according to a strict timetable:

When taking the medication, the women were expected to swallow tablets every day (about one every six or eight hours) between the fifth and twenty-fifth day of their cycle. A number of women also had to inject themselves with the compound or insert it as a vaginal suppository.

74. Lara Marks, “Parenting the Pill: Early Testing of the Contraceptive Pill,” in *Bodies of Technology*, eds. Ann Rudinow Saetnan, Nelly Oudshoorn and Marta Kirejezyk (Columbus, OH: Ohio State University, 2000), 157.

Each woman had to take her own basal temperature readings and vaginal smears on a daily basis. All this data had to be marked on a chart. The women also had to collect urine over a forty-eight-hour period on the seventh and eighth postovulatory days for hormone analysis. Often the only way to collect urine over such a period would have confined women to their homes where they were near a toilet.⁷⁵

Given the high rates of illiteracy among women in Rio Piedras, compliance with the instructions and data collecting had to be ensured by regular visits from social workers, who moved daily from house to house collecting fluids, recording information, and encouraging women's cooperation with the pharmacological regimen—a practice that forced women to stay at home (when not at the factory) so they could be easily contacted by the social workers.

The most important difference between the Pill trials conducted at Rio Piedras by Searle and previous clinical pharmacological trials lay not in the substance but in the space where they were performed: the Pill trials were the first clinical tests to be externalized outside medical and pharmacological institutions and to take place in the domestic environment. It was Edris Rice-Wray, medical director of the trials, together with Rock and Pincus, who decided to use the housing program of El Fanguito as a home setting for the trial. Having the women take the Pill at home not only reduced the institutional cost of the trials but also placed the subjects within the domestic context of

75. *Ibid.*, 161.

ordinary life, thus extending the scope of the trial outside medical institutions: every private home could potentially become an experimental site. The El Fanguito housing complex became an externalized and extended domestic pharmaceutical laboratory.

The high doses of progesterone determined by Searle, to ensure that no pregnancies occurred during the trial, rapidly proved that the hormonal oral contraceptive was extremely reliable. By 1958, because a large part of the population participated in the trial, the birth rate in Puerto Rico had begun to decline. In the early 1960s, other pharmacological companies, such as Synthex (and its ten-milligram pill Orthonovum) and Wyeth Pharmaceutical (Norgestrel and Mestranol) came to the island and extended the trials.⁷⁶ Meanwhile, the Pill trials had also moved to other pseudo-colonial locations, such as Haiti, where Dr. Rice-Wray had initiated a new Searle trial as early as 1957, and Mexico, where Syntex launched a new trial for the Norlutin pill. In most cases the strategy was the same: using housing modernization as a way of installing a micropharmaceutical laboratory within the domestic environment.

A transversal analysis of geopolitical and institutional spaces, as well as of the racial, sexual, and gender implications of the uses of the first molecules of estrogen and progesterone, extend our definition of the Pill beyond that of being a simple method for managing births to include, also and most important, a new *pharmacodomestic tech-*

76. As Puerto Rican physician and advocate against eugenics Helen Rodríguez-Trias has shown, a strong social and political reaction against the Pill trials had started on the island as early in 1964. Apart from the trials, and as a result of the application of Law 136, by 1969, 35 percent of Puerto Rican women had been sterilized.

nique for (re-)producing race, a form of neocolonial biotechnological eugenics for controlling the reproduction of the species.⁷⁷ From this perspective, the Pill functions as a semiotic-material element (in its incarnations as both molecule and discourse, machine and organic substance) in the hegemonic racial and sexual grammar of Western culture, obsessed, as Donna J. Haraway has argued, by the contamination of lineage, the purity of race, the separation of the sexes, and the control of gender.⁷⁸

From the time of the Worcester Hospital and the Puerto Rico trials, the Pill has functioned as a technique not only for controlling reproduction but also for producing and controlling gender and race. Although the Pill was an effective form of birth control, the FDA rejected the first version invented by Pincus and Rock in 1951 and tested at Puerto Rico from 1956 on, because the agency's scientific committee felt it threw doubt on the femininity of American women by suppressing their periods altogether. FDA standards led to Searle's production of a second pill, commercialized in 1959, that was equally effective but could, unlike the first, technologically reproduce the rhythms of a natural menstrual cycle, inducing bleeding that created the illusion of a natural cycle's taking place and somehow "mimicking the normal physiological cycle."⁷⁹ The Pill forces us to extend

77. For more on the Pill and racial purification, see Dorothy Roberts, *Killing the Black Body: Race, Reproduction, and the Meaning of Liberty* (New York: Vintage, 1998).

78. For more on "purity" as the target of technobiopower, see Haraway, *Modest_Witness*, 78–82.

79. Anna Glasier, "Contraception, Past and Future," *Nature Cell Biology* 4 (October 2002): s4, doi: 10.1038/ncb-nm-fertilityS3.

Judith Butler's concept of gender performativity from theatrical imitation and linguistic "performative force" to *living mimicry*, the technical imitation of the very materiality of the living being, the pharmacopornographic production of somatic fictions of femininity and masculinity. I will call this process *biodrag*, in reference to the culture and practices of drag, drag queens, and drag kings, and define it as the pharmacopornographic production of somatic fictions of femininity and masculinity. What is being represented and imitated technically by the Pill is already no longer a sartorial code or a physical style, but a biological process: the menstrual cycle.

The process of feminization as it is linked to the production, distribution, and consumption of the Pill reveals that hormones are sexopolitical fictions, technoliving metaphors that have the capacity to be swallowed and digested, absorbed and incorporated. They are pharmacopornographic artifacts that can create physical formations that become integrated with vaster political organisms such as our medico-legal institutions, the nation-states, or global networks through which capital circulates.

PACKAGING DISCIPLINARY ARCHITECTURE: DIALPAK AND THE INVENTION OF THE EDIBLE PANOPTICON

Following the Puerto Rico trials, in 1957 the FDA approved the use of Searle's Enovid for the treatment of menstrual irregularities and—two years later—for birth control. Nevertheless, Puerto Rican women's resistance to following

instructions caused Searle to suspect that commercialization for American women could be difficult without pharmacological control. Although highly efficient, the routine of taking hormonal pills seemed almost impossible to control outside the pharmacological housing programs: never before had a pharmacological product depended so much on disciplining the patient in a domestic setting. As we shall see, the invention of a domestic, portable dispenser for the Pill in the early 1960s would answer this need for self-surveillance and discipline.

Originally, Enovid was commercialized in two doses, ten milligrams and five milligrams, and like all prescriptions for the Pill at the time, it was filled in a small bottle. Oral contraceptive hormones entered the American middle-class domestic environment in a brown glass container, but without the pedagogical regime of the Rio Piedras pharmacological-housing complex, any mistake in the intake timetable could cause what Enovid was trying to prevent. Instructions for taking the Pill seemed straightforward: the user was supposed to take the first tablet on the fifth day of menstruation, continue with one tablet every day for twenty days, and then stop; she would begin menstruating in two to three days, and on the fifth day of menstruation she was to start another twenty-day cycle of tablets. But the brown bottle in no way aided memorizing or controlling the intake routine.

In 1962, Illinois engineer David P. Wagner (whose background was in developing new fasteners for Illinois Tool Works) created an early prototype dispenser for the Pill, three round plastic plates held together by a snap fastener,

to divide his wife's monthly pill supply into daily doses.⁸⁰ Wagner explained the process of producing the dispenser: "With just a ¼" electric drill, a fly cutter to be used in the drill, paper, a saw, a staple, pencil, double-faced transparent tape, several drill bits, a snap fastener that I took off a child's toy, and several flat, clear sheets of either acrylic or polycarbonate plastic, I fashioned the first Pill box for packaging birth control Pills."⁸¹ The bottom plate had the day-of-the-week pattern. The middle plate held twenty wooden "pills" and rotated to match the day pill taking would begin. A single hole in the top plate moved over the Pill to dispense it, revealing the day of the week as a reminder of when the pill was taken.⁸²

Wagner sent the prototype to Searle and to Ortho Pharmaceutical. Searle rejected Wagner's project and in 1963 Ortho Pharmaceutical launched the first DialPak "memory-aid" dispenser, designed according to Wagner's model.⁸³ Reaching the market a few months later, Searle's Enovid E Con-pac and one-milligram Ovulen pill dispensers were also closely inspired by Wagner's distributor. To distinguish itself from Searle's Con-pac, a 1964 Ortho-Novum advertisement showed the DialPak 21 dispenser for the oral contraceptive for the first time, highlighting a watchstrap calendar "to keep key days always at hand."

80. In 1994, David P. Wagner donated his collection of prototypes of drug and pill packaging to the Division of Science, Medicine, and Society at the Smithsonian Museum of National History, enabling historian Patricia Peck Gossel to develop a first study of the design process.

