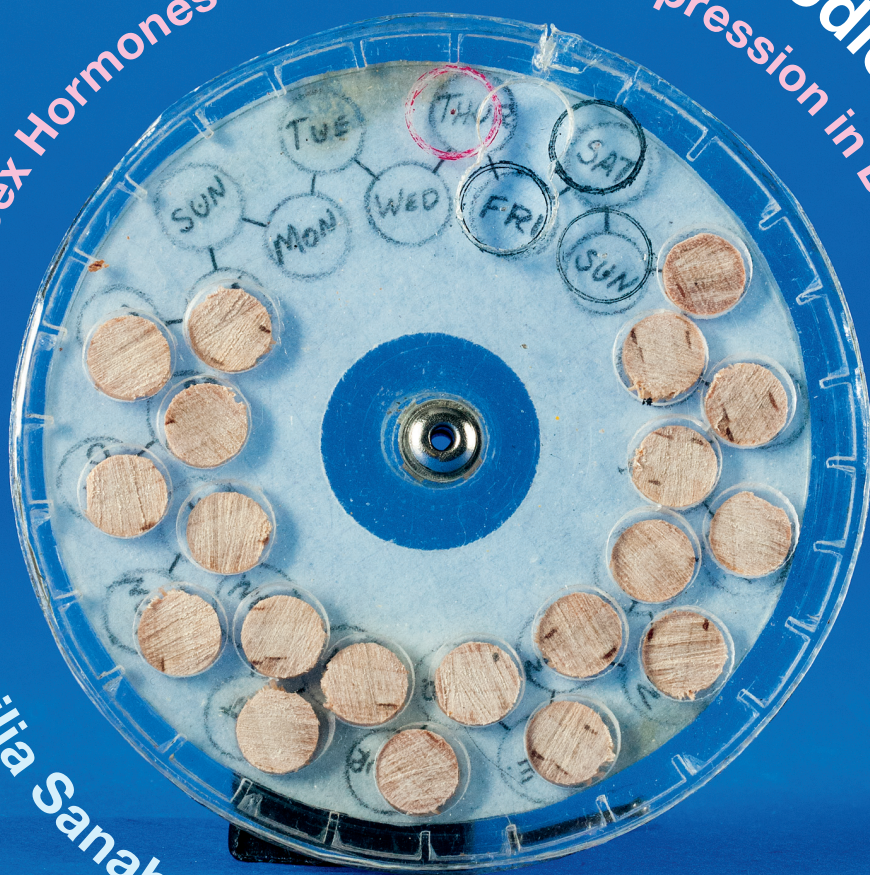


Plastic Bodies

Sex Hormones and Menstrual Suppression in Brazil

Emilia Sanabria



P L A S T I C

B O D I E S

EXPERIMENTAL FUTURES

Technological Lives, Scientific Arts, Anthropological Voices

A series edited by Michael M. J. Fischer and Joseph Dumit

DUKE UNIVERSITY PRESS

Durham and London

2016

Plastic Bodies

**Sex
Hormones
and Menstrual
Suppression
in Brazil**

**Emilia
Sanabria**

© 2016 Duke University Press

All rights reserved

Printed in the United States of America on acid-free paper ©

Designed by Natalie F. Smith

Typeset in Quadraat Pro by Tseng Information Systems, Inc.

Library of Congress Cataloging-in-Publication Data

Names: Sanabria, Emilia, [date] author.

Title: Plastic bodies : sex hormones and menstrual
suppression in Brazil / Emilia Sanabria.

Other titles: Experimental futures.

Description: Durham : Duke University Press, 2016. |

Series: Experimental futures: technological lives,
scientific arts, anthropological voices | Includes
bibliographical references and index.

Identifiers: LCCN 2015039926 |

ISBN 9780822361428 (hardcover : alk. paper) |

ISBN 9780822361619 (pbk. : alk. paper) |

ISBN 9780822374190 (e-book)

Subjects: LCSH: Menstruation—Brazil—Salvador—Prevention. |

Hormones, Sex. | Contraceptive drugs—Health aspects—Brazil—
Salvador. | Menstruation—Social aspects—Brazil—Salvador. |

Menstrual regulation—Brazil—Salvador.

Classification: LCC QP263 .S263 2016 |

DDC 612.6/62098142—dc23

LC record available at <http://lccn.loc.gov/2015039926>

Cover art: David P. Wagner, Pill dispenser prototype for
oral contraceptives, 1962. Metal, plastic, wood, ¼ in. × 3 ⅛ in.
Gift of David P. Wagner. Image courtesy of National Museum of
American History, Kenneth E. Behring Center.

CONTENTS

Acknowledgments ix

Introduction

Plastic Bodies 1

1. Managing the Inside, Out

Menstrual Blood and Bodily
Dys-Appearance 43

2. Is Menstruation Natural?

Contemporary Rationales of
Menstrual Management 71

3. Sexing Hormones 105

4. Hormonal Biopolitics

From Population Control to Self-Control
129

5. Sex Hormones

Making Drugs, Forging Efficacies 159

Conclusion

Limits That Do Not Foreclose
187

Notes 207

References 223

Index 241

ACKNOWLEDGMENTS

This book has been in the making for seven years. Its form has both endured and evolved through the encounters that continue to shape my thinking. Bringing it to completion has been a paradoxical process, one that—in a way—stands contra to its central thesis concerning the plasticity of things. Its present form is enmeshed in a lively web of conversations for which I am deeply grateful.

In Bahia, I was lucky to benefit from the support of the Gender and Health program (MUSA) at the Instituto de Saúde Coletiva (ISC) of the Federal University of Bahia. Thanks in particular to Cecilia McCallum, Estela Aquino, Greice Menezes, Ana Paula dos Reis, Jorge Iriart, Jenny Araújo, and Ulla Macêdo. Thanks also to João de Pina Cabral for transmitting his love of ethnography; to Luisa Elvira Belaunde, Elena Calvo-Gonzalez, Silvia De Zordo, Luis Nicolau Parés, and Ana Regina Reis for the inspiring conversations that helped shape this work; as well as to Rosário Gonçalves de Carvalho, Míriam Rabelo, Cecília Sardenberg, Graciela Natansohn, and Ileana Hodge. This work would not have been possible without the testimonies of the women who agreed to share their stories and insights with me, and I am deeply grateful for their generosity and openness. I am grateful for the patience and interest shown by the staff in the different medical and pharmaceutical sectors in which I was able to work, in particular, CEPARH

and HEMOBA, and to Flávio Costa Pereira and Mauro Bitencourt, as well as to the members of the Association of Travestis of Salvador. Josefa Pereira da Silva deserves special thanks, as does Dona Nanci for her stories. Ivana Chastinet, Márcia Motta, Rose Rihan, Lise Silvany, Rose Silva, Rowney Scott, and the McCallum-Teixeiras taught me about much more than Bahia, and I thank them with all my heart for their friendship.

In the Department of Social Anthropology at the University of Cambridge I was lucky to benefit from the support of Marilyn Strathern, who is an exceptional teacher. I am deeply grateful for her patient guidance, care, and support. During my time in Cambridge I met wonderful scholars who would become dear friends, in particular, Charlotte Faircloth, Zeynep Gürtin, Ann Kelly, Ashley Lebner, Ayesha Nathoo, and Signe Nipper Nielsen. My heartfelt thanks to them for their friendship. I am grateful for the institutional and financial support provided by King's College Cambridge and the Economic and Social Research Council during my doctorate and the Fyssen Foundation and the École des hautes études en sciences sociales (EHESS) during my postdoctorate at the Institut interdisciplinaire d'Anthropologie du contemporain. At the École normale supérieure de Lyon, where I am now based, Frédéric Le Marcis and Samuel Lézé have been wonderful interlocutors. My thinking also owes much to the exchanges sustained with colleagues in the context of the Global Health: Anticipations, Infrastructures, Knowledge seminar at EHESS, Paris, as well as with colleagues of the editorial board of *Sciences sociales et santé*.

Anita Hardon read multiple chapters and followed with astute questions that helped me sharpen my arguments in key places. Working with her and the ChemicalYouth team at the Amsterdam Institute for Social Science Research has been a real pleasure and a marvelous opportunity to push my thinking about drugs and pharmaceutical efficacies further. I am particularly grateful to Kaushik Sunder Rajan for his encouragement, kindness, and friendship and for helping me see more clearly the underlying logic of the book. My heartfelt thanks to Emily Yates-Doerr for her friendship, care, and unfailingly smart advice, as well as to Alex Edmonds for his encouragement and for helping me clarify key ideas. I am grateful to the many people who read or listened and commented on versions of the chapters presented here and with whom I exchanged ideas in the course of this project: Nathalie Bajos, Julien Barrier, Claire Beaudevin, Barbara Bodenhorn, Charlotte Brives, Maurice Cassier, Simon Cohn, Michèle Cros, Philippe Descola, Stefan Ecks, Sylvie Fainzang, Claude Fischler, Soroya Fleischer, Daniel

Frandji, Sarah Franklin, Françoise Barbira-Freedman, Romain Garcier, Jean-Paul Gaudillière, Sahra Gibbon, Susan Golombok, Elena Gonzalez-Polledo, Françoise and Pierre Grenand, Miriam Grossi, Cori Hayden, Nick Hopwood, Julia Hornberger, Stephen Hugh-Jones, Frédéric Keck, Guillaume Lachenal, Patricia Lambert, Anna Lavis, Nicolas Lechopier, Sabina Leonelli, Ilana Lowy, Jonathan Mair, Daniela Manica, Daniel Miller, Annemarie Mol, Anne-Marie Moulin, Alex Nading, Haripriya Narasimhan, Yael Navaro-Yashin, Vinh-Kim Nguyen, Kristin Peterson, Maja Petrović-Šteger, Emmanuelle Picard, Laurent Pordié, Marie-Christine Pouchelle, Fabiola Rohden, Nick Shapiro, Susan Leigh Star, Eduardo Viveiros de Castro, and Umut Yildirim.

The insights, wisdom, teachings, and friendship of Bernadette Blin, Emilia Bucaretti, Jan Day, Lily Defriend, Lucia Durante-Ringham, Josie Fenton, and Roberta Rodriguez have been an invaluable source of support and inspiration. I will never be able to thank my parents Laura Rival and Edgar Sanabria enough for enabling me to listen to and follow my heart. I am lucky to count Francine Sanabria, Martin King, and Pierrette and Daniel Chartier as what, in French, we refer to as *beautiful* parents, and I am deeply grateful to them, as well as to my three wonderful sisters, Chloé Sanabria, Lison Sanabria, and Léa Rival, for their loving care and support. Without Denis Chartier's love, wisdom, and boundless support I would not have been able to write this book. I am so grateful to be walking this path by his side. Birthing and nurturing our daughter, Luce Isadora, helped me deepen my understanding of bodily plasticity. The joy, light, and love she brings inspire me; I thank them both deeply for making the world so bright.

An earlier version of chapter 1 was published (in a different form) as "The Body Inside Out: Menstrual Management and Gynecological Practice in Brazil," *Social Analysis* 55, no. 1 (2011): 94–112. An earlier version of chapter 3 was published (in a different form) in French as "Hormones et reconfiguration des identités sexuelles au Brésil," in *Clio. Femme, Genre et Histoire*, no. 37 (2013): 85–104. A shorter version of chapter 4 was published (in a different form) as "From Sub- to Super-Citizenship: Sex Hormones and the Body Politic in Brazil," *Ethnos* 75, no. 4 (2010): 377–401. Small portions of an earlier version of chapter 5 were published in "'The Same Thing in a Different Box': Similarity and Difference in Pharmaceutical Sex Hormone Consumption and Marketing," *Medical Anthropology Quarterly* 28, no. 4 (2014): 537–55.

INTRODUCTION

PLASTIC BODIES

In June 1975 the *San Francisco Chronicle* and the *San Antonio Express* ran articles on a young Brazilian scientist's research on hormonal contraceptives. "I have declared a war on menstruation," Elsimar Coutinho, the Brazilian scientist, told the *Chronicle*, "his dark eyes flashing." The press coverage appeared in the wake of a meeting of the World Health Organization (WHO) task force on fertility regulation held in Texas. Coutinho told the *Chronicle*: "Before, we thought that lack of menstruation was a bad side effect of the long-term contraceptive pill. Now I consider it the main good effect (sic)." The *Express* reported that "he has patients in Brazil who have not had a menstrual cycle in 10 years." Coutinho is a polemical and highly mediatized doctor. Professor of human reproduction at the Federal University of Bahia's medical school in Salvador da Bahia (in northeastern Brazil), and director of a private research center and clinic called CEPARH (the Centre for Research and Assistance in Human Reproduction), Coutinho derived much prestige from the international networks he partook in throughout the 1970s and 1980s. Manica (2009) shows how he gained considerable local legitimacy through his international connections with institutions such as the Ford Foundation, Rockefeller Foundation, Population Council, and WHO, while opening up research hospitals (and their attending populations) in a strategic region for these institutions interested in the "population problem."

For years, he appeared weekly on women's television programs from where he professed advice about sexuality and family planning and found a unique platform to air his provocative statements such as, "Menstruation is a useless waste of blood" or "Eve did not menstruate."¹

In 2005 I began fieldwork in Salvador with the intent of studying the role that sex hormones play in contemporary social life. I gained access to CEPARH, where a wide array of different hormonal regimens and treatments continue to be administered to prevent unwanted pregnancies, suppress menstruation, regulate moods, maintain youth, or assist reproduction. CEPARH is an atypical institution in the Bahian medical landscape, catering simultaneously—although in clearly differentiated spaces—to a clientele with private health insurance while offering a free, charitable family planning service to the "poor." On one of my first days at CEPARH, Dr. Paulo, one of the clinic's directors, took me on a tour. We began downstairs in the *ambulatório* (outpatient clinic), where a bustling crowd of women was waiting. "They come here from the *periferia* [slums]," Dr. Paulo tells me. "We give them high-quality *atendimento* [care], entirely for free." In the infirmary we met the two nurses who weigh patients, apply the contraceptive injections, and "release" the drugs that the doctors have prescribed. An old-fashioned glass cabinet full of jumbled pill and hormonal injection boxes occupies one wall, next to an imposing manually counterbalanced weighing scale. Faded advertisements for different hormonal contraceptives representing tenderly embracing, white, fair-haired couples hang on the wall. A framed photograph of a cesarean delivery sits on the desk next to a little figurine of a nurse holding a bottle labeled *carinho em gotas* (care in drops). One of the nurses is drawing the air out of a syringe while joking with a young, high-heel-clad doctor. Dr. Paulo introduces me and they nod knowingly. We engage in small talk: Larissa, the nurse, tells us that menstruation is *uma coisa muito moderna* (a very modern thing). Her grandmother only menstruated three times, she explains, her first period came when she was eighteen, then she had seven children, and by the time she was done, she was *menopausada* (in menopause). "Just like as *índias* [indigenous women]," Dra Beatriz added, "they never menstruate either."

Upstairs, CEPARH functions as a state-of-the-art gynecological center, where women who subscribe to private health insurance are offered a host of diagnostic exams and gynecological surgeries, and where doctors prescribe the newest contraceptive technologies, including tailor-made hormonal implants. The paint is fresher; there is air-conditioning and no crowds. A few

days earlier, I met with Elsimar Coutinho in his office on the third floor. It is spacious, and I count nine statues of naked women, some neoclassical in varying shades of gold, several celebrating the pregnant form. I was invited to sit on a predictably low-lying sofa at the other side of his desk, behind a barricade of papers and journals. An enormous three-dimensional model of the female reproductive organs and a few glossy pharmaceutical monographs on new hormonal regimens sit on the coffee table beside me. After reviewing my research proposal, Coutinho noted that they needed more research on the “social” side of things. *Crendices* (beliefs) about menstruation still inhibited the uptake of the new hormonal contraceptive methods they have been developing at CEPARH. “You see, women don’t understand yet that they have a *fake* menstruation when they use the pill. Pill makers used to instruct women to take a pause every 21 days to produce an artificial withdraw bleeding episode that women think is menstruation. But it is not menstruation, it is not natural and not necessary,” he told me in impeccable English.

Menstrual suppression, or the idea that regular menstrual cycling is a new and potentially harmful phenomenon, received much attention globally after the 2003 U.S. Food and Drug Administration (FDA) approval of Seasonale, a contraceptive pill repackaged to produce only four menstrual periods a year (“Seasonale®. Fewer Periods. More Possibilities.”), and the publication of the English translation of Coutinho’s controversial book, *Is Menstruation Obsolete?* (1999).² Widely discussed in medical publications (Association of Reproductive Health Professionals [ARHP] 2004a, 2004b, 2006; den Tonkelaar and Oddens 1999; Edelman et al. 2007; Estanislau do Amaral et al. 2005; Ferreroa et al. 2006; Makuch and Bahamondes 2013; Thomas and Ellerston 2000) and global popular media (in particular, Gladwell 2000), the menstrual suppression debate is founded on two interconnected claims.³ The first consists in differentiating the menstrual bleeding pattern experienced by oral contraceptive pill users from “natural” menstruation and suggests that the former, because of its artificial nature, is dispensable. The second claim denaturalizes regular menstruation, arguing that this is a “new biological state” (ARHP 2004b), since “in the past” or in “tribal” contexts women reached menarche later, had more children, and breastfed them longer than “modern” women do. Indirect evidence, this literature argues, suggests that this increases the likelihood of gynecological cancers and menstrual symptoms—problems purportedly overcome by the uninterrupted use of hormonal contraceptives.

Effectively, Seasonale—like the extended-regime pills used in Brazil—is nothing more than the standard oral contraceptive pill, repackaged. Since its inception in the early 1960s, the pill—as a set of daily tablets—has been “unpacked,” and is better conceived in terms of the synthetic hormones that compose it. It has given way to a multitude of products in different forms of packaging and with different modes of administration. First, there is a profusion of orally administered pills—combination (estrogen and progesterone), mini-pills, extended-regime, or “morning after” pills—associating any variation of the plethora of synthetically produced hormones. These can in turn be brand-name drugs produced by international pharmaceutical laboratories, or copies of these (Sanabria 2014). In addition to this profusion of oral forms, contraceptive sex hormones may be injected (in monthly or trimonthly doses, such as Depo-Provera); implanted subdermally (such as Implanon); or absorbed through the skin (via transdermal patches such as Ortho Evra, creams, or gels), the vagina (via the vaginal “ring” Nuvaring), or the uterus (via the intrauterine hormone-releasing “system” Mirena).⁴ These changes in modes of administration produce different drug entities, but also different kinds of consumers, bodily effects, and subjectivities. Many long-acting hormonal methods intercede in the “normal” monthly bleeding episodes experienced by women. This requires that women be “educated” or “counseled,” to borrow the terms used by the ARHP (2004), to recognize the positive benefits of menstrual suppression, a task that Coutinho has carried out with astonishing determination throughout his career. In this book I examine the ways in which “the” pill has been unpacked and turn my attention to what is done with hormones as they are put to new uses, re-assembled and then released from their packages and ingested or otherwise absorbed into bodies.

Four in five American women (82 percent) have used the pill at some point (Daniels et al. 2013) and 23 percent have used the hormonal contraceptive injection Depo-Provera.⁵ In Brazil, 49 percent of sexually active adolescents use the pill (Rozenberg et al. 2013), as do 27 percent of women in a relationship. This makes the pill the most used method, just ahead of female sterilization. Today over 100 million women worldwide use hormonal contraceptives, and 80 percent of women of reproductive ages in Western Europe and the United States are considered “ever-users,” making the pill one of the most widely prescribed drugs in the history of pharmaceuticals (Brynhildsen 2014; Tone 2001). Sex hormones have become key therapeutic agents in women’s health and are central to contemporary understandings

of the body, sex, and personhood. Yet, despite their ubiquity, sex hormones have seldom been studied ethnographically. Existing work on sex hormones tends either to be historical (Gaudillière 2004; Marks 2001; Oudshoorn 1994; Soto Laveaga 2009), to focus solely on North American contexts (Jones 2011; Kissling 2013; Watkins 2012), or to focus on how knowledge is constructed around sex hormones (Dos Reis 2002; Fausto-Sterling 2000; Löwy and Weisz 2005).

Plastic Bodies provides an ethnographic account of sex hormone use in Bahia, examining how hormones are enrolled to create, mold, or discipline social relations and subjectivities. Hormones are hybrid, complex objects that cut across political and sexual economies and sit at the boundary between sex and gender. This book considers the way the scientific concept of “sex hormones” is materialized into pharmaceuticals and how, as drugs, hormones leave the laboratory and are taken up by users and absorbed into everyday understandings of the body. As an anthropologist, I am interested in making visible the social relationships through which sex hormone uses are legitimized and in showing how these relations in turn mediate the lived effects of hormones. *Plastic Bodies* thus attends to the materiality of sex hormones while arguing that their efficacies cannot be reduced to their pharmacological properties.

The book tells two intertwined stories: the story of hormonal menstrual suppression and a story about bodily plasticity and malleability. Drawing on in-depth interviews with women, doctors, pharmacists, and health planners, I show that the locally prevalent practice of menstrual suppression grew out of Cold War neo-Malthusian concerns with overpopulation in the Global South. In recent years it has been remarketed into a practice of pharmaceutical self-enhancement couched in neoliberal notions of choice and control. I map the specificity of these coexisting biopolitical rationalities in Bahia through an analysis of the peculiar local context of experimentality (Petryna 2009), aspirational class dynamics, and showbiz culture (Edmonds 2010), and by reference to the role that consuming medical services and being knowledgeable about health play in constructing social relations. The book adopts an object-centered approach that enables me to study both private practice medicine and public health institutions and to examine the different ways hormones are prescribed and adopted by upper-middle-class or low-income women. These conversations are often kept apart in anthropologies of Brazil (e.g., Biehl 2005; Scheper-Hughes 1992). *Plastic Bodies* is concerned with the way biomedicine and modernity are embroiled in Bra-

zil (Browner and Sargent 2011; Caldeira 2000; Clarke et al. 2010). Inspired by the pharmaceutical anthropology literature (Whyte, van der Geest, and Hardon 1996, 2002), I followed hormones around, in women's descriptions of menstruation and of the body, in ideas about blood, and in a variety of medical and pharmaceutical contexts. I set out to examine what happens when this biomedical concept travels, reconfiguring lay understandings of menstruation, reproduction, and the body. My questions about *hormônio*—as it is referred to locally—were met with statements about sexuality, gender relations, and reproduction, and elicited discussions concerning hygiene, bodily interventions, and modernity. The ethnography opened into a range of related questions concerning the role of medical institutions and regimes in the making of citizenship. Adopting an object-centered or “follow-the-thing” approach (Appadurai 1986; Haraway 1991; Marcus 1995; Martin 1994), I traced the circulation of pharmaceutical sex hormones, as manifestly material objects, and their associated discourses through a range of contexts. This study of sex hormones as “things medical” (Clarke et al. 2010, 380) or *materia medica* (Whyte, van der Geest, and Hardon 2002)—read through the stratified Brazilian biomedical system—sheds light on how hormones are mobilized within contemporary biomedical regimes (Foucault 1976). As contraceptives, sex hormones are central to demographic interventions at the level of the population, and through the unfurling of new forms of administration, sex hormones are entangled in the individualizing modes of biopolitics, concerned with the disciplining of subjectivities and the performance of the body at the molecular level.

Drawing on an analysis of local understandings of blood and menstruation, and of the role of medical institutions in Brazilian social life, *Plastic Bodies* examines why the body is so readily made open to biomedical intervention in Brazil. The book argues that this can be explained by the fact that the body is understood to be malleable and plastic. It shows that, rather than breaching the body's boundaries, medical interventions are integral to producing the body and its delimitations. In his ethnography of plastic surgery in Rio de Janeiro, Edmonds (2010, 66) argues that Brazilian modernity is an aspirational process, perceived as always incomplete: “The modern is not quite now, but rather a goal that is continuously receding.” This gives medical techniques a particular “mystique” that Edmonds (2010, 67–68) qualifies as a fetishism of technological progress, often driven by mediatized doctors. Malcolm Montgomery, who is famous for his cover stories in Brazil's *Playboy* magazine and regular appearances in people magazines, where he

is presented as the gynecologist of the “stars,” is a fervent defender of hormonal treatments. In an interview I carried out with him, he relayed to me his tale of two sisters: the *natureba* (a derogatory term for “naturalist”) and the *high tech* (in English, in our conversation). The first, who is a hippy, went to live on a farm and had four home-births and breastfed for years. The second is a “beautiful businesswoman,” had two elective cesarean births followed by plastic surgery, and did not breastfeed. The latter is his patient and, at her fortieth birthday, he recently met her sister, younger by one year but “looking sixty, at least,” with her graying hair, collapsed breasts, and—he posited—prolapsed uterus and *rasgada* (torn) vagina. Natural births, he told me, are violent and aggressive; they distend the vagina and damage the perineum. They are “*um espetáculo de miséria estética* [a spectacle of esthetic misery],” he concluded. He narrated to me his experience traveling to the United States for a medical conference in the 1980s, during which feminists had marched “against the pill.” Why would women march against themselves, against their own autonomy, he had wondered?

This intrigued me. Such people have a very naïve view of nature. Nature is aggressive. We had to fight against nature to achieve our quality of life, to have a better life. That thing that Rousseau said about living in harmony with nature, I really don’t agree. . . . It is an error to think that, naturally, women should menstruate. It is biologically correct for women to have roughly between forty and eighty cycles in her life. A modern woman like you will have an average of two children and menstruate uselessly around 400 times. And this is why it is medically interesting to use *anticoncepcionais* [hormonal contraceptives] to lower the doses of hormones that naturally occur when women cycle. The doses administered in *anticoncepcionais* are immensely inferior to the natural peaks that occur when women cycle and which lead to a host of pathologies. Technology is important to adapt to the hostile natural world.