81. Patricia Peck Gossel, "Packaging the Pill," in *Manifesting Medicine: Bodies and Machines*, ed. Robert Bud (London: Taylor & Francis, 1999), 107.

82. *Ibid.*, 106.

83. Neither Searle nor Ortho bought Wagner's patent. Ortho was later legally forced to pay \$10,000 to Wagner to compensate for using his prototype.

According to historian of medicine Emilia Sanabria, the material aspects of packaging and pharmaceutical transformation are often overlooked when the history of medical techniques is described:

In the manipulation which occurs in the pharmaceutical process, liquid, semi-solid and solid pharmaceutical substances are manufactured—or temporarily stabilized—into pharmaceutical “objects.” The possibility of effecting this handcrafting is understood to define the effects that these pharmaceutical objects can have, physiologically-speaking, on their “patients.” Pharmaceuticals have increasingly been analyzed as objects. This carves out a particular place for pharmaceuticals in the analysis of material things, and of material things in the analysis of pharmaceuticals. Whilst material culture analyses provide elements to theorize drugs as “things,” it produces problems when these things are drugs. I argue that the consumable and changeable aspects of these “things” are left un-theorized. This problem stems from a common assumption in anthropological analyses of material culture, which tends to take the object for granted. That is to say, the process of object-making is often eclipsed by the object itself.⁸⁴

Insisting on the need to pay attention to the medical and social repercussions of pharmacological marketing, historian Patricia Peck Gossel has studied the packaging techniques that were used for the commercialization of the DialPak, the first compliance package of the Pill, pro-

84. Emilia Sanabria, “The Medicine, an Evanescent Object: Test on the Manufacture and the Consumption of the Pharmaceutical Substances,” *Techniques & Culture* 52–53, no. 2–3 (2009): 168–89.

duced in 1963.⁸⁵ According to Gossel, the Pill was not only a political and gender revolution but also a revolution in drug packaging. The Pill is the first pharmaceutical molecule to be produced as a design object.

Gossel understands Wagner's design of the Pill packaging as a couple's "problem solving" process, in which the husband (and designer) aided his wife in managing a complex intake time schedule, reinterpreting the bond between husband and wife as a model of the designer-user relationship.⁸⁶ For Gossel, the DialPak appears to be the first "compliance package" for a prescription drug—one that intended to help the patient to comply with the doctor's orders.⁸⁷

For Gossel, the invention of the dispenser for the Pill indicates the emergence of a new model of pharmaceutical design, one that does not rely on the aims of advertising companies aims, but rather on the designer-user relationship. Following Gossel's design history, we could argue that the Pill (taking into account the difficulties of the intake schedule) is not only a chemical product (the molecule isolated and marketed as edible capsule) but also an individual portable pharmacomechanism, able to discipline the tablets' intake. The 1960s Pill, as a social domestic practice and individual hormonal prosthesis, cannot exist without the

85. Gossel, "Packaging the Pill," 105–21. For more about the history of packaging, see also Stanley Sacharow, *The Package as a Marketing Tool* (Radnor, PA: Chilton, 1982); Thomas Hine, *The Total Package: The Evolution and Secret Meaning of Boxes, Bottles, Cans, and Tubes* (Boston: Back Bay Books, 1995); Steven Lubar and W. David Kingery, eds., *History from Things: Essays on Material Culture* (Washington, DC: Smithsonian Institution Press, 1993).

86. Gossel explains, as if she needed to justify the Wagners' decision for birth control: "Doris Wagner began taking the Pill after the fourth child, Jane, was born on November 14, 1961, and the Wagners decided that their family was complete," Gossel, "Packaging the Pill," 105.

87. Gossel, "Packaging the Pill," 105.



The important date always to hand for her...

the Ortho-NOVUM DIALPAK 21

These are the dates she needs to know:

"When did I take my last tablet?"
No day is with the DialPak—turn it, take it, and the day is marked.

"When do I start my next course?"
New 21-day DialPaks remember for her. Three weeks in, one week off, start a new course on the same day as before. It's as simple as that.

NO MISSED TABLETS—DialPak design insures the 100% method!

...for you

The matching calendar helps the date always to hand. Each month is remembered, complete with customary news about Ortho-Novum.

COURTESY OF THE NATIONAL MUSEUM OF AMERICAN HISTORY BEHRING CENTER, SMITHSONIAN INSTITUTION

Ortho-Novum DialPak became the second oral contraceptive on the American market in February 1963.

new...

well-tolerated specifically designed oral contraceptive

Ortho-Novum
norethindrone with mestranol tablets



Specific Ratio—minimizes side effects
Prevent progesterone-estrogen ratio minimize bloating, irregularities, gastrointestinal disturbances and other undesirable side effects.^{1,2,3}

Specific Indication
—virtually 100% effective
In over four years, only one unplanned pregnancy in 23,471 cycles of 1,144 women who took tablets as directed.^{1,2,3}

Specifically Designed "DialPak" helps her remember
The unique "DialPak" shows at a glance when last tablet was taken and helps assure dosage regularity.

Ortho Pharmaceutical Corporation • Raritan, New Jersey
For a complete choice of medically accepted contraceptives



Contraindications: Such Ortho-Novum tablets are not to be administered to a woman who is already pregnant or who has been pregnant within the last 3 months.

Administration and Usage: The usual daily dose is 1 tablet for 21 days, from the first day of the cycle of menstruation, counting the first day of menstruation as "Day 1." To use as directed, if menstruation does not occur within 7 days after completion of previous 21-day course.

Precautions: Ortho-Novum is currently recommended for periods of continuous use and not to exceed two years. Side reactions that may occur include in the case of changes of menstrual pattern, weight gain and secondary feminine hairline growth.

Precautions: It is not to be used by the following categories of women: (a) women who are allergic to any of the ingredients in Ortho-Novum or norethindrone; (b) women who are taking any of the following drugs: barbiturates, sedatives, tranquilizers, and other drugs which may depress the central nervous system; (c) women who are taking any of the following drugs: phenylbutazone, salicylates, and other drugs which may depress the central nervous system; (d) women who are taking any of the following drugs: phenylbutazone, salicylates, and other drugs which may depress the central nervous system; (e) women who are taking any of the following drugs: phenylbutazone, salicylates, and other drugs which may depress the central nervous system.

Advertising campaign, 1964, National Museum of American History, Behring Center, Smithsonian Institution.

dispenser. Whereas a single tablet of an oral contraceptive, if separated from the container, would be recognized only by a pharmacist, the distinctive package of the Pill made it the most readily recognizable prescription drug on the market during the 1960s. Reversing the traditional relationship between content and container, the packaging *is* the Pill.

Wagner's DialPak design resulted from two operations: spatialization of time and camouflage. First, the dispenser spatialized time by making the administration dates visible within the circular box. Like the rotary-dial telephone, the most popular domestic communication appliance of the Cold War years, the circular box established abstract relationships between three systems—holes, numbers, and network stations for the phone, and holes, Pills, and the dates of the menstrual cycle for the DialPak. The dispenser divided duration into successive segments, each of which indicates a specific time. The spatialization of time produces what Foucault called an “anatomic-chronological scheme of action” that combines architecture, design, and body movement, transforming the user into an efficient (non-)reproducing machine.⁸⁸ According to Wagner, and later to the Searle and the Ortho Pharmaceutical advertising campaigns, the dispenser's main aim was to reduce “forgetfulness,” with the dispenser being presented as a prosthesis to women's lack of memory and responsibility. In this respect, the DialPak was a technique for packaging not only pills but

88. Michel Foucault, “Docile Bodies,” in *Discipline and Punish: The Birth of the Prison*, trans. Alan Sheridan, 2nd ed. (New York: Vintage, 1995), 156–66.

89. According to the same logic, the IUD contraceptive device was described by *TIME* magazine as “memory in plastic.” See “Contraception: Freedom from Fear,” *TIME*, April 7, 1967, <http://www.time.com/time/magazine/article/0,9171,843551,00.html>.

also memory and time, responsibility and trust.⁸⁹

The monthly package of pills, with its imperative of daily administration but also the risk of forgetfulness or incorrect management, with its time-based ritual and pop design, evokes a chemical calendar in which each day is indicated by the indispensable presence of a pill. Its presentation in circular form invites the user to follow the movement of time on a dial, as if on a clock, where the alarm announces the time of ingestion.⁹⁰ It functions as a device for the domestic self-surveillance of female sexuality, like a molecular, endocrinological, high-tech mandala, a book of hours, or the daily examination of conscience in Ignatius's *Spiritual Exercises*. It is a hormonal domestic microprosthesis that regulates ovulation, but it also produces the "mind" and living body of the heterosexual woman as modern sexual reproductive subject.