As I explore in this book, the appeal to the distinction between nature and artifice carries, in Brazil, particular values concerning the modernization of the nation, a project intimately tied up with questions of reproduction (Edmonds 2010). Writing from North American or Western European contexts, some authors have argued that recent developments in the biotechnologies reconfigure or “denaturalize” the idea of biology in its relation to the social. This book shows how, in Brazil, this is not new (Rohden 2003, 2001), as nature is already understood to be plastic. Mapping the class and

gendered distribution of the prescribed and improvised hormonal regimes adopted by people in Bahia, it opens up a series of questions concerning the relation between self-improvement, control, hygiene, biomedical citizenship, and the Brazilian project of modernity.

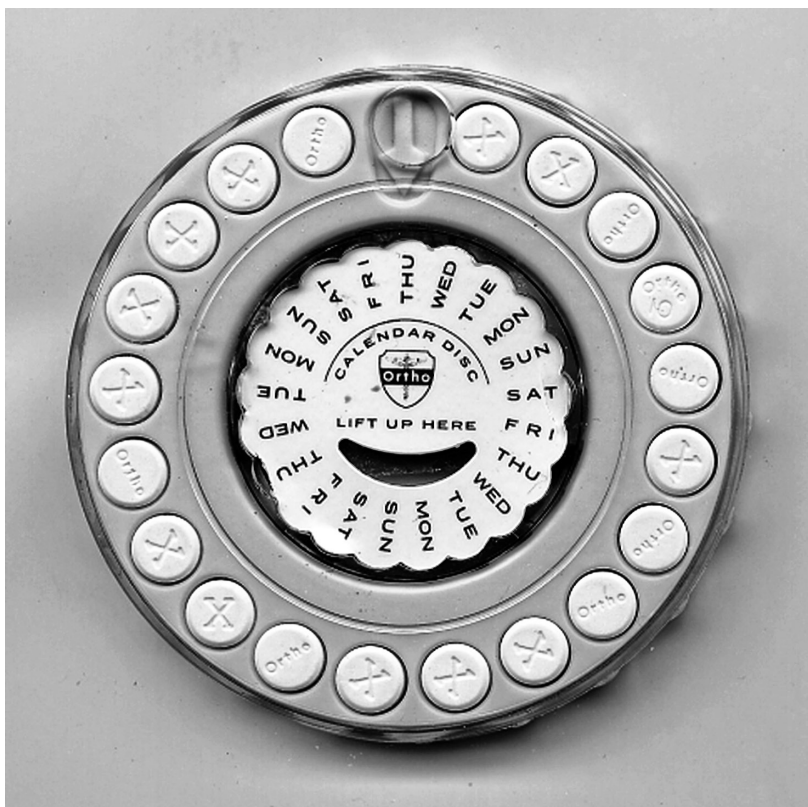
Unmaking “the” Pill: Sex Hormones and Menstrual Suppression

Historical analyses of steroid sex hormones’ disparate configurations in biomedical practices past and present reveal that these are particularly fluid objects (de Laet and Mol 2000). In the mid-1920s sex hormones were involved in clinical trials for menstrual irregularities. In the initial marketing strategy, the contraceptive qualities of hormones were presented as a side effect. The development of these therapies into “the” pill came late given the range of medical indications for which they were being used. One could argue that this played a significant role in the establishment of flexible therapeutic indications for these newly developing pharmaceuticals. This demonstrates the complexity involved in dealing with such objects. The pill, hormonal therapies, or fertility treatments are not natural kinds or categories that we can refer to without evoking their context. Sex hormones, in their form as pharmaceuticals, are made into particular kinds of objects by the social relations within which they exist.

“The” pill was initially dispensed in a glass bottle containing fifty tablets, and issued with directions on how many tablets to take and how long a pill-free interval to count in order to reproduce a monthly cycle. Couples are reported to have placed the pills on calendars to facilitate counting, and in the early Puerto Rican trials “illiterate” women were issued rosaries as counting aids (Gossel 1999). The circular Ortho-Novum dispenser released in 1963 was based on the patent delivered to David Wagner for his pill administration mechanism. This served to stabilize, within the pill’s design, a regular menstrual cycle of twenty-eight days. It is interesting that what Akrich (1996) terms the “temporal coordination apparatus” was built into the pill’s design after the drug was launched as a contraceptive and is not intrinsic to its design. The consolidation of this artificial bleeding episode was further stabilized through a series of changes that were made to the pill’s dispensing mechanism. Thus, the pill came to include dummy or placebo pills, often containing vitamins or minerals, during which women experienced a “mock”—or fake—period. Historically, the monthly withdraw bleeding period experienced in the pill-free (or placebo) interval was considered im-

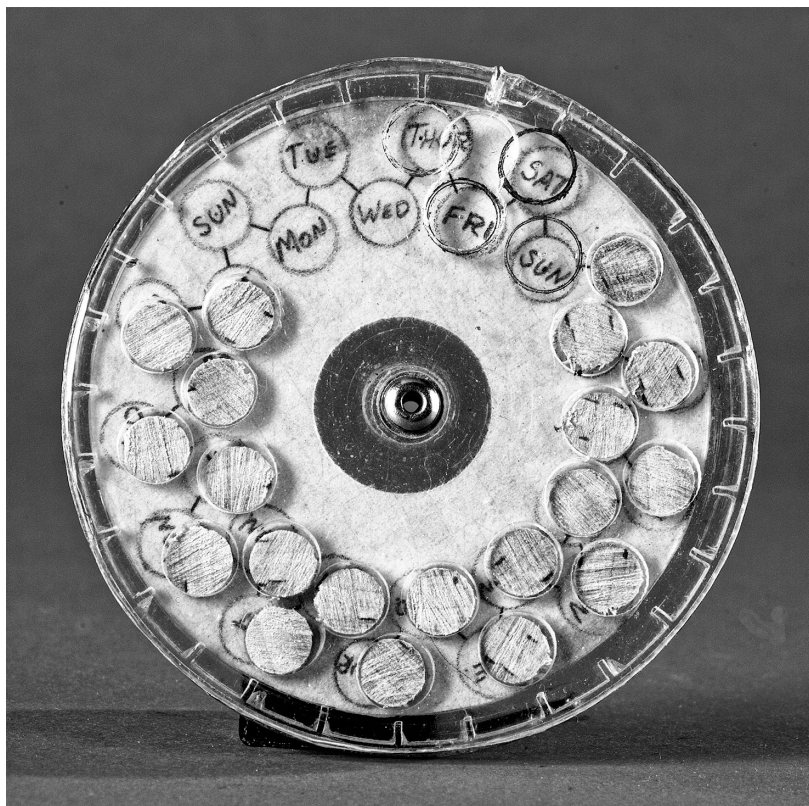


Figure I.1 Enovid, the first oral contraceptive pill approved by the FDA in 1960, was dispensed in a bottle of fifty tablets. Image credit: Smithsonian Institution, National Museum of American History.



Figures I.2 and I.3 The Ortho-Novum 21 DialPak (1963), and its patent, introduced the notion of a cycle into the pill's design. Image credit: Smithsonian Institution, National Museum of American History.

portant for a variety of reasons, by both users (for whom regular bleeding was a sign of nonpregnancy) and doctors who promoted the pill as a form of “natural” contraception in its early days (see Gladwell 2000). It is just another step within this logic to move from scheduled monthly to seasonal bleeding intervals. As we have seen, the extended-regime pill Seasonale provides pills for a “3-month cycle”: eighty-four pink active pills and seven white inactive pills. Interestingly, in Brazil only a minority of oral contraceptives include placebo pills, and women are routinely instructed that they can either take a seven-day break or *emendar cartelas*, which means beginning the new pill pack immediately without taking a break. This is facilitated by the fact that women can readily obtain pills over the counter in pharmacies



without a prescription, giving them greater flexibility in how they use the drugs. This explains why Brazilian women have long been experimenting with extended regimens to skip a period at their convenience, for a party, carnival, or a beach holiday.

The global circulation of sex hormones contributed to deconstructing the pill as a unitary object, either through the development of new forms of administration or packaging design, or through the widening of its field of action to include new indications, such as hormone replacement therapy, skin treatments, and “emergency” contraception. Oudshoorn’s (1994, 1996, 1997) historical work on hormonal contraception provides a context to understand the dynamic of repackaging that I am foregrounding here. She argues that the history of sex hormones is a history of “Western science ignoring the local needs to specific users” (Oudshoorn 1994, 150–51) and traces the demise of the “one size fits all” approach to contraception

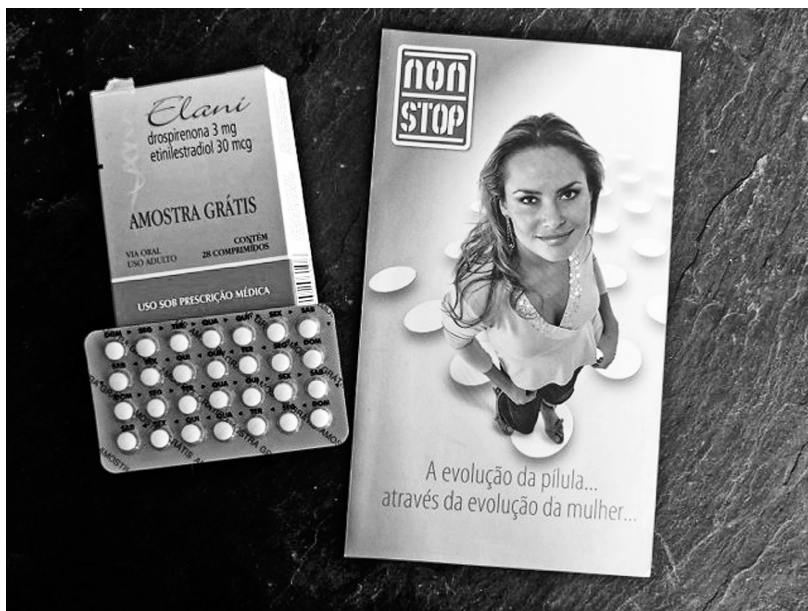


Figure I.4 Elaní is a widely available, fourth-generation extended-regime pill produced by the Brazilian pharmaceutical laboratory Libbs. “Non-Stop, The evolution of the pill through the evolution of woman” is a short information guide produced by Libbs to relay the idea of the evolution of the pill’s design alongside women’s evolution in society. Photograph by Emilia Sanabria.

promoted by early developers of the pill (Oudshoorn 1996). This led to the development of a “cafeteria model” of hormonal contraceptive diversity.⁶ In the late 1970s the WHO actively promoted research on long-acting hormonal contraceptives such as hormonal injections and implants. These were seen as efficacious tools for population control programs because they are provider-administered. This makes them good “technical delegates,” that is, artifacts that are “designed to compensate for the perceived deficiencies of [their] users,” such as women’s tendencies to forget to take their pills daily (Oudshoorn 1997, 44). The WHO research and development program stemmed from the recognition that “the pill” had only been taken up by “middle- and upper-class women in the western industrialized world.” Injectable contraceptives such as Depo-Provera are described by the WHO team in a *Science* publication as particularly “appropriate in developing countries” (Crabbé et al. 1980). This logic was particularly evident in the Bahian public *ambulatórios* where I carried out my research, as I detail

in chapter 3. The problem with long-acting hormonal methods is that they interfere with women's menstrual cycles, which explains, I argue, how the story of hormonal contraceptive development became entangled with the story of menstrual suppression. Gradually, the menstrual-suppressive side effects of the new modes of administration developed for the Global South were rescripted as desirable, primary effects. "Menstruate: What For?" was the title of a recent pharmaceutical industry-funded electronic newsletter (*SaberMulher*) that pinged into my inbox, explaining the health benefits of using long-acting hormonal methods to mitigate premenstrual symptoms. As discussed in detail in chapters 2 and 5, the lifestyle and esthetic effects of hormonal contraceptives gained much coverage in Brazil in recent years.

Contraceptive technologies, like any technology, are inscribed during their development such that representations of future users are materialized into the design of new products (Akrich 1996; Hardon 2006). They contain a configured user (Oudshoorn 1996) that can inhibit their capacity to travel. For the object to travel, a certain amount of context must travel too, so to speak. Failing this, the object is transformed as it is re-localized. For the pill to travel, it needed to be unpacked. As new objects were produced from sex hormones, their circulation worked to differentiate between different consumer populations. This background is important for understanding how choices are presented in reproductive health centers and clinics in Salvador.

DeGrandpre (2006) argues that the efficacies of drugs are informed as much by the cultural scripts that shape user expectations as by the drugs' pharmaceutical properties. As a pharmacologist he is uniquely placed to advocate that his discipline is "not equipped to grapple with the powerful dialectic that exist[s] between drugs, their users, and the historical and immediate contexts of use" (237). He argues that lay and expert understandings are infused with a kind of magicalism that assumes that the effects of drugs reside entirely in the substance, reducing understandings of pharmaceutical efficacy. *Plastic Bodies* examines the unwritten cultural scripts or "placebo texts," as DeGrandpre refers to them, that accompany and shape sex hormones use in Brazil. It does so while simultaneously taking seriously the material efficacies of hormones, attending in ethnographic detail to how hormones "retool sensuousness" (Hayward 2010, 227) by immersing "the body's organs in a chemical bath such that one's proprioceptive sense is . . . changed" (229). The lived experiences of hormones related by people I encountered were widely shared, attesting to a particularly powerful convergence between such proprioceptive retoolings and their attendant cultural

Table 1.1 Menstrual Suppression Methods Available in Salvador

Type of method	Brand name	Active principles
Extended-regime oral contraceptive pills	Elaní (Libbs Brasil)	Drospirenone 3 mg and ethinylestradiol 30 mcg
	Gestinol 28 (Libbs Brasil)	Gestoden 75 mcg and ethinylestradiol 30 mcg
	Any monophasic, combined oral contraceptive pill taken without the 7-day pill-free interval. Options range from Microvlar (Schering) and its “similar” Ciclo 21 (União Química) (0.03 mg ethinylestradiol and 0.15 mg levonorgestrel) to Yasmin (0.03 mg ethinylestradiol and 3 mg drospirenone).	
Trimonthly injections	Depo-Provera (Pfizer) or Contracep (Sigma Pharmaceuticals), Depo-Provera’s Brazilian “similar”	Medroxyprogesterone acetate: injectible suspension of 150 mg/mL
Subdermal hormonal implants	CEPARH’s “tailor-made” implants	Presented in capsules of testosterone, estradiol, gestrinone, elcometrine, levonorgestrel combined according to required dose.
	Implanon (Organon)	Single subdermal implant containing 68 mg etonogestrel
Intrauterine “system” with hormones	Mirena (Schering Brasil)	Intrauterine device (with reservoir containing the hormone levonorgestrel)

<i>Cost/duration</i>	<i>Availability in Salvador</i>
US\$18 for a pack of 28	Launched specifically as an extended-regime contraceptive, Elaní contains the hormone drospirenone and is marketed as the “well-being” pill.
US\$13 for a pack of 28	Marketed as an extended regime specifically for menstrual disorders.
Varies with cost of individual pills (from US\$1 to US\$20 for a 21-pill pack); one extra pack of 21 is required for every 3 months of continuous use.	Widely available in public and private health centers or directly over the counter where prescriptions are not always required for purchasing contraceptives. Most of the women interviewed who had used the pill had at one point taken it continuously.
Prices range from US\$10 for Depo-Provera to US\$5 for Contracep (for a contraceptive efficacy of three months).	Widely distributed method in public health family planning dispensaries and readily available over the counter in pharmacies, many of which apply the injection for a small fee.
Prices range from US\$200 to US\$900 for a contraceptive efficacy of one to three years, depending on the combination.	Limited to private practices with doctors capacitated to insert the subdermal implants. Common in Salvador because of the active presence of CEPARH, which provides and inserts implants on behalf of other doctors and trains doctors in implant insertion.
US\$325 plus medical honorariums. Contraceptive efficacy of three years.	Far less common in Brazil than locally “manipulated” hormonal implants mixing different hormonal compounds.
US\$350 plus medical honorariums. Contraceptive efficacy of up to five years.	Limited to private practices because of the high cost. Brazil has the world’s highest rate of Mirena use according to several Schering informants.



Figure I.5 The hormonal injections most commonly found in Salvador are Depo-Provera's "similar" Contracep (medroxyprogesterone acetate 150 mg/mL), Depo-Provera, and the monthly injection Mesigyna. Photograph by Emilia Sanabria.

scripts. Interestingly, medical professionals did not always recognize the shared lived experiences widely imputed to sex hormones as hormonally induced. For example, many women experience headaches or weight gain, a fact that was often rebutted by doctors with the refrain: *Hormônio não engorda, é comida que engorda. Fecha boca, querida* [Hormone doesn't cause weight gain, food does. Close your mouth, darling].

Martin (2006) calls attention to the displacements at work in assessments of pharmaceutical effects. She reviews how adverse side effects are displaced to small print, how population-level effects of clinical trials are off-shored to the developing world, or how marketing and clinical practice keeps the ambivalence people may have about the limited or at times toxic efficacies of the *pharmakon* at bay. While negative effects are laboriously kept "over on 'the side,'" Martin (2006, 282) reminds us that it is "a short step from side effects to 'collateral damage.'" Drawing on Martin's analysis, Masco (2013) asks: "what makes one outcome the benefit of the drug, and another its negative side effect? How is it that this powerful line is drawn, and what forms of value are revealed in its calculus?"⁷ The ways in which the potentially

harmful effects of sex hormones are assessed and regulated are variable and contested (Löwy and Weisz 2005).⁸ A considerable epidemiological literature on the risks of venous thrombosis in oral contraceptives users points to the increased risk for smokers or women using first-generation pills that were more highly dosed.⁹ While risks fell with second-generation pill use, controversies resurfaced in the wake of new studies into the increased risks carried by third- and fourth-generation pills, which presented small but consistent increased risks of thrombosis in relation to second-generation pills (see de Bastos et al. 2014; DeLoughery 2011; Marks 2001; and Stegeman et al. 2013 for a discussion of earlier risks).¹⁰ A recent Cochrane review comparing extended-cycle with traditional cyclic dosing (a bleeding interval every three months versus monthly) is curiously contradictory on the topic of safety (Edelman et al. 2014). The widely available abstract states that evidence from randomized controlled trials “is of good quality” and that continuous dosing is “a reasonable approach.” But buried in the full-text version one finds the mention, almost in passing, that “the studies were too small to address efficacy, rare adverse events, and safety.” My own reading of the data reviewed in this meta-analysis (which includes a 1995 study conducted by Coutinho’s team in Salvador) reveals that more than half the studies cited reported conflicts of interest with the pharmaceutical industries whose drugs are trialed. Endocrinologists Prior and Hitchcock (2014) note that with the extended-regime pill, women are exposed to 25–33 percent increased estrogen exposure. A meta-analysis of cardiovascular risks showed that even the pills with the lowest dose cause a doubling of the risk for stroke and heart attack (Baillargeon et al. 2005). Existent studies are biased, Prior and Hitchcock argue, because they compare risks with risks on standard regimen pills and not with untreated menstrual cycles. Further, the continuous pill regimen causes more days of higher-than-normal estrogen concentrations, which is likely to have an incidence on breast cancer.

Depo-Provera, a popular method in my field site, underwent numerous controversies in its career as a contraceptive. The FDA withheld approval for Depo-Provera in 1967, 1978, and 1983 and then approved it in 1992 despite outcry from women’s health movements. In 2004, concerns over loss of bone density in Depo-Provera users led the FDA to request a warning highlighting concerns about loss of bone density and indicating that Depo-Provera should not be used for more than two years. Such warnings were absent from the Depo-Provera applications that I observed. In Bahia, risk-benefit analyses put forward the substantial personal and public health con-

sequences of unwanted pregnancies or emphasize the reversibility of long-acting hormonal methods in relation to sterilization—the rates of which are still very high.¹¹

I do not engage here in a debate over the relative safety of different hormonal methods, but rather attend to how the potential deleterious effects of hormones are—or are not—raised in Bahia and how these inflect patterns of use. What is most striking about the question of the potential risks associated with hormonal methods is the absence of debate within the Bahian medical community. This was evident both in the interviews I carried out with doctors and in the gynecological conferences I attended. Patients often did raise concerns, but these tended to focus more on experienced side effects rather than concerns with future health risks, such as thrombosis or cancer. These were routinely met with the ready-made, finely tuned, and locally sensitive counterarguments that pharmaceutical sales representatives and doctors establish through their interactions. Oldani (2004) has shown how these ground-level exchanges between pharmaceutical representatives and doctors can inflect local marketing strategies, leading to adjustments in how a pharmaceutical is used and thought about in different prescribing ecologies. In Bahia, I found that doctors' risk-benefit evaluations tended to downplay future health risks in order to ensure compliance and the correct use of hormonal methods in a context where women are seen as switching and swapping erratically, without medical advice. Emphasis was placed on finding the most adapted method, and this often meant bracketing potential health concerns. Women also were engaged in complicated risk-benefit exercises. As I detail in chapter 3, these risk evaluations do not limit themselves to evaluations of health risks. Users' cost-benefit analyses include thinking through the potential costs of not using hormones, which might range from unwanted pregnancy, incapacity to work because of heavy menstrual symptoms, or loss of libido, leading one's husband to stray. Returning to Masco's question concerning how the line between primary and side effect is drawn, we can see the importance of context in shaping how benefits and risks are evaluated. Bahia, with its specific forms of stratified reproduction (Ginsburg and Rapp 1995), has played an important role in the development of the practice of menstrual suppression, that is, in the transmutation of what was initially perceived as a negative side effect of long-acting hormonal methods (the suppression of monthly menstrual episodes) into a desirable end goal. The cloaking of risks in Bahian medical practices should be thought alongside the labor of making evidence

about safety for markets in the Global North. They are part of a common regime of value in which lively capital (Sunder Rajan 2012) is produced out of the circulations of pharmaceuticals and their attendant knowledges. Producing new efficacies for sex hormones is facilitated by what Lovell (2006) has aptly termed “pharmaceutical leakage.” Leakage describes how pharmaceuticals are shaped by the movements of drugs through global spaces of research, development, production, marketing, and regulation. As sex hormones circulate globally they leak between official and unofficial prescription regimes, reconfiguring bodies and socialities by circulating “not only through blood, brain, and other body sites but also through social settings” (Lovell 2013, 131).

Salvador da Bahia

Over the course of eighteen months, I attended several hundred family planning consultations at CEPARH and in three health posts or maternity units where hormonal contraceptives are dispensed. I interviewed doctors about their work in state-funded services and in their private practices. During participant observation activities in these clinical contexts, I sat in on the stages of *triagem*, observed the preinterview with the nurse and social worker, as well as the consultation itself, during which methods are administered, injected, or inserted. I also went out with CEPARH’s municipality-funded mobile unit (CEPARH-móvel) to several *favelas* and partook in a variety of women-centered community activities in these peripheral neighborhoods. Access to gynecological consultations in the private sector was more limited than in the public sector, whose users are presented as appropriate research subjects by medical professionals. My access to the private sector was via the operating theater in two private institutions, where I was able to observe hysteroscopies, laparoscopies, and a dozen births, of which the majority were by cesarean delivery. In CEPARH and in a small neighboring town’s maternity unit I was also able to observe three tubal ligations, a dozen vasectomies,¹² and one postabortion curettage. This enabled me to situate hormone use as an engine of new sexual normativities in the changing biopolitical arrangements that link national progress to the constitution of a sexually healthy Brazilian population (Adams and Pigg 2005).

I also conducted over sixty in-depth interviews with women across the class spectrum. These women were urban (although some were of rural origin) and of mixed socioeconomic background. The openness with which



Figure I.6 Waiting for contraceptive methods in the shade of CEPARH's mobile unit in a low-income peripheral neighborhood. Photograph by Emilia Sanabria.

people in Brazil speak publicly about their bodies' most intimate processes has never ceased to amaze me — perhaps the product of having lived in England for so long. Not only are bodies publicly made visible in specific ways, but the women I encountered draw on an array of widely circulated techniques, health tips, pharmaceutical regimens, or physical exercises to modulate their bodies and its processes and to monitor its metamorphoses. I felt my own body scrutinized in particular ways as I entered into clinical spaces where class boundaries are reestablished through close attention to physical appearance, dress, and presentation. But, more importantly, I began to feel differently in my body, to pay attention to things I had never noticed before. Digestion and the specific effects of foods, the embodied manifestations of emotions, the state of one's blood pressure, the relative efficacy of different brands of painkillers, or the reference values for a normal white blood cell count formed part of everyday conversations across a range of social contexts and brought my attention to processes to which I realized I had never given much thought. I was surprised by the extensive knowledge many women had of the different contraceptive methods available, their recommended uses or side effects, and often felt slightly inept when women were

surprised to discover that I was quite literally doing exploratory research and not myself always as biomedically versed as they were.

I did not deliberately discriminate between informants in function of sociological categories, speaking to women of diverse backgrounds and with a broad range of views and attitudes toward menstruation and hormones. Within these discussions, I privileged questions about contraceptive choice, experiences of menstruation, reproductive histories, gender relations, and perceived generational shifts in these areas. The topics of sexuality, body culture (narrated to me as a Brazilian specificity), “self-care,” medications, well-being, beauty, changing family structure, and abortion regularly arose, demarcating the discursive field within which sex hormone use is commonly situated.¹³ During the initial period of fieldwork (2005–6), and in four subsequent visits of three to six months between 2008 and 2013, I attended medical congresses and carried out several weeks of fieldwork in three pharmacies catering to low-, middle-, and high-income neighborhoods. I met pharmacy sector regulators and members of pharmacist professional organizations. I interviewed the national marketing directors of four major pharmaceutical corporations in São Paulo (Schering, Pfizer, Libbs, and Boehringer Ingelheim) and followed the work of Schering’s, Libbs’s, and Organon’s regional managers over the course of several months. I met a number of other pharmaceutical representatives in doctors’ waiting rooms, some of whom allowed me to observe their work. Through these contacts I was invited to several pharmaceutical promotion events (such as promotional dinners and in-congress events). Several informants suggested I go to the blood donation center to find answers to my questions about *hormônio*, blood, and menstruation. There I encountered patients who no longer menstruated and sought to alleviate themselves of the excess blood accumulated by this absence of menstruation (Sanabria 2009, 2011). For several months I also participated in ATRAS’s (the Association of Travestis of Salvador) weekly meetings and organized group discussions on *travesti* uses of hormones. Travestis, as they refer to themselves, are physiological males who use female sex hormones (among other techniques) to transform their bodies. I had not initially anticipated to trace hormones all the way into these sites but, as I detail in chapter 4, this enabled me to understand how hormones are rendered as a kind of substance in Bahia, not unlike blood.