On the other hand, Wagner intended to camouflage a birth control technique as a "female" ordinary-use object: he designed the dispenser to be the size and form of a makeup compact, so women could carry it discreetly in their purses—a way of employing in public space a technique that was originally meant for only the domestic space. Although soon used by millions of American women, the dispenser was meant to be totally "private," the perfect box in which to keep a female secret.⁹¹ This domestic and undisclosed character of a birth control technique may

90. The first packages of pills, designed in the sixties, were equipped with an integrated alarm.

91. Gossel, "Packaging the Pill," 115. Gossel thoughtfully notices that by the 1980s, the cosmetic compact design was displaced by the "wallet" or the "credit card" look.

QUICK! QUICK! QUICK!

Creme Puff - that's enough!

No other make-up brings you such complexion loveliness in seconds

In beautiful Max Factor Compacts with beauty puff

$8\frac{2}{3}$

Build with beauty puff

$5\frac{1}{6}$

Fillers smooth or make-out. Fillers smooth to touch up. Quick, smooth, a lasting and loveliness in your... the beauty loveliness. Beauty Creme Puff on film. Oh! Creme Puff is beauty-loveliness... a unique combination of powder and beauty-rich cream, blended to make

smoothness. Creme Puff never dries your skin... never changes color... always both fresh and light and always holds or sets naturally loose. How simple now your beauty routine! These days here too, France's top complexion make-up.

MAX FACTOR

Creme Puff

Left: Max Factor Creme Puff Compactly design, 1959. Below: First advertising campaign for Enovid-E Compactly pill dispenser, Searle and Company, 1964.

HOW TO USE YOUR COMPACT

1. With your pills facing you, position the Compactly Refill so that the arrow points to the day your period starts.

Snap the Refill into locked position by pressing down around the bottom catch. The Refill should be flat in the Compactly. To remove it, lift up at any day and pull off.

2. Your first pill is to be taken five days after your period starts. It is marked with a circle around it.

3. To remove a pill, push the pill down through the bottom opening of the Compactly. The pill pops out.

OUTER ROW **MIDDLE ROW** **INNER ROW**

4. The pills should be taken consecutively: The pills in the outer row one each day of the first 7 days, the middle row the second 7 days, and the inner row the last 6 days.

Your Enovid-E Compactly

Searle and Company

This modern dispensing package... with push-button ease... was specifically designed for you... to make birth control with "the Pill" easy and pleasant as well as reliable. You will be pleased with the distinct advantages it offers. Your Compactly contains no moving parts. It is easy to understand and to use. Each pill is sealed for maximum protection. A completely automatic record is kept of your cycle and of your pill days.

explain why most of the package inserts suggested keeping the dispenser at home, putting it, for example, on the kitchen counter or on the night table in the bedroom or in the bathroom medicine cabinet. As historian Patricia Peck Gossel recalls: “A Philadelphia women’s health clinic recommended that women take their Pill when they heard the theme music for the 11 o’clock news, at bedtime,”⁹² something that amounts to trying to transform a national broadcasting media into a technique to regulate intake. In some cases, “the package of birth control Pills was presented in a box with a toothbrush, a small bar of soap, a ‘Remember Me’ sticker for the bathroom mirror and the slogan ‘Brush your teeth, wash your face, take your Pill . . . once a day, every day, at the same time.’”⁹³

In 1965, Mead Johnson invented the twenty-eight-day regime, adding placebos that enabled the user to take a pill every day. C-Queens sequential pill by Eli Lilly contained two different formulations to be taken in sequence. The package resembled a calendar, with four rows of five tablets. The twenty-eight-day regime made the DialPak calendar format obsolete; the key now was that the pills be taken in the proper sequence, leaving behind the importance of when the cycle started. But with time, the Pill became a female life-regulator: the Parke and Davis placebo twenty-eight-day regime included one milligram of Norlestrin Fe to “compensate for mineral loss during menstrual bleeding,”

92. Gossel, “Packaging the Pill,” 115. The Starter Kit for Forgetful Women by Organon, Inc., distributed in 1993, included helpful suggestions for forgetful pill-takers of their Desogen oral contraceptive.

93. Organon, Inc., cited in Gossel, “Packaging the Pill,” 116.

and some other designs incorporated a dial to remind the user to examine her breast for tumors at the optimum time of her cycle.

The process of camouflage, miniaturization, and privatization reached a higher level in 1964 when the Population Council's Center for Biomedical Research demonstrated that hormones could be released from a silicone rubber capsule implanted in the body. The first clinical trials of a six-capsule Silastic (silicone and plastic) drug delivery system, implanted under the skin of the upper arm, were conducted in 1975, and this system was first approved for use as Norplant in Finland in 1983. "In this case," as Patricia Peck Gossel noted, "dosage form and the container have, in a sense, merged."⁹⁴ The implant remained within the body, invisible, as long as the drug was released, for five years, after which it was surgically removed. The Norplant prosthetic implant would be later followed by infusion pumps, transdermal patches, and osmotic systems.

Bringing Emilia Sanabria's and Gossel's conclusions about pharmaceutical packaging further into a general history of biopolitics, I shall argue that the transformation of the oral contraceptive pill into "the Pill" through packaging can be understood not only as a cultural process that implies social and medical effects but also as the translation of an architectonic model, a disciplinary system of power and knowledge relationships derived from Enlightenment architectures of the hospital and prison, into a domestic

94. Gossel, "Packaging the Pill," 116.

and portable (and later bodily and prosthetic) technique.

The art historian Aby Warburg has given us an iconographic method for thinking about the transmission and survival of forms through different cultural mutations. In his *Der Bilderatlas Mnemosyne* (The Mnemosyne Atlas, 1924–29), Warburg lays out a possible visual history of Europe, made of two thousand images, among which can be found Roman sculptures, maps from different periods, Darwinian diagrams of animal evolution, Renaissance frescos, Christian oil paintings, and photographs from the beginning of the twentieth century. Inspired by this method of visual traceability, one can recognize, and not without terror, a vestige of Jeremy Bentham’s model in the original design for the package of contraceptive pills that was marketed after the 1960s. In their internal divergence, Bentham’s architectural motifs reclaim their place at another scale: the contraceptive pill is an edible panopticon. Social orthopedics is mutating into pharmacopornographic microprosthetics. DialPak transformed the panopticon into a domestic, portable female hormonal compact.

The panopticon, prefigured by the hospital plans of Bernard Poyet and C. P. Coquéau and by Louis Le Vau’s project for a menagerie at Versailles, first emerged as a model of industrial (but not yet penal) architecture, developed in 1786 by the philosopher Jeremy Bentham, brother of the naval engineer Samuel Bentham (in fact, it was Samuel who conceived the basic architecture of the building), in response to a commission from the Russian prince Grigory Potemkin.

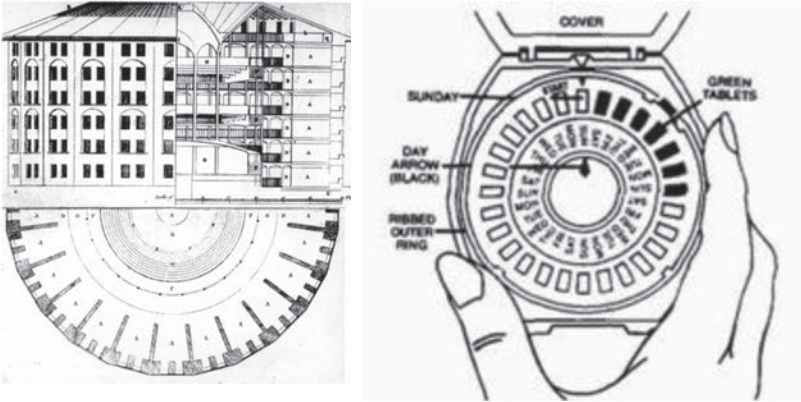
Originally, the panopticon was an industrial “inspec-

tion house” designed to optimize surveillance, control, and worker production in a factory complex. Bentham’s architectural structure was based on two concentric rings, with an observation tower at the center of the entire structure and a series of cells radiating out from it. Each of these cells had two windows, an external one to let in light, and an internal one facing the surveillance tower. The occupants of the cells were isolated from each other by walls and subjected to the collective and individual (audiovisual) scrutiny of a guard in the tower, which, as Foucault speculates, could have been empty or occupied by the abstract eye of God, which would remain hidden. As pointed out by Christian Laval:

The panoptic is not only the eye of power, a kind of imaginary figure suspended over a splintered and isolated people, but also, in the reverse sense, the eye of the people that must remain constantly focused on the ruling class so that the latter won’t betray the interests of the greatest number. This double meaning of surveillance is based on the principle of the goal of generalized transparency. The model of the panoptic has the advantage of combining what is usually thought to be distinct and separate: the most intrusive social control, the free market and the most advanced democracy.⁹⁵

This original design became the model for internment and disciplinary centers built in the nineteenth and twentieth centuries, centers such as Rahway Prison in New Jer-

95. Christian Laval, “De l’utilité du panoptique,” afterward to *Panoptique: Mémoire sur un nouveau principe pour construire des maisons d’inspection, et nommément des maisons de force*, by Jérémie Bentham, trans. Christian Laval (Paris: Éditions Mille et Une Nuits, 2002), 64.