Brazil’s first capital and home to a large afro-descendent population, Salvador counts nearly 3 million inhabitants (IBGE 2013). The city spans a vast heterogeneous urban space between the Bay of All Saints, the open sea, and

inland hills. Recent modernization includes the renovation of the old colonial center (*Pelourinho*), the expansion of middle-class neighborhoods along the seafront, and development of vast tourism installations for both national (Brazilian) and foreign tourists. The Northeast is considered the poorest of the five Brazilian macro-regions, wherein wealth is disproportionately concentrated in Salvador. Despite its size, Salvador has the feel of a small city, and it is often said that *Salvador é um ovo* (Salvador is an egg) when gossip gets around with astonishing velocity. Bahia occupies a place that is carefully set apart as sensual, jovial, and backward by Southerners of São Paulo or Rio. Many have attempted to capture the core elements of this *baianidade* (Bahian-ity), which, aside from the slurry speak commonly associated by Paulistas (residents of São Paulo) with the purportedly “lazy” Northeasterner laborers, includes the specific style of samba (different from that practiced in Rio), the particular culinary tradition, or Bahian religiosity and “popular culture.” Salvador is often characterized by its *sincretismo* (syncretism), a representation in the national Brazilian imaginary that owes much to the idea that Brazil is the product of the mixture of the three races: European, African, and indigenous. The specificities that mark Bahia are often attributed in popular representations to the strong presence of “Africa” in Bahia, a legacy of slavery. Parés (2006) and van de Port (2011) have noted the importance of the colonial Baroque heritage to Bahian modes of being, suggesting that what is often taken for an African heritage is the product of a long history of hybridization and mixture that cannot be reduced to the problematically bounded entities “Africa” or “Europe,” as they so often are. I was in São Paulo in January 2006 when the case of Father Pinto’s excommunication from his Catholic parish in Salvador hit the national news. The controversy began during the epiphany celebrations when the priest was said in the national press to have “turned mass into a show” by staging a celebration to, in his words, “honor the different races of Brazil,” representing each of the three kings as “white,” “black,” and “Indian.” What shocked was the fact that he appeared in full makeup, emulating an Amerindian dance and appearing as Oxum, a female Afro-Brazilian deity dressed in gold. Arriving from Bahia, people I met in São Paulo jokingly distanced themselves from these Bahian extremes of cultural “miscegenation,” exclaiming: “*Só na Bahia, né!*” (Only in Bahia, no?). Bahians often narrate Bahia as a particularly “spiritual” place. Among medical professionals I met many Kardecist spiritists, a Christian-based religion founded on the channeling of predominantly eighteenth-century European spirits, a doctrine of reincarnation, and



Figure I.7 Two Mães-de-santo (Candomblé priestesses) share a joke at Iemanjá festival, Rio Vermelho (Salvador). Photograph by Emilia Sanabria.



Figure I.8 Bahian “multiculturalism”: Candomblé folk and a white middle-class woman observing a ritual dance during Iemanjá festival. Photograph by Emilia Sababria.

healing performed at a distance. A wide array of energy healing practices grew out of this rich polysemous context, and biomedicine is, in a sense, but one of many resources that people call on in their search for health. As Dra Eugenia, a gynecologist I interviewed in her private practice, explained: “Here everything is miscegenation. See that image of the Virgin behind you? That was given to me by Mãe Carmen do Gantois [a well-known Candomblé priestess], and in the bottom corner of the frame is Krishna. Here [shows key ring] is Sai Baba. I love Candomblé, and I like to go to mass at Our Lady of Conceição. You see, I’m Bahian, I’m genuinely ecumenical.”

Many have attempted to characterize Brazil’s specific sexual culture, emphasizing the sensuality that marks many aspects of sociality and invites “passionate encounters” (Van de Port 2011, 48). Drawing on Freyre’s (1990) analysis of sexual miscegenation as foundational to the Brazilian nation, Parker (1991, 28) argued that, in Brazil, sexual life acquired a central importance at the sociocultural level, whereas in Euro-American contexts it is treated as a private or individual phenomenon. In this reading, Brazilian

society is heir to the social organization characteristic of the slave-owning *fazenda* (estate). The *fazenda* connected the patriarch, his wife, and his legitimate offspring to a network of relations that included the patriarch's mistresses, illegitimate children, slaves, tenants, friends, and clients. This, Parker (1991, 31) argues, produced a notion of masculinity tied to the image of the virile and hierarchically superior patriarch and a plural model of femininity, as "legal wife and mother" or "concubine" (5). The different roles of women as objects of desire or as respectable wife and mother are at times difficult to reconcile, and part of what Brazilian feminists denounce as the double standards of sexual morality, whereby male sexuality is encouraged and positively valued, whereas women are expected to elicit desire without compromising their virtue. Parker's analysis is focused almost exclusively on male sexual discourse, allowing him to capture the tenor of *machismo* ideology in a vivid way, using the crude, sexist language of his informants. The extent to which this glorified sexual culture is actually reflected in everyday intimate relations has, however, been questioned (Galvão and Diaz 1999). Drawing on a survey of 4,634 youths in three Brazilian capitals, the authors of the GRAVAD study of young people's sexuality and reproductive trajectories argue that this representation of Brazil as a sexually uninhibited society coexists with a rigid system of gender relations and familial organization that spans all classes (Aquino et al. 2003; Heilborn et al. 2006; Heilborn, Aquino, and Knauth 2006; Heilborn and Cabral 2013). Many of the doctors and health practitioners I spoke with told me that a surprising number of patients consulted for sexual problems. In this context, the capacity attributed to hormones to generate sexual effects—both stimulating desire and protecting from unwanted pregnancy—was particularly appreciated.

When my partner and I first settled in Salvador, we opted for the 2 de julho neighborhood, a lower-middle-class, slightly bohemian neighborhood in the old center, lodged between the Campo Grande, the exclusive seafront Vitoria avenue, and *crackolândia* that gentrification and real estate pressure has yet to prevail over. Campo Grande is a central node for many of Salvador's convoluted bus routes. I spent hours negotiating these routes on my way to distant, painstakingly arranged appointments with doctors, health planners, or interviewees who had at times forgotten me by the time I made it to their door. Riding the overpacked, overheated bus up to Federação, where CEPARH is located, one passes steep roads leading into some of the neighborhoods that house the older Candomblé houses of the city.

One spot just after the old cemetery always caught my attention; in the early mornings there would often lie a fresh offering to a *santo* (saint), a yellow ceramic bowl left at the crossroad, the wings of the sacrificial chicken flapping in the morning breeze. One morning I sat behind an ancient little lady who boarded the bus at the large public hospital in Canela. She wore a faded green dress, plastic shoes, and an old stained handkerchief to contain her vibrant white Afro. She carried a battered plastic bag and multitudes of little bags within it, full of treasures, buttons, a shredded identity card, papers that had been folded so many times that it was not clear how they still held together, a single white pill cut out of a blister pack, a little key, a rubber band. She shifted these from one plastic bag back to the other, reorganizing her world. Each of these possessions was manipulated with great care as she knotted and unknotted the little bags and handled these documents, keys into the labyrinthic bureaucracy that I found so challenging to negotiate and that can make citizenship a perpetually receding horizon for many Brazilians. I observed her as we rode down Barra *avenida*, with its Land Rovers; shiny, Lycra-clad, siliconed joggers hooked up to their iPhones; straight, blond, mega-hair extensions; arts cinema; *sorveterias* (ice cream parlors); top-end pharmacies with their imported pharmaceuticals and cosmetics; exclusive diagnostic imagery labs; and *salão de beleza* (beauty parlors), struck by the vivid contrasts so characteristic of Brazilian urban centers.

Over the years I have come to love and long for this city like few other places in the world, despite its intense inequalities, receding public space, and intense commercialism. There is something about the sensuousness and aliveness of Salvador that is hard to capture. A vibrancy in the way I observe my friends engaging in life with joy, letting things unfold even when they struggle with financial difficulties, the absence of the state or the violence that marks the everyday. The strange risk evaluations that shape existence, as one crosses into the peaceful square where seniors gossip, in the early evening freshness, to the monotonous sound of chanting from the mass held on the corner, church doors wide open onto the world, where a shooting occurred in broad daylight, only weeks before, killing three people, one of whom was a pregnant woman. Feral bare-bottomed children play in the ornamental vegetation, their mother lying, disheveled, on a length of cardboard beneath a bench, having visibly made a visit to nearby crackolândia. A huge iguana with sharp teeth observes the scene as two men theatrically exchange a verbal joust, cheered on by onlookers. On one corner a vendor sells pink, blue, and orange popcorn from an antique trolley, topped with



Figure I.9 Measuring blood pressure on a street corner. Photograph by Emilia Sabinaria.

condensed milk for an extra *real*. Next to him a coconut water vendor and a corn-on-the-cob vendor are rehearsing the latest carnival hit's suggestive choreography, well aware of the attention their sensual dancing is eliciting. Buses, people, traffic. At the opposite corner a woman in a white lab coat and matching baseball cap has set up a white plastic chair and table and is measuring blood pressure and glucose plasma levels for a small fee. She is a nursing auxiliary and tops up her earnings in this manner. Outside the bank is a good spot to catch hypertension, she jokes, gesturing to the long queue of people waiting to pay bills or renegotiate a loan.

In this book I show that the extreme incursion of biomedical interventions into people's lives in Brazil should be considered alongside other, older, or more mundane forms of bodily management, such as the regular monitoring of blood pressure on a street corner between errands. Bodily processes are of great interest to *Soteropolitanos* (inhabitants of Salvador). Clinical exams of all descriptions—from blood tests to scans, functional magnetic resonance imaging or x-rays—are remarkably present in a context marked by such disparities in access to health care. These imaging

techniques constitute a new set of tools to assess, measure, and quantify the bodies' internal metamorphoses. This marked attention to bodies is not limited to the assessments made possible by these medical technologies; rather, their astonishing prevalence attests to the fact that these respond to existing concerns. Dumit (2012, 181–96) has outlined three modes of biomedical living with mass health in the United States. These are “expert patienthood,” “fearful subjects,” and “better living through chemistry.” Here, pharmaceuticals are mobilized to mitigate the risks generated by the new regime of surplus health. The statistical model of mass health is marked by an encroaching paradigm of treatment as prevention in which health and illness are no longer “states of being” (13) but reconfigured as epistemic claims at the population level. This invites patients to become responsible, self-diagnosing experts of their own health, monitoring their blood levels regularly, for example. As Dumit (2012, 192–93) notes, this mode of better (pharmaceutical) living “offers a new choice through reconfiguring what is considered foundational and fixed and what is changeable and can be countered.” In *Plastic Bodies* I examine how biology and nature may also supply notions of instability and changeability and show how human action is often geared to fixing and stabilizing this flux. “Knowing your numbers” in this way takes on a magical quality, enabling expert patients to navigate dysfunctional health systems and make (new) sense of their bodies' changing internal balance.

While characterized by profound inequalities, statistics place Brazil among the highest users of female sterilization, cesarean deliveries, and plastic surgery (Edmonds 2010). The 2002 EngenderHealth publication on female sterilization reported Brazil as having the third highest international rate of female sterilization, placing it above China. Victora et al. (2011) report in *The Lancet* that 47 percent of all births in Brazil were by cesarean delivery, a rate higher than has been reported in any other country. Cesarean deliveries are performed on 48 percent of primiparous mothers and account for 35 percent of deliveries in the SUS (Sistema Único de Saúde, the public health service), where three-quarters of births take place. The National Agency of Supplementary Health reported in 2008 that 85 percent of births in the Brazilian private health sector were by cesarean delivery, and one of the clinics in which I worked boasted a 99 percent rate. In an article exploring the prevalence of cesarean deliveries in Salvador, McCallum (2005a, 226–27) argues that:

The sexually adapted, attractive and active female body—the proper condition of modern Brazilian women—is represented by untouched and aesthetically pleasing genitalia. These genitalia, if also used for giving birth, lose their power to signify modernity and progress. On the contrary, when sexuality and reproduction become inter-linked through vaginal childbirth, the meanings attached to the genitalia's referent (the female body) are inverted. Such a body is pre-modern, damaged. It is repulsive to others. . . . That this old-fashioned form of birth is also seen as “natural” confers no value on it whatsoever. On the contrary, nature itself is devalued, measured against the gains conferred by science and technology. Abdominal birth lends modernity, and thus continued value, to women's bodies. . . . And women are agents only insofar as they “choose” the knife—and, by this token, “modernity.”

The relation between class, modernity, and practices of bodily modification and enhancement therefore needs to be carefully examined. Accounting for the unusually high levels of biomedical interventions solely through the lens of medicalization—that is, the domestication of social inequities with medical solutions that conceal the sociopolitical roots of ill-health (see Scheper-Hughes 1992, for example)—seemed unsatisfactory to me. Throughout fieldwork, in listening to the stories of women who actively sought out such interventions and in observing their engagements with biomedical institutions, procedures, and technologies, it dawned on me that although this was certainly an important part of the story, other things were going on.

Plastic Relations: Class, Race, and Bodies

Dr. Ricardo picked me up at 6 a.m., and we made it to the maternity unit by 7 a.m., at which time a long queue of patients had already formed. The unit was small, making the process of triage explicit, that whole business of counting people, turning their stories into ticked boxes, percentages, and pharmacological formulas. I was numb with that kind of numbness you get when you flick through TV channels and hypnotize yourself. Faces, stories, questions all merged into each other. I had a revelation as I realized that after six hours of attending some fifty patients, all these persons blended into one other, becoming a mass of cases. That experience was an unwitting moment of participation in what is often referred to in Bahia as the

“dehumanization” of medical attention. It was the point at which my understanding of medical practice shifted and came to include an understanding of how things felt for doctors in this context of scarce resources and the “social problem,” as Ricardo refers to it. We walked down a corridor, to the “private” part of the unit, newly built and latched onto the old crumbling pink colonial building. Several neatly dressed patients were waiting. He exchanged caring words, hugs, kisses, and jokes with them. We took place in the very new, air-conditioned *consultório*, where there was markedly more time for listening and discussing, more space for negotiation, for finding a way (*dar jeito*). The contrast, so proximate, was striking. Most of the gynecologists I met juggled several jobs, moving on the same day from the private to the public sector (SUS).¹⁴ The typical pattern is attending patients in a SUS health post or public maternity hospital in the morning and holding private consultations in the afternoon.

We had a quick lunch in the hospital cafeteria, and idle talk rapidly gave way to sexist jokes exchanged between the hospital’s director, Mineiro the anesthetist (a self-proclaimed *petista* [PT activist] studying for a law degree), and Ricardo. After a phenomenally sweet but much needed coffee, we went straight up to the labor ward where four young, heavily pregnant women awaited “their [scheduled] surgeries.” We proceeded into the operating theater for the first delivery. I was impressed by how quick it was: twenty-seven minutes from the first incision to the final stitch. The baby was whisked off by the pediatric nurse and we moved on to the next surgery in the neighboring, posher, and newer private operating theater. The second baby was extracted. We moved back into the first, which had been cleaned up and where patient number three lay waiting. Everything stood out starkly with the other room: the electrosurgical scalpel was Cellotaped together, although it might now be considered a piece of 1950s design, the operating table was rusty at the edges, and so on. The surgical protocol swung into action, but this time things didn’t go smoothly. The baby was fine but the patient stirred, and Mineiro kept having to leave his law books to increase the dose of anesthetic. Tension rose. He and Ricardo exchanged stern words: “you deal with your bit and leave the head to me [*deixa a cabeça comigo*],” Mineiro retorted. Joking ceased. There was profuse bleeding and Ricardo and the nurse worked, silent, highly focused, their shoes splattered with birth blood. Time dragged on, but the situation had come under control by the time the director popped his head through the door and asked what on earth was going on. Ricardo turned away from the operating table, exposing a long flow of

blood that had stained his overalls from the crotch down. Catching sight of this, Mineiro burst out laughing and pointing to the blood exclaimed: “The patient started to whine and moan and Ricardinho got so emotional that he menstruated [*fico menstruado*]!”

Roughly 75 percent of Soteropolitanos rely on the SUS (the national health service), which operates according to the principles of universality of services, equality of all citizens, and integration of health actions. Founded in 1988, the SUS still faces major challenges and is marked by lack of resources, leading those who can afford it to take out a *plano de saúde* (medical insurance). Twenty-five percent of the population has private health insurance, which gives them access to a range of services, including highly sophisticated, top-of-the-range medical services. Doctors, clinics, hospitals, and clinical laboratories have *convênios* (agreements) with different *planos*. These vary widely in the services they cover, the clinics they give access to, and so on, compounding the stratification between “private” and “public” health even further.¹⁵ At one extreme, state-funded services vary (some are indeed excellent), but are generally characterized by lack of resources and long queues. In a context of stretched resources and overwhelming demand, the question of *atendimento* (medical attention) is intrinsically tied up with discussions concerning *cidadania* (citizenship) in a context where the right to health is still very much in the making (Biehl and Petryna 2013). Medical practices and pharmaceutical drugs are used to fulfill societal expectations of work, appropriate fertility, and beauty, and to signal new social relations. Given that the range of possibilities extends unevenly from very little access to health care to high-tech, specialist-led medical intervention, with little in between, both possibilities become charged with particular values. I became interested in how people in Salvador adopt medical technologies, in a context marked, on the one hand, by the problem of over-medication and a predilection for surgical operations, and by an absence of quality primary care on the other. Medicine is a highly significant social institution in the making of urban Brazilian identities in a context where the highly differentiated class structure is reflected in access to health care (Barbosa et al. 2002; Biehl 2004, 2005; Corrêa 2001; Edmonds 2007, 2010; McCallum 2005a; Scheper-Hughes 1992). McCallum (2005a) suggests that health insurance itself functions as a marker of class distinction.

The protests that took place across Brazil in June 2013 exposed massive popular unrest over the limits of public services such as health care. The economic boom of the 1990s and 2000s, which gave Brazil a new standing

as no longer the “country of the future”—as Brazilians commonly say—but an “emergent nation” and key player on the international scene (Pinheiro-Machado and Dent 2013), left many behind as deep inequalities persisted. Aquino (2014) argues that the protests exposed the fact that the SUS is unable to ensure quality services to all, noting that the 25 percent of Brazilians who have private health insurance benefit from tax waivers, which effectively finances with public money the access to private care for this privileged minority. At stake here are contrasting visions of public health in a context where the health system’s shortcomings are often glossed over as technical problems or problems of resources, when they are also—and at times primarily—political (Aquino 2014). Many Brazilian feminist scholars of health note the current de-politicization of health issues in relation to the radicalness and comprehensiveness with which public health was rethought in the post-military transition of the 1980s (Aquino 2014; Costa 2009; Diniz 2012). Diniz (2012, 126) notes that the inclusion of the social and political aspects of health in the Women’s Comprehensive Health Care Program (PAISM), launched in 1983, “lost ground to the discourse of access to medical consumption.” Likewise, Aquino (2014) and Diniz (2012) note policy back-peddling over the achievements that were conquered under PAISM, most notably from religious and conservative lobbies.¹⁶

The period 1945–1980 saw massive changes in urban Brazilian class structures following rapid industrialization. Gender, work relations, and attitudes to leisure, the body, and health shifted dramatically as women entered paid employment. In their history of urban class formation, Mello and Novais (1998) explain that industrialization enabled the ascension into the middle classes of a new class of unskilled workers such as sales assistants or low-paid office clerks. Given the legacy of slavery and the perpetuation of a “culture of servitude,” physical labor lies at the bottom of the hierarchy of employment and is stigmatized among the middle classes. Work is evaluated according to the degree of (dis)pleasure it affords, and distinctions are made between work that is clean or dirty, light or heavy, routine or creative, subaltern or managerial, and the years of formal education required to enter into a profession. Upward stratification produced a new class of managers, the rise of a service industry (publicity agencies, market research companies, etc.), and with it a new professional elite who joined the traditional elite (comprising doctors, lawyers, landowners, and businessmen). The “stressed out bodies and tormented minds” of this new class of professionals were—as Mello and Novais (1998, 629) impart, not

without irony—in turn attended to by a growing body of psychoanalysts, astrologists, cardiologists, plastic surgeons, entertainment promoters, gym owners, divorce lawyers, massage therapists, interior decorators, endocrinologists, dermatologists, and others. The success of these specialties in Brazil is accounted for by reference to a process of “moralization,” which challenges the authority of the church, upholding in its place ideals of *aperfeiçoamento* (self-improvement) through work, spiritual development, and hygiene. This link between work, hygiene, and class is central to contemporary Brazilian class relations. A brief overview of the historical formation of these ideas reveals how the hygienist movement produced the body as a site of intervention. In the early twentieth century concerns with hygiene and propriety came to occupy a central role in processes of social differentiation and class. Physical and moral education were seen as necessary to the project of producing healthy bodies, contained, polite individuals, demarcating the *culto* (cultivated) from the *inculto* (ignorant). The Brazilian historian Jurandir Freire Costa (2004) argued that this produced *higiene* as “emblematic of social differentiation,” a mark of class that distinguishes *senhores* (gentry) from their subalterns. This movement of hygienic control transformed the “colonial family” by supplanting religious and patriarchal codes of conduct with an infinitely variable hygienic—and, increasingly, an esthetic—one (see Edmonds 2013). Some of the women I interviewed achieved what one might refer to as “middle-class status” through work or marriage, and their reproductive trajectories and bodily projects are marked by this class transition.¹⁷

The minute details of physical appearance are carefully monitored and Soteropolitanos are able to deduce a great deal about a person’s social status by analyzing their appearance, the neatness, style, and quality of their clothes and shoes, as well as their gait and demeanor. Access to employment is contingent on *boa aparência* (good appearance), a criterion that blends beauty, presentation, locution, and *jeito* (manner/bodily expression). Although the economic means of achieving *boa aparência* are unevenly distributed, beauty and bodily care are important means of social ascent, rendering bodies sites where social hierarchies are renegotiated. The *interior* (rural zones) remains an important category of alterity in Brazil and often serves as a narrative foil to explain the substantial changes that have taken place in urban Brazilian society. Crucial to this process of differentiation is the concept of modernity, as implicit in the idea that people from the interior are *atrasados* (behind), or still hold to backward or ignorant traditional

beliefs. On one occasion, my partner, young daughter, and I returned to Salvador after a weekend break. We opted to travel by the *barco de nativos* (literally, “the native’s boat”) rather than the speedboat most middle-class beachgoers use. At 5 a.m., an old tractor wove its way along the single village road, picking up passengers. Sleeping children were gently passed into the tightly packed rows of passengers on the hard wooden bench, along with luggage, sacks of produce, and baskets enclosing chickens. At around 6 a.m. we arrived at a small river port and embarked upon a two-hour journey to Valença, a small town a few hours’ bus journey from Salvador. We boarded silently and took advantage of the boat’s rocking motion to gain a little more rest. Then suddenly, obeying a signal unbeknownst to us, the boat awoke to a kind of organized agitation. Hair nets were removed and locks delicately unraveled, children’s hair was vehemently combed into order, elaborate makeup was applied, layers of warm clothing to ward off the dawn cool were stripped off, revealing carefully chosen color-coordinated outfits, plastic imitation *havaianas* were swapped for pristine trainers or high-heeled shoes conjured out of bags. As the boat strenuously tugged along the last curve into Valença’s port, we observed the astonishing transformation that had taken place among our fellow passengers. While we had initially stood out as a family when we boarded the tractor, we now felt underdressed and disheveled as we entered town. This anecdote brought home to us the considerable importance given to appearance and the intense issues at stake in how one presents as one moves from the interior to the *cidade* (city).

Race is rarely the explicit language people adopt to speak about the “social differences” at work in relations to medical institutions and bodily transformation projects in Bahia.¹⁸ I carried out this research over the course of Luiz Inácio Lula da Silva’s two presidential mandates, when large-scale social programs targeting poverty were radically reconfiguring class relations.¹⁹ In the course of my discussions concerning contraceptive options, the salient issues that arose concerned shifting demands on public services, often couched in terms of debates about citizenship and responsibilities and framed within an aspirational politics driven by a desire to consume elite services and goods. In her discussion of race and class in Salvador, McCallum (2005b) takes issue with the emphasis on community-based ethnography in Brazilian anthropology, pointing to the difficulties arising from studying class without founding the discussion on direct observation of cross-class interactions. While she is careful to note that in Salvador, the body itself is not the sole or determining basis upon which racial categorizations are made

(these also include dress, behavior, locality, and so on), she concedes that bodily differences become imbued with particular—racialized—meanings. But this body is neither finished nor closed and is always the site of production and transformation: “changing its form and meaning, whether through spiritual or magical technological intervention, through diet and exercise, or by medical means” (111). McCallum concludes that although the racialization of bodies is fixed through the repeated re-inscription in spaces and interactions that naturalize class differences, these are contested, wittingly and unwittingly, by changes in the repeated patterns of movements and subjectivity formations, which (re)structures these social hierarchies (113). What I wish to highlight is, notwithstanding the staggering inequities that prevail, the relative malleability and plasticity of identities and the role of bodily transformation therein.