Left: Elevation, section, and plan of Jeremy Bentham's Panopticon, drawn by architect Willey Reveley in 1791. Right: First dispenser for the Pill, 1963.

sey; national prisons in Dublin, Bogotá, and Cuba's Isle of Pines; and the jail in Mataró, Spain, designed by Elies Rogent. For Foucault, the panopticon isn't just a simple disciplinary device. It's the *material model* of disciplinary knowledge-power as a form of "social orthopedics":⁹⁶ power and its specific modes of knowledge and surveillance materialized in the form of physical architecture (whether of a prison, school, hospital, barracks, or factory) that automates movement, controls the gaze, programs action, and ritualizes everyday bodily practices. In all such cases, disciplinary power is, according to Foucault "exercised through its invisibility . . . and the examination is the technique by which power, instead of emitting the signs of its potency,

96. Michel Foucault, *Power: Essential Works of Foucault 1954–1984*, ed. James D. Faubion, trans. Robert Hurley (New York: The New York Press, 2000), 57.

instead of imposing its mark on its subjects, holds them in a mechanism of objectification."⁹⁷ The purpose of these forms of architecture is not simply to provide *habitat* or represent the individual—instead, like true *performative* devices, they tend to produce the subject they claim to shelter. The convict, the student, the patient, the soldier, and the worker are the political precipitate of these architectural *technologies of subjectification*.

We can think of the Pill as a lightweight, portable, individualized, chemical panopticon with the potential to change behavior, program action, regulate sexual activity, control population growth and racial purity, and redesign the sexual appearance (by refeminizing it synthetically) of the bodies that self-administer it. The surveillance tower has been replaced by the eyes of the (not always) docile user of the Pill who regulates her own administration without the need for external supervision, following the spatial calendar marked on the circular or rectangular package. The whip has been replaced by a convenient system of oral administration. Henceforth, the prison cell has become the body of the consumer, which sees itself chemically modified without being able to determine the exact effects or where they come from, once the hormonal compound has been ingested. Punishments and edifying sermons have been replaced by rewards and promises of freedom and sexual emancipation for women. The Pill is a miniaturized pharmacopornographic laboratory distributed within the domestic environment and destined to be placed inside

97. Foucault, *Discipline and Punish*, 187.

the body of each consumer, thus fulfilling the demolition of imprisonment institutions predicted by Deleuze and Guattari in their epilogue to *A Thousand Plateaus*.⁹⁸ The Pill works according to what Maurizio Lazzarato, following Deleuze and Guattari, calls the logic of “machinic enslavement.” “Machinic enslavement,” explains Lazzarato:

consists in mobilizing and modulating the pre-individual, pre-cognitive and pre-verbal components of subjectivity, causing affects, perceptions and sensations as yet un-individuated or unassigned to a subject, to function like the cogs and components in a machine. While subjection concerns social selves or global persons, those highly manipulable, molar, subjective representations, ‘machinic enslavement connects infrapersonal, infrasocial elements thanks to a molecular economy of desire which is far more difficult to maintain within stratified social relationships,’ and these are the elements that mobilize individuated subjects. Machinic enslavement is therefore not the same thing as social subjection. If the latter appeals to the molar, individuated dimension of a subjectivity, the former activates its molecular, pre-individual, pre-verbal, pre-social dimension.⁹⁹

It is no longer necessary to shut up individuals within state institutions in order to subject them to biochemical, pedagogic, or penal tests, because experiments on the living human being can now be carried out at home, in the valuable enclave of the individual body, under the watchful, intimate supervision of the individual herself. And all of it

98. Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia*, trans. Brian Massumi (Minneapolis: University of Minnesota Press, 1987).

99. Maurizio Lazzarato, “The Machine,” epilogue to *Tausend Maschinen: Eine kleine Philosophie der Maschine als sozialer Bewegung*, by Gerald Raunig (Vienna: Verlag Turia + Kant, 2008).

happens *freely*, by virtue of the sexual *emancipation* of the controlled body. The biopolitical promise of governing *free* bodies that Foucault identified is here fully accomplished.

Still, the differences between the panopticon and the Pill are significant. Within the length of hardly a century, they underline the transition from a disciplinary regime into a pharmacopornographic regime. In the first case, we're faced with an external political architecture that defines the position of the body in a space that is collectively regulated, creating specific positions of power (monitor/monitored, doctor/patient, professor/student . . .) and allowing the generation of a form of knowing (visual, statistical, demographic) concerning those individuals being controlled. In the second case, we're faced with a mechanism that—without any change in its effectiveness—has reduced its scale to that of a biomolecular technology that may be consumed individually and introduced by bodily orifices. In the pharmacopornographic era, the body swallows power. It is a form of control that is both democratic and private, edible, drinkable, inhalable, and easy to administer, whose spread throughout the social body has never been so rapid or so undetectable. In the pharmacopornographic age, biopower dwells at home, sleeps with us, inhabits within. The dominant manifestations of the pharmacopornographic era (pills, prostheses, food, images, fellatio, and double penetration) share the same relationship between the body and power: a desire for infiltration, absorption, total occupation. We could give in to the temptation of representing this relationship according to a dialectical model of domination/oppression, as if it were a unidirectional

movement in which miniaturized, liquid power from the outside infiltrates the obedient body of individuals. But no. It is not power infiltrating from the outside, it is the body desiring power, seeking to swallow it, eat it, administer it, wolf it down, more, always more, through every hole, by every possible route of application. Turning oneself into power. *Baise-Moi*, fuck me (Despentés), says the body, all the while seeking forms of autocontrol and autoextermination: “Why do people always desire their own slavery?” (Spinoza). Biopower doesn’t infiltrate from the outside. It already dwells *inside*.

But machinic enslavement also determines new possibilities for subversion. The Pill—defined by the need for an individual decision to take it and by the time-based calculations of the user—immediately induces accident. It takes accident into account, programs it, sees accident as a *sine qua non* possibility of female sexuality. The heteronormative logic of the Cold War period that dominates the Pill seems to respond to this double, contradictory requirement: every woman must simultaneously be fertile (and be so through heterosexual insemination) and able to reduce the possibility of her own fertility at all times to levels asymptotically close to zero, but without reducing it altogether, so that accidental conception remains possible. But the accident is also the possibility of subversion and resignification: the fact that the Pill must be managed at home, by the individual user in an autonomous way, also introduces the possibility of political agency.

The massive, high-dose administration of estrogens and progesterone to the bodies of Western cis-females after

World War II permitted the production and reproduction of femininity as a standardized and ready-made biocode. This new microprosthetic femininity is a patented pharmacopornographic technology, which can be commercialized—or transferred to and implanted in—any living body at all. Gradually, it will be revealed that the estrogens and progesterone administered in high doses during this period are toxic and carcinogenic and to blame for various cardiovascular changes, but such findings do nothing to lower consumption of the Pill (in fact, its consumption increased exponentially beginning in the 1970s); nor do they change recommendations coming from the World Health Organization (WHO).

The amount of estrogen and progesterone intended for a month of treatment has changed from 150 micrograms of estrogen and 200 milligrams of progesterone in the 1970s to 10 micrograms of estrogen and 15 milligrams of different variants of progesterone in today's contraceptive treatments. As a measure to improve security, the current micropill (which is the most prescribed drug for periods of breast-feeding) administers a weaker dose during a greater number of days, reducing the number of days in which a placebo pill is taken, during which what we could call the *technoperiod* is produced—in other words, a technologically induced bleeding that produces the illusion of a natural cycle. These are technological methods of biodrag whose objective is the “mimicking of the normal physiological cycle.” From Pincus's second pill to today's micropill, these technologies of hormonal invention have been functioning according to a principle of biocamouflage: first, interrupt-

ing the natural hormonal cycle, and then, technologically provoking an artificial cycle that re-creates the illusion of nature. The first of these actions is contraceptive, the second is the consequence of an intended pharmacopornographic production of gender—seeing to it that the bodies of twentieth-century technofemales perpetuate the illusion of being the outcome of natural, unchanging, transhistoric, and transcultural laws.