During one of the births that I attended, a fleeting example of the ensuing negotiation between class, race, age, and status caught my attention. The birthing mother was a twenty-three-year-old black woman who worked for a telemarketing company that provided its 90 percent female workforce with medical insurance. Throughout the birth, she resisted the expedient manner with which the medical team sought to see her through her labor, different, I noted, from the way the same team treated women on different health plans. The obstetrical nurse, a stern woman in her early fifties, was highly unsympathetic to the extreme discomfort the birthing mother was in and coldly requested her to turn on her side in order to apply the epidural. The young mother requested assistance, which was met with dry responses of the kind, “If you don’t help me I cannot apply the anesthetic to help you.” Shifting to her side with great difficulty, in tears, she implored, “O moça, me ajude!” (Oh “girl,” please help me!) The nurse flinched, clearly offended by the subtle role reversal this request implied. Within the hierarchies of status in Salvador, it is very common for a young—usually white—person to address an older but socially inferior—usually black—person (e.g., a waiter, shop attendant, cleaner, or taxi driver) by the term *moço* or *moça*, which literally means “boy” or “girl.” By calling the older, white, and professionally senior nurse *moça*, this patient was renegotiating the terms of her relationship with the nurse in a manner that implied she was there to serve or assist her. This example illustrates the manner in which class, race, age, status, and the hierarchies they produce are deeply enmeshed and subject to subtle dynamics in the context of shifting social relations.

Weismantel and Eisenman (1998) demonstrate the ways in which race in

the Ecuadorian Andes is experienced as both somatic but not biological in origin. Race can be changed over time and yet is embodied. It is “neither genetic nor symbolic, but organic: a constant, physical process of interaction between living things” (Weismantel 2001, 266).²⁰ Race, Weismantel and Eisenman (1998) argue, accumulates in bodies, in its orifices, organs, impulses, or gait, acquired slowly over a lifetime. The authors note that both the defenders of a biological basis of race and their social-constructivist opponents curiously do not engage with the physicality of bodies, either through a form of antimaterialism that views race as socially constructed, or—where biological racism is concerned—by taking race as genetically determined and “disdaining the natural history of the body after conception” (134). Against such problematic distinctions, they present Andean notions of race as transformative and malleable, arguing that “it is possible to become what one was not at birth” (135) by slowly building a different body.

Historian of science López Beltrán (2007) shows the important role that humoral, Hippocratic ideas about blood played in colonial Latin American racial categories. Blood, in this period, did not lend itself to the kind of biological determinism it would acquire later through the eighteenth and nineteenth centuries. Instead, the humoral notions of blood that prevailed in the colonial and early postcolonial periods could be “diluted, equilibrated, or modified by adequate sets of circumstances. There is no hereditary fatalism in this early period” (272). In sum, social work—such as dress, demeanor, or education—was, and to some extent continues to be, read as having somatic effects. This Hippocratic body is somewhat plastic to its environment. While some features are more tenaciously engrained in the soma, others are open to change—a change that could be transmitted. These historical and Andean foils illustrate the importance that transformations of bodily appearance and countenance can have in subtly reworking social hierarchies. Brazilian anthropologist Mirian Goldenberg (2002, 9) argues that the body has become a kind of capital, and that a well-presented body is seen as a token of one’s personal success. Brazilian esthetic practices become a means of social mobility. Likewise, Edmonds (2007, 2010) argues that the beautified body is intimately tied up to and reflects the ambiguous emancipatory power of capital itself in that beauty challenges traditional hierarchies: “Beauty . . . is an unfair hierarchy, but one which can disturb other unfair hierarchies” (2007, 377). As DaMatta (1987) has argued, the passage from *casa* (house)—hierarchical domain of affect and “personalism”—to *rua* (street), the domain of impersonal relations between individuals, is ritu-

ally marked by the preparation of the body, its dress and presentation, such that personalistic *casa* hierarchies are maintained in the *rua*. Increasingly, as Malysse (2002) and Edmonds (2007, 2010) show, bodywork has become a privileged site through which status is renegotiated. Malysse extends the Bourdieusian notion of distinction to the body itself: “the ‘natural’ body has become synonymous to the poor, or popular body. . . . Thus, many dream of changing their bodies in order to change classes” (102–3, my translation). What is valued is the energy that each “individual” deploys to (re)construct her identity and to bring her body under control. “Attractiveness has a social effect that seems to short-circuit other networks of power,” Edmonds (2010, 17) argues in his analysis of the disproportionate appeal of plastic surgery in Brazil. The growing access to medical services and the relative democratization of health have played an important role in these shifting social hierarchies.

Plasticity and the Borderlands of the Body

Brazilian feminists have been vocal in denouncing the disproportionate encroachment of medicine on all aspects of women’s lives and bodies. In a booklet published by the feminist organization *Sempreviva*, the risks of the imposition of “excessive medicalization and abusive technological intervention on women’s bodies” (Faria and Silveira 2000, ii) are highlighted. The authors denounce the normative version of femininity harbored through what they see as medicine’s emphasis on youth, beauty, and well-being, arguing this is essentially market-driven rather than aimed at gynecological concerns of greater epidemiological importance to women (such as abortion or access to primary care). Similarly, in a critical essay on “medical intervention” and women’s bodies, Rotania (2000), the director of *Ser Mulher*, an important Brazilian women’s nongovernmental organization, denounces *interventionism*. Rotania deconstructs the discursive logic of the technological cycle within which Brazilian reproductive medicine is embroiled. Her conclusion is that the body has lost its ontological integrity in the face of the ever deeper incursion of medical technologies. This leads her to ask: “If one of the constitutive principles of the concept of reproductive rights is bodily integrity, what kind of rereading is necessary?” (23). Brazilian anthropologist Teresa Caldeira (2000) proposes that in Brazil, the body is “unbounded.” She shows how interventions on bodies are perceived as both natural and desirable. The notion of an unbounded body is developed first and foremost

to evoke the ways the urban middle classes speak of the bodies of prisoners and criminals. However, in the conclusion to *City of Walls*, she proposes that to understand Brazilian forms of democracy, citizenship, and power it is essential to turn to the micropolitical interactions surrounding bodies. The two specific examples that she proposes will yield further understanding of the problem of violence in Brazil are the domains of “open sensuality” (such as carnival) and the practices of reproductive health, centering on women’s bodies. My work begins where hers concludes, as it were. Echoing Rotania’s concerns, Caldeira asks whether the respect for individuality and human rights can be imagined for Brazil, where “the body is not respected in its individual enclosure and privacy.” For Caldeira, civil rights “depend on the bounding of the body and the individual, and on the recognition of their integrity” (372). What is needed, I propose, is a critical engagement with the notion of the bounded body, which remains the problematic basis upon which Caldeira and others concerned with the violence that characterizes Brazilian social life pin their hopes. While Caldeira’s argument is very important, her notion of the “unbounded” body rests on the prior assumption of a bounded body. What is perhaps most problematic about such notions of boundedness is the implicit naturalness upon which they often rest. It is not the unnaturalness of biomedical interventions that should absorb our critical efforts, as so often they do, but their politics.

Plastic Bodies therefore critically engages with notions of bodily integrity and proposes a frame with which to trace how people oscillate between imagining the body as bounded while simultaneously recognizing its malleability. Both positions rest on each other, for conceiving of unboundedness rests on the prior bounding of the body and vice versa. By intervening one is restoring the body to its original state, but this original state is achieved only through intervention. Menstrual suppression is based on a paradoxical proposition: The practice aims to stabilize bodies while inherently assuming their malleability. Menstruation is constructed as a form of bodily instability and hormones as key agents in restoring balance and control. Building on this case, I propose that the stability of the body cannot be assumed here and that constant effort is required to hold it together in the form widely recognized as “the” body. Women who practice menstrual suppression, and doctors who recommend it, deploy various explanatory strategies to rationalize this intervention, drawing on the now familiar and recurrent repertoire of technologizing nature and naturalizing technology (Strathern 1992b). The manner in which bodies are rendered intervenable in

Bahia—their specific local malleability and plasticity—at times resonates with the biomedical version of the body as given and coherent, while continually challenging and re-mapping its limits. Within anthropological approaches, the modern Western body often served as an implicit foil through which local bodily ontologies were revealed. While attesting to the many possible forms of embodiment, both historically and cross-culturally, such approaches at times reinforced the self-evident character the bounded, unitary, Western body was seen to have, or to overly state the fluidity of “exotic” bodily ontologies. As medical anthropologists turned their gaze inward and took up the challenges laid out by science and technology studies to consider scientific and biomedical ontologies as constructed through practices, biology ceased to be perceived as a universal yardstick (Franklin and Lock 2003; Franklin and Ragoné 1998; Haraway 1989, 1991, 1997; Lock 1993; Martin 1994, 2001; Mol 2002; Rapp 2000; Strathern 1992b).

In this book my aim is not to argue that Bahian bodies are plastic while Euro-American ones are stable and fixed. I do not attribute a particular kind of bodily ontology to Bahians as counter-distinct from a purportedly “Western” one.²¹ Nor do I map differences between bodily ontologies onto differences within Brazil (whether differences of class or ethnicity).²² Rather, I propose that within the field of hormonal practices described here, one finds both positions simultaneously. Ontologies, Mol (2002) taught us, can be multiple without being exclusive, that is, without relativizing the things to which they refer. Viveiros de Castro and Goldman (2012) argue that confusing multiplicity with relativism is one of anthropology’s bad habits. It stems from an understanding of the multiple as that which is opposed to the one. Yet this relation need not be binary, as Haraway (2004, 35) taught us: “One is too few, but two are too many.” *Plastic Bodies* attends in an ethnographically engaged manner to the minutia of how bodies (not “the” body) are remade. I read bodies, in their multiple local instantiations, as ongoing and collective materializations.²³ This book examines how sex hormones are enrolled to modulate, transform, and manage women’s bodies. I analyze the ways in which sex hormones are consumed—as in literally absorbed, or swallowed—from the perspective of the bodies that absorb them and are modified through them. I take inspiration from Lock and Farquhar’s (2007, 1–16) call for a renewed analysis of embodiment in anthropology that addresses the “materialism of lived bodies” and takes us beyond the study of the “body proper.” The ethnographic materials presented reveal the way biomedical and social practices surrounding women’s leaky and volatile (Grosz

1994) bodies produce bodies as “boundary projects” (Haraway 1991, 200). Considering such “boundary projects” from the perspective of what it means to hold the body stable and to enact its multiplicity as unitary (Mol 2002) or from the perspective of how *removing* things from bodies produces bodies as bounded entities (Kristeva 1982; Weiner 1995), the book gives an ethnographic account of how bodies are (re)made. To do this, I draw on Ingold’s (2007, 2010) attempt to rethink phenomenology. Bodies breathe, grow, decay, and their existence depends on their ability to incorporate their environments through the acquisition of skills or nourishment that travel across their ever-emergent surfaces. My aim in engaging with the literatures on bodies and materialities is to think about the relationalities between things that are not clearly or neatly pre-bounded (bodies, on one side, and “things” like pharmaceutical hormones, on the other). The problem I want to address is that of “absorption” in its literal sense of how something material that is not the body becomes the body, acting through it. I highlight the contingent and fragile nature of these objects that are still often taken for bounded in anthropological theory. The book critically engages with the anthropological literature on pharmaceuticals (Petryna, Lakoff, and Kleinman 2006; Whyte, van der Geest, and Hardon 2002) from the perspective of its tendency to take the object for granted, and to not attend to the absorption, dissolution, or enmeshment of the thing into the bodies in which they become efficacious. It shifts the focus from the finished pharmaceutical object to the chemical materials that constitute it, unpacking some of the work that goes into making the bounded object look so solid. As Nading (2014) has argued, chemicals are “ontological engines”: tools that humans use to remake life forms, by killing or dulling reproductive capacities, or realign human-microbial assemblages. But they are also “theory machines” that help us rethink the relations between what Idhe (2000) called embodied being and enviroing worlds.