A recent study carried out at Boston University reveals the relationship between consumption of the contraceptive pill, the decline in the levels of bioavailability of testosterone (a reduction from 40 percent to 60 percent), and the drop in women's libido. The study warns that taking synthetic estrogen can modify hormonal production on a global scale and recommends administering testosterone gel in microdoses to increase "the sexual functioning of female consumers of the pill."¹⁰⁰ But today, administering testosterone to women still remains a hormonal taboo with political implications. The production of femininity in the pharmacopornographic regime functions according to a paradoxical logic: on the one hand, the Pill is being administered to cis-females in a generalized manner, and on the other, a pharmacological way of overcoming depression and frigidity is the goal.¹⁰¹ The cis-female of the twenty-

100. Katrina Woznicki, "Birth Control Pills May Produce Protracted Effects on Testosterone Levels," *MedPage Today*, January 3, 2006, <http://www.medpagetoday.com/OBGYN/HRT/2423>; C. Panzer, S. Wise, G. Fantini, D. Kang, R. Munarriz, A. Guay, and I. Goldstein, "Impact of Oral Contraceptives on Sex Hormone-Binding Globulin and Androgen Levels: A Retrospective Study in Women with Sexual Dysfunction," *The Journal of Sexual Medicine* 3 (January 2006): 104–13.

101. This logic is comparable to the relationship between the repression of masturbation and the production of fits of hysteria using mechanical means in the sex-discipline agenda of the nineteenth century. See an analysis of this paradoxical production in Beatriz Preciado, *Manifeste contra-sexuel* (Paris: Balland, 2000), 73–88.

first century is the result of this somato-political short-circuiting; her subjectivity grows within the narrow margin of freedom created by these fields of divergent force.

The formation of the pharmacopornographic society was characterized by the two new vectors of production of sexual subjectivity at the middle of the twentieth century. On the one hand, as we have seen, there is the introduction of the notion of “gender” as a technical, visual, and performative device for sexing the body, the reorganization of the medico-judicial, educational, and medical system that until that time had been articulating the notions of “normalcy” and “perversion” in the context of the binomial concept of heterosexuality/homosexuality and will now begin considering the possibility of technically modifying the body of the individual to “invent” a masculine or feminine “mind.” On the other hand, we are witnessing techniques of social control that are suitable for the disciplinary system gradually filtering into the individual body. What is at issue is no longer only the punishment of the sexual offenses of individuals or the surveillance and correction of their aberrations by means of a code of external laws or interiorized disciplines, but the modification of their bodies in their capacity as living platforms. We are treated as producers and consumers of organs, flux, neurotransmitters, as supports and effects of a biopolitical program. We are certainly still confronting a form of social control, but this time it’s a matter of *control lite*, a bubbly type of control, full of colors and wearing Mickey Mouse ears and the Brigitte Bardot low-cut look, as opposed to the cold, disciplinary architecture of the panoptic illustrated by Foucault.

After the 1950s, the construction of biofemininity becomes a process of somato-political construction (bio-drag). It consists of a progression of molecular overcodification—a transformation of the structure of life, and not a simple disguise or mask, as postmodern theories of gender like to claim.¹⁰² The breasts, for example: their weight, form, and consistency have acquired a plastic pertinence (in the medical sense of the term), transforming them gradually into a techno-somatic signifier of the production of gender.¹⁰³ They have materialized as a place for new pathologies, such as hypomastia (small-breast symptom) or breast cancer, which appeared at the same time as the techniques of mastectomy and breast reconstruction using synthetic implants, the incidences of which increased exponentially beginning in the 1960s.¹⁰⁴ The H-bomb, the birth control pill, silicone implants, breast cancer . . . From ablation to reconstruction to augmentation, the twentieth-century breast functions above all as prosthesis. In other words, every biobreast exists in relation to its own cultural prosthesis. Accordingly, it's just as suitable to speak of techno-breasts when referring to cis-females as it is when referring to transsexual bodies, rather than making a distinction between the natural female breast and the prosthetic.

102. For example, an extreme example of a postmodern theory of gender would be that developed by Jean Baudrillard in *Simulacres et simulation* (Paris: Editions Galilée, 1981); this shouldn't be confused with the performative definition of gender developed by Judith Butler or Sue Ellen Case.

103. Sander L. Gilman, *Making the Body Beautiful: A Cultural History of Aesthetic Surgery* (Princeton, NJ: Princeton University Press, 2001).

104. Elizabeth Haiken, *Venus Envy: A History of Cosmetic Surgery* (Baltimore: The John Hopkins University Press, 1999).

Since the beginning of the twentieth century, new synthetic materials, architectural structures, the techniques of artistic collage and of film editing have moved toward the domain of corporal transformation.¹⁰⁵ For example, paraffin was one of the first substances used in the construction of “island flaps,” the envelopes for breast implants but also for testicular implants (typically used for soldiers who had lost one or two testicles during war), as well as for the reconstruction of the “syphilitic nose.” In the 1920s, paraffin was abandoned in favor of gum arabic, rubber, cellulose, ivory, and various metals. In 1949, Ivalon, a derivative of polyvinyl alcohol, would be used to produce the first breast implant by subcutaneous injection. The first recipient of these rudimentary implants were Japanese female sex workers, immediately following the war, whose bodies would need to undergo a process of standardization that conformed to the heterosexual requirements of American army consumption.¹⁰⁶ Body transformations have reached a global scale; just as bodies were affected by radiation from the plutonium used in the H-bomb, they will henceforth be affected by polymerized silicone. After 1953, pure silicone becomes the preferred material for the manufacturing of prosthetic implants. Shortly after that, Dow Corning markets the first tube of silicone gel for clinical use. Although highly toxic, its use will continue until the beginning of the 1990s.

105. See Mark Nelson and Sarah Hudson Bayliss, *Exquisite Corpse: Surrealism and the Black Dahlia Murder* (New York: Bulfinch, 2006), which notes the unusual study about the relationship between the surrealist aesthetic and the murder of the Black Dahlia, whose name will become the title of a novel by James Ellroy.

106. Marilyn Yalom, *A History of Breast* (New York: Ballantine Books, 1998), 236–38.

Contrary to what one might think, the biodrag dimension of the pharmacopornographic production of the body (*somatic camp*) doesn't depend exclusively on the use of synthetic materials in its reconstruction of a corporal normality deemed natural. One of the first techniques of breast reconstruction will make its appearance at the end of the nineteenth century when Dr. Vincent Czerny collects a large lipoma growing on the back of his patient to use as material to compensate for a breast that was removed, thereby performing an autograft.¹⁰⁷ Years later, the same principle will be used in the development of autoimplants of body fat for face lifts and the reshaping of the body.

The difference between *bio-* and *techno-* is not a difference between organic and inorganic. In this text, I am not evaluating a passage from the biological to the synthetic but identifying the appearance of a new type of corporality. Recent technologies for the production of the body are not faithful to a classical taxonomy according to which each organ and each tissue corresponds to a single function and location. Far from respecting the formal or material totality of the body, biotechnology and prosthetic technologies combine modes of representation related to film and architecture, like modeling and editing in 3-D. The new surgical technology, which has made possible the application of pharmacopornographic ideas of sexuality (the technical management of masculinity and femininity, the medicalization of the orgasm and sexual desire, telecontrol of

107. Gilman, *Making the Body*, 249.

the fantasy functions of sexuality, etc.) is authorizing processes of the tectonic construction of the body, according to which its organs, tissues, fluids, and, ultimately, molecules, are transformed into the raw materials from which a new incarnation of nature is manufactured.

Microprosthetic Control

Placing research on producing a male birth control pill on the back burner, the pharmaceutical industries have turned toward the development of new methods for administering hormones to women, designed to reduce the scope of management that individual use of the Pill permitted. Most current clinical tests serve the goal of producing a technique of hormonal administering that avoids the oral and intentional route. According to the claims of the pharmaceutical companies, this promotes the following advantages: reduced assimilation of steroids by the liver, reduced risk of short-term memory loss, and improved absorption by effusion of a constant level of doses of hormones into the blood. The first injectable combinations of estrogen and progesterone at a frequency of once a month appeared in the 1990s (like Depo-Provera). The following decade witnessed a gradual program of marketing implants with a base of progestogen, from a six-capsule subdermal implant of silicone progesterone for the skin of the arm (Norplant) to two capsules (Norplant 2, Jadelle) or a single capsule (Implanon). These implants, which currently can release their hormonal compound for between one to five years, become invisible and undetectable once they are placed

under the skin (from which they sometimes cannot be removed).¹⁰⁸ Again, here it's possible to identify the liquid and microprosthetic future of technologies for controlling sexuality, which used to be a rigid, exterior, visible, and weighty affair.

Implanon isn't very different from the classical intra-uterine system (the IUD), especially the model that releases progesterone into the uterine cavity. The difference lies in the place of insertion on the body. Implanon is placed under the skin of the arm, which gives the illusion that it intervenes less in the regulation of sexuality, because the mechanism doesn't directly touch the organs culturally considered to be sexual. Other mechanisms that have recently been marketed are the vaginal ring (inserted into the vagina and left there for twenty-one days, then removed for five days to simulate the natural rhythms of menstruation), and especially, the transdermal contraceptive patch, which is becoming more and more popular. Both devices contain ethinylestradiol combined with progesterone.

At the other extreme of the gender equation, a growth in the administration of synthetic testosterone as a substitution therapy for cis-males has established new perspectives for hormonal research and marketing.¹⁰⁹ The German laboratory Schering, a world leader in contraception with its Yasmin pill, has faced a situation of increasingly intense

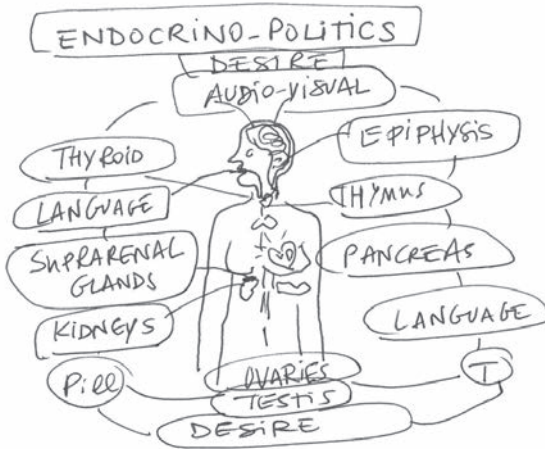
108. For more about injectable contraceptives and implants, see Robert A. Hatcher, James Trussell and Anita L. Nelson, eds., *Contraceptive Technology*, 19th ed. (New York: PDR Network, 2008), 145–70.

109. For more about testosterone deficiency and testosterone replacement therapy for cis-males, see Nelson Vergel, *Testosterone: A Man's Guide*, 2nd ed. (Houston: Milestones Publishing, 2011).

commercial competition for some time now. Hoping to remain in the vanguard in this expanding market, in 2004 Schering began the first clinical trials evaluating the effectiveness of various contraceptive implants or injections for men, all aiming to decrease sperm levels. Such male contraception is founded on principles similar to those behind the female pill. Its effectiveness is based on a formulation of a base of progestogen that acts to suppress the production of spermatozooids; its use would be combined with a substitution therapy derived from a base of testosterone in order to maintain levels of libido and erection. In the twentieth century, no new contraceptive methods have been developed for cis-males. Rubber condoms and sterilization today remain the only low-tech techniques for directly controlling the social circulation of male reproductive cells. It is interesting to note that, although the male pill has not been marketed yet, China and India have tried to develop biopolitical programs of reproductive control that include the management of the male body.¹¹⁰ The pharmacopornographic challenge of the twenty-first century will be the marketing of a panoply of hormonal compounds (often supplemented with testosterone) for cis-males without calling into question the natural makeup of masculinity.

At the same time, as a way of compensating for the established scientific relationship between hormones and cancer, the new contraceptive pills for cis-females are presented as instruments of beauty and feminization—

110. See Oudshoorn, *Male Pill*, 7.



a molecular supplement for somatic refeminization.¹¹¹ Today's pharmaceutical companies announce their desire to produce a contraceptive pill based on "selective estrogen receptor modulators" (SERMs) that will lower the risk of breast cancer—similar to butter that lowers cholesterol levels or methadone as a substitution drug that reduces heroin addiction.

The Pill, a key performative prosthesis of the pharmacopornographic regime, is evolving from a simple technique of birth control to a genuine program for the cosmetic pro-

111. The gynecologists whom I've visited over the last fifteen years, disinterested in my announcement of my trans-queer sexuality, which is exclusively dildoic or anal, suggested with astonishing frequency that I use the Pill as a contraceptive measure. They praise its virtues as a "regulator of the menstrual cycle" and as a way of "alleviating menstrual pains," without mentioning its side effects, except for the carcinogenic risks of its interaction with tobacco. In reality, this is a means of administering cis-females the necessary pharmacopornographic dose of estrogen and progesterone to transform cis-females into a normalized heterosexual female body, with a depressive but stable temperament and a passive or frigid sexuality.

duction of femininity; it is appearing more and more frequently as a therapy for the treatment of acne or hirsutism (body and facial hair on cis-females) or to increase the volume and improve the form of the breasts. Accordingly, new pills with a base of progesterone are being manufactured, among them Drospirenone, which is marketed in Germany and, thanks to its anti-mineral-corticoid properties, promises weight loss and reduced water retention. Today, hormonal therapies also appeal to women in a consumer public who are looking to reduce the frequency and intensity of their periods. Use of these therapies as contraception is decreasing as they become more common in managing menstrual cycles (for example, the new implants allow total elimination of the period for five years). As we have seen, such potential is not new; it was, on the contrary, one of the side effects of the first contraceptive pill developed in the 1950s. During that decade, which saw the gradual displacement of the disciplinary sexopolitical mechanism toward new pharmacopornographic techniques, these effects seemed incompatible with the metaphysics of sex that established an inexorable equation between femininity, fertility, and maternity.

At the same time, we are witnessing a growing spate of marketing campaigns in which the Pill is referred to as an “emergency postcoital contraceptive,” as in the “morning-after pill,” and the abortion pill Mifepristone, also known as RU-486. China was the first country to approve the use of Mifepristone, which was commercialized by the French pharmaceutical company Roussel Uclaf in 1988; China began its own domestic production in 1992. Although

current bioethical debates tend to establish a difference between the Western use of contraceptives and the use of abortive methods within totalitarian regimes, political agency does not depend only on the molecules but rather on their use and critical reappropriation.

In the context of a fast-expanding pharmacopornographic sexopolitical model in which a multitude of potential consumers have increasing access to the molecular production of their gender and sexuality, modulated by the fluctuations of the pharmaceutical market, implants and micropills are heralding a new type of high-tech heterosexuality (which differs radically from nineteenth-century Victorian heterosexuality): the techno-Barbie, remaining eternally young and supersexualized, almost entirely infertile and nonmenstruating but always ready for artificial insemination and accompanied by a sterile supermacho whose erections are technically produced by a combination of Viagra and audiovisual pornographic codes emitted through computerized digital channels. Finally, pharmacopornographic heterosexual fertilization is happening *in vitro*.

With the creation in the 1970s of postmenopausal hormonal substitution therapies using a base of estrogen and progesterone (in the form of gels, very similar to the Testogel that I administer, but also in the form of patches or nasal spray), and their expansion beginning in the 1990s, the cis-female of the twenty-first century is becoming a potential consumer of synthetic hormones who will be taking them for almost fifty years of her life. Now we must add ten or fifteen years of postmenopausal treatment to

forty years of contraceptive treatment. In the near future, we will have mastered other methods that today are experimental: the contraceptive vaccine, also known as immunocontraception, which “immunizes” the organism against the development of an embryo or prevents the ovum from accepting a spermatozoid. One could press on much further with the inventory of such microtechnologies for the management of sexual subjectivity, but in any case, one thing is clear: when it comes to the allocation of funds for financing clinical research, such methods of contraception are in competition with the urgent need to develop methods of prevention of, or a vaccine against, the HIV virus.

The Enemy Hormone: Testosterone and Gender Terrorism

The twentieth century began with the first attempt to market a patch for testosterone for cis-females. In 2004, after several years of clinical tests, the US Food and Drug Administration refused Procter and Gamble authorization to market Intrinsic, the first patch, which administers three hundred micrograms of testosterone a day to cis-females as a remedy for “hypoactive sexual desire disorder” (HSDD), or lack of sexual desire.¹¹² The product was intended, according to Procter and Gamble, for “women who have had their ovaries removed,” but the company was hoping to indirectly reach a much larger public: all the consumers of the Pill who were suffering from lowered testosterone levels. The evaluation of hormonal risks, carried out by the

112. While I was finishing the corrections for this book, Intrinsic had just received a license for pharmaceutical exploitation, beginning March 2007, in the United Kingdom and the rest of Europe.