In this book, I draw on the notion of plasticity, which refers to the capacity to both receive and give form. The definition of *plastic* points simultaneously to the malleability of matter (its capacity to receive form) and to its resistance (the constraints afforded by its existing form). Further, the term *plasticity* holds the potential of troubling any natural referent that might still be associated with the notion of “the body.” French philosopher Catherine Malabou has argued for the importance of marking a radical distinction between flexibility on the one hand and plasticity on the other. Flexibility, she argues, implies infinite extendability and polymorphism, and as such it is

only one aspect of plasticity (Malabou 2011; Butler and Malabou 2010). To be flexible is to receive form and to yield to constraint in a docile manner. The concept of flexibility lacks the creative potential of giving form: “Flexibility is plasticity minus its genius” (Malabou 2011, 57, my translation). Malabou pins considerable political hopes on the notion of plasticity, thus distinguished from flexibility, which she, as others before her (most notably Martin 1994), suggests has been colonized by neoliberalism. She proposes that plasticity is flexibility’s “consciousness to come” (Malabou 2011, 56). Plasticity, thus defined, is open-ended; it has the aptitude to transform destiny, to inflect its form and not just constitute it (65). The polysemous dimensions of the term plasticity give it the capacity to bring together two otherwise polarized meanings: that of necessity or determination of form and that of liberty or capacity to become otherwise. The tension between them is what constitutes the force of this concept. My aim is to weave together several aspects of bodily plasticity. First, I attend to the ways bodies are experienced as in flux through an in-depth analysis of how the menstrual cycle is lived as a form of corporeal instability or intrinsic plasticity. Here I draw on Martin’s (2001) seminal work on the intersections between women’s experiences and medical constructions of the cyclical female body, examining the specific permutations these intersections take on in the Bahian context. Second, I explore the hormonal interventions that are carried out on bodies to modulate and transform them. Engaging with the expansive literature on bodily projects in Latin America, I argue that the recognition and appropriation of bodily plasticity is an integral aspect to the myriad forms through which social hierarchies of race, class, or gender are renegotiated there. I situate hormone use within the frame of other biomedical interventions such as the high rates of cesarean deliveries (McCallum 2005a; Padua et al. 2010; Victora et al. 2011); plastic surgery (Edmonds 2010; Edmonds and Sanabria 2014; Taussig 2012); hysterectomy (Araújo and Aquino 2003); or bariatric surgery.²⁴ This enables me to provide an account of the significant role ideas about bodies and their transformation play in accounting for the extensive biomedicalization of Brazilian social life.

NOTES

Introduction: Plastic Bodies

1. See Natansohn (2005) for a detailed analysis of the women's programs on which Coutinho appeared as a gynecologist and on their portrayal of gender relations and women's bodies.

2. The Oxford University Press English edition's title is more subdued than the Portuguese original, which would translate as "Menstruation: Useless Bleeding."

3. Ninety percent of the press articles presenting menstrual suppression (from *Cosmopolitan* to *Time* or the *Washington Post*) present the arguments put forward by Coutinho and Segal in *Is Menstruation Obsolete?* (Johnston-Robledo, Barnack, and Wares 2006). Advocates of menstrual suppression are quoted twice as often as opponents, thus biasing coverage and massively downplaying potential risks or uncertainties that prevail around the practice.

4. For a detailed review of the new hormonal contraceptives currently being developed, see Bahamondes and Bahamondes (2014).

5. These rates are highly variable internationally, as a Population Reference Bureau (Clifton, Kaneda, and Ashford 2008) analysis reveals. Worldwide, only 8 percent of married women use the pill, although this represents more than 3.5 billion people. The rate is 18 percent for "more developed" nations and reaches 45 percent in France, which has one of the highest national rates. Four percent of the world's married women use hormonal injections, with particularly high rates in South Africa (28 percent) and Malawi (30 percent).

6. It found its rationale in the limited uptake of the pill worldwide, a fact that was accounted for by reference to the heterogeneity of women's personal, cultural, and religious circumstances.

7. Online source; no page numbers.

8. The literature on the safety of extended-regime oral contraceptives and long-acting hormonal methods principally comprises epidemiological studies that tend to downplay risks (e.g., Edelman et al. 2014; Isley and Kaunitz 2011) and feminist analyses that alert to the fact that these drugs are often used without adequate evaluations of their potential health risks (e.g., Corrêa 1998; Mintzes, Hardon, and Hanhart 1993).

9. The classification of combined oral contraceptives relies on the progestins used. The first and second generation include norethisterone and levonorgestrel; the third and fourth include gestodene (e.g., Arianna, Careza, Meliane) and drospirenone (e.g., Yasmin, Yasminelle 28, Yaz, Aliane).

10. Some articles relativize such increased risks, noting that “the additional risk of thrombosis with a 3rd vs. 2nd generation pill would be . . . —at worst—one more death in a million users” (DeLoughery 2011). Likewise, Spitzer (1997) concluded that the relative risk of thrombosis is real but “clinically unimportant and of no public health significance.” Such minor risks can become potentially massive public crises, however, as we saw in the UK pill crisis of 1995 and more recently in France. Mylène Rouzaud-Cornabas is currently completing a project on the anatomy of this recent crisis, and I thank her for her input here. Controversy over the potential cancer-preventing or cancer-inducing effects of these drugs also marked the fields of contraceptive and hormone replacement therapy. A recent review suggested that none of the large, prospective cohort studies have observed an increased overall risk of cancer incidence among ever-users of oral contraceptives; indeed, several have suggested important long-term benefits, such as reduced endometrial cancer risk of 50 percent among ever-users (Cibula et al. 2010). This review was followed by a letter to the editor alerting to the skewness of the data presented, to which the authors declined to respond. There is remarkably little in the literature on how the debate is structured by possible conflicts of interest or how ignorance and absences in the existent knowledge on potential risks are actively produced (McGoey 2012; Proctor and Schiebinger 2008), with the notable exception of Löwy's (2012, 2013) work. The Committee on Women, Population, and the Environment released a Depo-Provera Fact Sheet in 2007 in which they ascertain that in papers filed with the U.S. Securities and Exchange Commission, Upjohn admitted that, in order to secure sales of Depo-Provera abroad, it made payments of more than \$4 million to employees of foreign governments from 1971 to 1975. <http://cwpe.org/node/185>, accessed January 23, 2015.

11. In a heavily biased article, Isley and Kaunitz (2011) argue that the advantages of Depo-Provera far outweigh what they refer to as “theoretical” health concerns with bone mineral density and conclude that these should not “restrict initiation or continuation.”

12. All of which were performed in less time than a single tubal ligation, under local anesthetic, while doctor and patient exchanged jokes.

13. Christianity plays a central role in the way Bahians think about reproduction, and the body more generally. I have often been questioned about how the things I describe coexist with what is rightly seen as a heavily religious context. However, such questions are based on a more or less explicit assumption of the incoherence between Christian belief on the one hand and contraceptive practice on the other, which is seldom experienced as contradiction or incoherence by the women I met.

14. The private or “supplementary” sector is defined as that which is not financed through the Ministry of Health. In practice, however, supplementary medicine often receives state funding. It is heterogeneous and funded through a range of different organizations, which include health insurance (provided by general or specialized insurance companies) and a plethora of medical groups and cooperatives that often have their own structures (hospitals, practices, etc.) or contract services through an elaborate system of conventions. Patients contract medical insurance either through their employer or privately. According to the 1990 IBGE census, of the 362 medical establishments in Salvador, 246 were private (cited in da Silva et al. 1997). Of these 246 institutions, 86 percent of these were for profit and 12 percent philanthropic, and only 51 percent of these institutions were completely independent of public funding. These are for the majority small units, consisting of four or fewer *consultórios*, and the most frequently offered specialties were gynecology (46 percent) and pediatrics (40 percent) (da Silva et al. 1997).

15. Private insurance varies widely in price, with the lowest entry plans at under US\$50 and high-end plans exceeding US\$400/month (where the minimum monthly wage is US\$292). According to widely circulated figures, a doctor receives less than US\$4 per consultation in the SUS, and according to several doctors I spoke with, a private consultation earns them on average US\$10 (although the consultation can cost as much as US\$200). In recent years, Salvador has seen an increase in “popular clinics,” which are not linked to the SUS or to the system *planos*, and offer consultations and diagnostic services at a reduced cost. These tend to be located in popular neighborhoods on the periphery or in the old center. Gynecological consultation and Pap tests figure highly among the services sought from these clinics, where patients are more rapidly served than in the SUS, and prices are cheaper than in private clinics, as money is transferred directly between doctor and patient, rather than through the system of *planos*. As intermediaries between state and private health institutions, these institutions increase the complexity of the health provision landscape in a context where the consumption of health services and adherence to a *plano* are constantly renegotiated as a function of needs, priorities, and changing circumstances.

16. These effectively returned women’s health to a focus on the mother–child dyad, which focuses on women exclusively as mothers and which Diniz characterizes as a “sexist and authoritarian system of medical practice”—at the expense of a genuine sexual and reproductive health policy. Part of the problem is that the health professionals in the SUS are mistrained and unprepared for primary care (Aquino 2014), and that the training of midwives to take increased responsibility for women’s health continues to be strongly opposed by the medical establishment (Diniz 2012). Despite huge

improvements in access to health care, women's health indicators (such as severe maternal morbidity, which is four times higher than in developed countries) are "embarrassing for Brazil," threatening the notion that "the more intervention the better" (Diniz 2012, 127).

17. In 2000, over 60 percent of the population had completed only primary education and only 8 percent entered into some kind of higher-education degree program requiring the completion of secondary education (Figoli 2006). Given these stark differences, education levels give a fairly good idea of social differences. Mello and Novais (1998) state that the number of employees with a *carteira assinada* (formal contract) grew eightfold, from 3 million in 1960 to 23.8 million in 1980. In the period 1970–1980, female employment in Brazil grew by 92 percent.

18. There is a long debate within Brazilian social theory concerning the relative importance of class and race in the making of social hierarchies. Winant (1992, 177) argues that race was often reduced to class, leading racial phenomena to go unrecognized. This argument is made in favor of a more adversarial racial politics that names racism clearly. However, Sansone (2003) and Fry (2000) have argued that this is a form of Eurocentrism that maps an essentially North American vision of race onto the Brazilian context, without considering the numerous intermediary racial categorizations that prevail in Brazil, or their highly relational and subjective character. In naming the social hierarchies I encountered during fieldwork "class" rather than "race" I am not claiming that a transition from race to class has occurred and that race is not a relevant category. Far from it. I attend to these social hierarchies through idioms of class rather than idioms of race because these were the primary terms in which these differences were relayed to me.

19. The Brazilian government prides itself in having brought 35 million people into the middle class in 10 years of Workers Party policies. As many of my friends note, however, this principally involved changing the criteria for what counts as middle class. In 2013, the SAE (Secretary for Strategic Issues) defined the middle class as families living with between US\$107 and US\$376 (<http://www.sae.gov.br/site/?p=17351>, accessed February 2, 2015). This means that people earning less than minimum wage (set at US\$290/month on January 1, 2015) are considered middle class. The minimum monthly salary is established by the Brazilian Constitution as the minimum wage required to meet basic costs of living such as food, housing, health, education, transport, and leisure. According to Cruz (2014), the Department of Statistics and Socioeconomic Studies (DIEESE) estimated that given the average cost of the *cesta básica* (or minimum monthly food ration, currently estimated as retailing at roughly US\$100) and the cost of housing, the minimum salary should be just over US\$1000 (that is, roughly four times higher than it is at present).

20. Likewise, in her ethnography of in vitro fertilization (IVF) in Ecuador, Roberts (2012) reveals the simultaneous malleability and materiality of local conceptions of race, showing how they become embroiled through IVF to older forms of the biopolitical project of whitening.

21. Historians have shown how delimiting the body was integral to the constitution

of modern subjects in Western societies (Bakhtin 1984; Elias 1994; Foucault 2003; Vigarrello 2004). For example, Duden (1991, 17) argued that changing the habits of peasants and women, and their accompanying ideas of purging and bleeding to restore health, involved, for the philanthropic reformers of the eighteenth century, the creation of a new “body” that should not “dissipate itself.” Attempting to recapture the experiential body of eighteenth-century women, Duden shows that: “In this cosmos the skin does not close off the body, the inside, against the outside world. In like manner the body itself is also never closed off” (11–12).

22. Differences within what might be glossed as Brazilian bodily ontologies are as significant as those between Brazil and wherever else one might be writing from. Although also located in Brazil, my fieldsite is as far removed from the perspectival worlds described by Amazonian anthropologists (for example, Lagrou 2007; Lima 2005; McCallum 2014; Vilaça 2005; Viveiros de Castro 2012, 2014) as is “Euro-America.” In fact, for many people I encountered, the stakes of maintaining this distinction are higher than they are in Europe because in Brazil being identified as indigenous remains stigmatizing.

23. This is to say that there is no pure (or presocial) nature out there that cultures can more or less accurately represent to themselves. Natural facts concerning bodies are contingent on the sociomaterial practices that make them knowable. As such, multiple bodily ontologies coexist in all social settings, and my task here is to describe some of the ways in which this coexistence occurs in Bahia.

24. Brazil has the highest number of metabolic/bariatric surgeons in the world (2,750). They performed 65,000 bariatric surgeries in 2011, which is more than twice the rates of France, and over six times the UK rates, coming second to that of the United States and Canada (Buchwald and Oien 2013).

Chapter 1: Managing the Inside, Out

1. It is difficult to correctly evaluate the proportion of couples who use some version of a rhythm method as a contraceptive method. In practice, *fazer tabela* (charting) tends to consist of an intuitive interpretation of more formalized fertility awareness methods, such as those based on temperature charting, and seldom include any actual daily charting. This method is generally based on the recording of days in the cycle and used to estimate the fertile period, during which condoms are adopted.

2. Several women did feel ovulation; however, the existence of specific technologies to chart the menstrual cycle and identify ovulation attests to the fact that this process is less readily “brought to the surface.”

3. The sliding of the uterus from its normal position in the pelvic cavity into the vaginal canal.

4. The class dimension is significant here because there is a certain taboo on speaking about sexuality and menstruation to young women in low-income families. This is the way some public health researchers frame the comparatively high fertility rate among teenage low-income women.