FDA, obviously did not use the same criteria as those used in the evaluation of progesterone as treatment for ovary ablation or for menopause. Numerous articles, including one published in the overly scrupulous *New York Times* denounced the “political character” of this medical decision and pointed out the pressure that could be exerted on the many “conservative members” of the relevant committee of the FDA. It was the opinion of this committee that “despite the promising results of this substance in improving the sex lives of patients, its use does not seem to be justified.” Even more surprising is the fact that the committee characterized testosterone for women as a “lifestyle drug”—something like Ecstasy or poppers, but for menopausal women. In place of the “strengthened orgasm” promised by Intrinsa (formulated with testosterone), the FDA proposed a range of legal drugs (whose effectiveness is doubtful) to stimulate the sexual function for cis-females: vaginal creams with vasodilator properties (Orexia, Provesta, Vigorelle, Estravil . . .).¹¹³

Nevertheless, the potential market for Intrinsa is enormous. A study of the market recently conducted in the US by a pharmaceutical company focusing on sexual stimulants for cis-females delivered the following results: 46 percent of women say they have never had an orgasm, and 64 percent of married heterosexual women think their sex life is unsatisfying. Another sign of biopolitical displacement: whereas the disciplinary regime of the eighteenth

113. See Kathy Hill, “FDA Panel Rejects Intrinsa,” *About.com*, December 2004: http://uspolitics.about.com/od/healthcare/a/Intrinsa_d03.htm.

and nineteenth centuries pathologized and medicalized the sexual desire of women as a cause of hysteria, masturbation, nymphomania, perversion, or homosexuality, the new pharmacopornographic regime for the first time sanctions the lack of sexual pleasure and desire in women and plans its technical production. And here is the name of that new illness (or somato-political fiction): FSD, female sexual dysfunction. According to these estimates, ten million women in the United States could be candidates for a therapy to promote sexual desire and sexual functioning, in addition to thirty million menopausal women who could gradually attain the status of potential consumers of the product. What could be the FDA's reasons for turning down such a growth market? Pharmacopornographic capitalism clashes with the boundaries of the gender binary epistemology, which continue to function according to models of femininity and masculinity inherited from the nineteenth-century sexopolitical regime that established a strict continuity between sex, sexuality, and reproduction. The gender barriers will not fall easily. Instead, the pharmacological and medical industries prefer to look for new molecules to offset the side effects of testosterone in women ("virilism," "hirsutism"), which are considered undesirable in a heterosexual system. The pharmacopornographic regime does not simply displace the disciplinary biopolitical regime of the nineteenth century, but rather establishes unexpected and strategic alliances with it, creating new somato-political fictions as strange as the Viagra-user-sperm-donor or the sexually-dysfunctional-female-consumer-of-the-Pill.

The T Uber-male of the Future

Although the administration of microdoses of testosterone to cis-females is still rare, testosterone has been recommended for more than thirty years in hormonal substitution therapies for cis-males. The most common method of administration is through AndroGel, distributed in the form of a testosterone gel comparable to the Testogel that I'm taking and produced by Unimed Pharmaceuticals in the state of Illinois.

Anabolic steroids, derivatives that are more or less similar to testosterone, have been used for thirty years to treat hypogonadism, a physiological condition in which the testicles don't produce "enough" testosterone. For the medical establishment, testosterone functions as a substance for the manufacture of masculinity. But it isn't defined as a molecule used to make up for a lack. The role of synthetic testosterone consists in producing the masculine subject that it pretends to supplement; however, the possibility of it being incorporated in a variety of bodies, and its transfer from skin to skin, also opens the way for postidentity drift.

The Nazi government, followed by the American government, were the first to experiment with administering doses of testosterone to animals, as well as to their own soldiers, the civilian population in concentration camps, and prisoners of war. Technologies of gender and technologies of war—the same business. Necropolitics meets biopolitics under the skin. By the 1980s, the pharmaceutical use of testosterone became widespread. In 2006 in the United States, there were four million cis-males undergoing hormonal substitution therapy formulated with testosterone.

According to the medical establishment, thirteen million Americans over the age of forty-five suffer from what is now known as “low-T syndrome,” a condition characterized by an insufficiency of testosterone. The symptoms: a decrease in libido, erectile dysfunction, fatigue, depression, and so on—eventually, the ordinary life of any average cis-male.¹¹⁴ Clinically, there is not enough testosterone being produced in United States.

As seen in contemporary scientific discourse, it has become evident that estrogen, progesterone, and testosterone are transverse substances produced by all bodies, independently of their gender (biopolitically assigned at birth), and that, like the molecules secreted by the pancreas and hypothalamus and by the parathyroid, thyroid, thymus, and pineal glands, function in a systemic and decentralized manner. Cis-females also produce testosterone in the ovaries and in the adrenal glands. Moreover, today we know that in cis-females, testosterone may be responsible for muscular development, the growth of bones, and sexual desire.

The singularity of all hormonal systems (and not the difference between just two systems) resides in the micro-quantities of hormones occurring in each body, in the number of hormonal receptors, and in systemic interactions with the other hormones and receptors. An examination of several clinical endocrinology manuals reveals that the question of the “normal” quantity of testosterone produced by cis-males and cis-females is closely related to the cultural and biopolitical definition of gender difference. For exam-

114. Vergel, *Testosterone*, 2.

ple, the average levels of testosterone in the blood of bodies politically considered to be normally male range from 437 to 707 nanograms per deciliter. But certain bodies produce no more than 125 nanograms per deciliter, and their sexual assignment is still male. According to another manual, also of clinical endocrinology, the “normal” quantity of testosterone production in adult cis-males varies from 260 to 1,000 nanograms per deciliter of blood. It can rise as high as 2,000 nanograms during adolescence. In cis-females, it is 15 to 70 nanograms per deciliter of blood. To such epistemological chaos we must add several absurd pieces of data coming from scientific research: testosterone increases the desire to smoke, but the consumption of cigarettes lowers the production of testosterone; testosterone increases aggressiveness and libido, whereas sex and aggressive reactions increase testosterone levels. Stress inhibits the production of testosterone . . . In the end, we are brought face to face with a vast domain of nonknowledge and potential technopolitical intervention.

Given such complexity, an implacable biopolitical rhetoric about gender, sexual, and racial differences, similar to that elaborated by Arnold Berthold at the beginning of the twentieth century, always dominates hormonal classification and its technical management. Although the experimental programs that determine the production of marketable doses of testosterone, estrogen, or progesterone rely on an ultraconstructivist theory of sex and sexuality, the criteria for the commercialization and public distribution of these molecules continues to respond to a naturalistic metaphysics of sexual difference that claims

the biologically and historically unchangeable existence of two sexes (man and woman), two sexualities (heterosexual and homosexual), and, more recently, two genders (male and female), from which springs the field of deviance and pathology.

For the moment, no Western nation has accepted the legalization of testosterone for women and allowed it to be freely administered to them, understanding that such a situation would risk a semiotecchnical virilization of the female population on its both social and political levels. Two slight somato-political problems that would modify the visual and auditory deciphering of gender are facial pilosity and voice change. It is astounding that in the West, at the beginning of the twenty-first century, in a society that has extremely high-tech methods for the management of reproduction, the deciphering of gender is reduced to degree of facial hair and timbre of the voice. We can therefore say that the beard and the voice, and not the penis and the vagina or X and Y chromosomes, are the dominant cultural public signifiers of gender in our society. Let us cease to speak about men and women and simply say, hairy or smooth body, body with a high voice or with a low voice. These are not details but crucial sexopolitical signifiers with the ability to put into question the idea of virility as the natural prerogative of cis-males. The ultimate problem resides in revealing the politically constructed character of the genders, as well as of heterosexuality and homosexuality.

While I am following my testosterone protocol, several European governments, including the French government and the generality of Catalonia, are studying the

use of “chemical castration” technologies as a penal measure (rather than a therapeutic one) for sex offenders (and especially for pedophiles). The French right-wing president Nicolas Sarkozy’s intention, made public on August 21, 2007, to create a law mandating the use of chemical castration therapies for sex offenders, is one more step in the escalation of the use of biopolitical power to produce and control male sexuality. What processes of bodily transformation are really entailed by such chemical castration? When, how, and on which bodies have similar means of the pharmacological management of identity been already used? What are the underlying political fictions of masculinity and femininity connected to this legal project, and what type of subject are we trying to produce collectively?

Let us examine our pharmacopornopolitical archives: chemical castration consists in administering a cocktail more or less full of antiandrogens (cyproterone acetate, progestogen, or gonadotropin regulators), in other words, molecules that inhibit the production of testosterone. Although one of the effects of antiandrogens can be the diminishment of sexual desire (thought of in this case as excitation and erectile response), it is often not mentioned that the side effects of these drugs are a reduction in the size of the penis, the development of breasts, modification of muscle mass, and accumulation of fat in the hips. In other words, it is a process of “hormonal feminization.” We ought not be surprised to discover that substances with similar antiandrogen effects are used (voluntarily) by transsexuals who are beginning a process of feminization and are changing their gender.

Despite its renaturalizing power, the pharmacoporno regime continually reveals its ultraconstructivist foundations. If we explore the political history of the chemical castration technology, we will learn that it was used in the 1950s in the repressive treatment of male homosexuality; it was, for example, the type of therapy prescribed by English law for Alan Turing, one of the originators of modern computer science. Accused of homosexuality, grave indecency, and sexual perversion, he was compelled to submit to a program of hormonal therapy.¹¹⁵ One sign of a certain scientific confusion is the fact that the same drug is part of current research on a “gay bomb,” a hormonal compound that the American army intends to use to transform its enemies into homosexuals.¹¹⁶ While the United States needs testosterone, its enemies need hormonal feminization.

What the facts show is that chemical castration is a pharmacopornopolitical mechanism aiming less to reduce sexual aggression than to modify the gender of the supposed aggressor. It’s important to draw attention to these therapies as existing exclusively to manage the male “sexual predator.” And the means of punishing and controlling male sexuality is to transform it symbolically and somatically into femininity.

The double-edged effect of these pharmacopornographic policies connects with traditional modes of producing sex-

115. Alan Turing finally committed suicide in 1954. See Andrew Hodges and Douglas Hofstadter, *Alan Turing: The Enigma* (New York: Walker & Company, 2000).

116. For more about the homophobic fantasy of American war discourse, see Judith Butler, “Contingent Foundations: Feminism and the Question of ‘Postmodernism,’” *Praxis International* 11, no. 2 (July 1991): 150–65. An excerpt from this article was also published with another title: “The Imperialist Subject,” *Journal of Urban and Cultural Studies* 2, no. 2 (1991): 73–78.

ual difference in the disciplinary regime: political criminalization of male sexuality and victimization of female sexuality. Chemical regulation always portrays the erection, and as a corollary, masculinity, as a phenomenon that can be produced or heightened by vasodilators or controlled and repressed by chemical castration,¹¹⁷ thereby placing it in the category of an involuntary impulse that is suitable for political management. Meanwhile, feminine sexuality is constructed as a passive territory on which the violence of male sexuality is exerted. There is no biological destiny beyond pharmacopornopolitical programs.

Democratizing the consumption of hormones, which continue to be viewed as sexual, would require a radical change of our gender and sexual topographies. Freely circulating and collectively used testosterone is dynamite for the heterosexual regime. It's no longer only a question of asserting the existence of four or five sexes, as several scientists and theorists of sexuality desire,¹¹⁸ but of accepting the completely technoconstructed, undeniably multiple, malleable, and mutable nature of bodies and pleasures.

The Pill and State Feminism

The masterstroke of the pharmacopornographic regime is its having exploited the revolutionary and emancipatory rhetoric of the feminist movement of the 1960s to pass off the chemical and contraceptive management of the female body as a step toward sexual liberation. In the same way,

117. Let's not forget that François Evrard, the catalyst who launched this legal polemic in France, had a pack of Viagra in his pocket at the time of the rape.

118. cf. Anne Fausto-Sterling, "The Five Sexes: Why Male and Female Are Not Enough," *The Sciences* (March/April 1993): 20–24.

abolitionist feminism entrusted the management of the production and representation of pornography and the sex industry to the state, by demanding the abolition of prostitution and the penalization of pornography.¹¹⁹ In the case of pornography, the result of these measures was the reduction of the sex industry to an underground economy and the marginalization and impoverishment of its workers. When it comes to the “politics of family planning,” the result is administration on a vast scale of estrogen and progesterone for every cis-female in the fertile years. We can assert, and not without a certain rage, that white liberal abolitionist feminism was able to function as one of the paragovernmental ideological devices of the pharmacopornographic regime. It becomes necessary to oppose state feminism with a molecular and postpornographic transfeminism. The grammar and techniques that liberal feminism has plundered from us must be reappropriated to trigger a new counter-pharmacopornographic revolution.

As a contraceptive method, feminism could have made masturbation obligatory, promulgated a sexual strike among heterosexual and fertile women, and advocated lesbianism en masse; made it obligatory to tie the Fallopian tubes at adolescence; and legalized abortion and made it free—if not permitting infanticide when necessary. And there is a political-fiction scenario that could have been even more promising: it was possible, from a biotechnological point of view, to require all women who are of child-

119. The case most representative of using feminism as a state technique of control of prostitution and pornography occurred in the nineties in Canada, where the state solicited feminist rhetoric to establish its abolitionist politics.

bearing age to take a monthly microdose of testosterone, as both a contraceptive measure and a political method of regulating gender. Such a measure would have ended once and for all sexual differentiation and the hegemony of heterosexuality. This doesn't mean that cis-females (on testosterone) would stop having sex with cis-males, but the act would not continue to be interpreted as purely heterosexual. It would have no reproductive goal; in addition, it would no longer be a question of an encounter between two people of opposite sexual orientations, but rather, between two people of gay orientation with the added possibility of vaginal penetration. Postwar feminism could have concerned itself with the management of the cis-male body and declared it to be of national interest: castration, male homosexuality, the obligatory use of condoms, the sealing of the seminal channel, mass administration of Androcur (to lower the production of testosterone in cis-males), and so on. Yes, there were other possibilities, but liberal feminism made a pact with the pharmacopornographic regime.

Testo-trafficking

As a drug, testosterone is relatively easy to buy and sell. A large quantity of it moves through the black market in the field of athletics and cycling. It can be administered through subcutaneous injection, gel, patch, implant, nasal inhaler, or aerosol. In 2006, the sports media called testosterone "the real winner of the Tour de France" and had no qualms about claiming that "testosterone is the drug of champions." Many high-level athletes have tested positive for the presence of synthetic testosterone in their blood. It

makes me chuckle a little when I read interviews in which they declare, “This testosterone is my own, it’s natural.” Poor idiots. It’s like Pamela Anderson trying to pass her size 45E silicone prostheses off as natural just because she’s a cis-female. It’s not at all difficult to go to a bodybuilder’s website to order ten doses of 250-milligram testosterone for seventy-five dollars, postage included. This is the paradox inherent in the strict legal controls that govern the pharmacopornographic regime: gender is for sale.

Applied to a woman’s body, testosterone distorts that body’s relationship to the course of time as well as its value on the heterosexual market. The temporal logic of the genders is asymmetric. Femininity loses value three times faster than does masculinity. In other words, a woman (whether cis- or trans-) is out of the heterosexual market at forty-five, whereas a man can reach sixty-five before becoming obsolete. To calculate the true age of a woman in the heterocapitalist economy, it’s necessary to add fifteen years to make her equal to her male equivalent; then two years can be subtracted for each beauty advantage (breast size, thinness, length and thickness of the hair, etc.), and two years must be added for each social handicap (divorce, number of children—each counting two years more—unemployment, etc.). Let’s take an example: Julie is thirty-two; she’s a divorced cis-female with a child to take care of and keeps in shape, does yoga, is pretty but doesn’t have a perfect body; she is slender and works in an insurance company: $32 + 15 + 2 + 2 + 2 + 2 + 2 = 45$. That’s the hard reality. She will have to stop thinking of herself as a youthful creature of thirty-two, because her real age in the heterocapitalist economy is

forty-five. Bye-bye, Julie. Another possibility would be to go over to the equivalent dyke market, where one's true age diminishes prodigiously. A woman who has reached forty-five in the heterocapitalist economy can arrive at the lesbian economy with a status close to adolescence. Bingo.

Let us consider for a moment the possibility of a molecular revolution of the genders. What would happen if a large proportion of cis-females began collectively self-administering enough doses of testosterone to be socially identified as males? What value would natural masculinity possess? Such a politicohormonal fiction experiment becomes even more pertinent if one thinks that these future technomales, this new species of mutant cis-females identifiable as male bodies, would be capable of breeding and giving birth, corresponding to what Julia Kristeva calls the "female genius."¹²⁰ After using testosterone for six months, at a rate of four hundred milligrams a month, facial pilosity and a changed voice become irreversible. On the other hand, interrupting the administration of testosterone for a few months is enough for menstruation to return, and with it, the potential for fertilization, pregnancy, and childbirth (although the beard and the voice change remain). Fertilization would be just as possible by sexual exchange of reproductive fluids as it would by medically controlled insemination. Sex and in vitro are just two culturally assisted reproduction technologies. Let's take the example of two male bodies, a technomale that still has a vagina and uterus and a cis-male inseminating him by vagi-

120. Julia Kristeva, "Female Genius: General Introduction," in *Hannah Arendt*, trans. Ross Guberman (New York: Columbia University Press, 2001), ix.

nal penetration using a biopenis possessing fertile spermatozoids (something that seems rarer and rarer in today's highly toxic ecology). Seen from the outside, this scene resembles the gay pornographic aesthetic of the twentieth century; but in reality, it goes beyond gay sex and heterosexual sex and points to a technosex future. Obviously, as a technomale, it would be equally possible to be inseminated with donor sperm. At any rate, we would be confronting a new species of technomale postsexual reproducer. And this is the beginning of new perspectives regarding struggles and pharmacopornographic resignifications.

Since I've been taking testosterone, I look at the men and women going by me each day in the subway, supermarket, museum, as bodies whose political decoding has been abusively and brutally determined by the amount of testosterone they produce or administer to themselves. In line with VD to see *King Kong* at the movies,¹²¹ I amuse myself by taking each of the human forms passing into my field of vision and mentally increasing or decreasing its testosterone level. The cis-males simply resemble women with more or less testosterone to which a biopolitical plus-value has been added, and who have been told since childhood, "You're worth more than girls; the world belongs to you; they belong to you; your cock rules over everything that exists." Cis-females are just surgically and endocrinologically modified "men": sophisticated and not so sophisticated interlacings of synthetic collagen, silicone implants, and active estrogen, but still lacking biopolitical legitimacy.

121. Virginie Despentes, *King Kong Theory*, trans. Stéphanie Benson (New York: Feminist Press, 2010).