Bioarchaeology and Social Theory
Series Editor: Debra L. Martin

Pamela L. Geller

The Bioarchaeology of Socio-Sexual Lives

Queering Common Sense About Sex, Gender, and Sexuality

Springer

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For Teddy

Foreword

Pamela Geller presents a wide-ranging exploration of the ways that bioarchaeologists, archaeologists, and other scholars can utilize contemporary gender, queer, and feminist theory to reframe research questions in ways that will move our studies of the past in new directions. The body of knowledge produced in the future utilizing the kinds of theoretical orientations and critical thinking offered in this book will transform the subdiscipline of bioarchaeology in important ways. This volume presents a uniquely original and engaging romp through bioarchaeology that closely examines the long held assumptions that are made about not only sex and gender but also race, ethnicity, and status. As many of the case studies reveal, sex and gender are inextricably linked to almost all other domains of existence for humans. Although the scope of this volume is broad, each chapter is anchored in case studies that illuminate the fundamental problems of the narrow and binary thinking that has constrained bioarchaeological interpretations. Yet, the approach offered by Geller is inviting and positive in that many suggestions for future studies are provided. This book will be one of those foundational works that all graduate students read in order to have their mind's blown (in very good ways).

This volume offers a very sophisticated approach to how future scholars can best incorporate feminist and queer theory into their research and teaching. For the uninitiated reader, the early chapters provide background to the terminology, seminal writings, and historical trajectories that will provide a good grounding to anyone not familiar with feminist and queer theory. Expanding upon her earlier work using the concept of the bodyscape, Geller provides more contextualization of the idea and innovative ways to use bodyscapes to expand how past bodies and lives are shaped and what this tells us about culture and power.

Geller approaches ethical and epistemological deliberation as a bioarchaeologist steeped in and committed to feminist and queer studies. Yet, this is not simply a volume deliberating the pros and cons of gender writ large, it is a far ranging volume that draws in and re-envisions modern tropes about everything from racism to the future of genetic testing. While many others, particularly authors who have published in this series, are critical of the ways that bioarchaeologists objectify and

essentialize the skeletons and mummies under their gaze, this volume offers a fresh critique that includes examples not normally drawn upon. From Beethoven's temporal bones and Schubert's hair to the disinterment of Jewish bodies in Nazi Germany, new ways to see how objectification of bodies underwrites and constrains interpretations based on skeletal and mummified remains.

There is a quote from the book that lingers in the mind towards the end of the last chapter that I want to emphasize here. Geller sums up thinking through the ethics of technology and its advances regarding all things related to genes and genetics. It captures her *raison d'etra* for the volume and for her fierce commitment to upending reductionist and assumptive thinking. "In my theoretical alignment, I do not begin from a negative position, born from certain threads of feminism … that technological innovation is harmful to humans in general and women specifically … I would rather be a cyborg than a goddess in our brave new world. For the cyborg's hybridity reminds us of common sense's construction, engenders new ways to exist, and invites political change and social justice." May the perspectives offered by this extraordinary and engaging volume be mulled over and taken up for generations to come and may we all strive towards living the common sense offered in these pages.

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Acknowledgments

> The overall problem is that the author wants the field to something that it isn't [sic]. At this point in the history of bioarchaeology, it has a science-based core and I do not see it making the shift to humanistic bioarchaeology recommended by the author. The current approach taken in bioarchaeology: Hypotheses are tested, and mostly within the framework of biology and evolution. I don't think you will find a single bioarchaeologist who downplays the role of culture and social behavior in what they look at in skeletons and the decisions they make about them. As a bioarchaeologist, I (and most of my colleagues) am committed to the approach taken by science. I have long concluded that the humanistic, postmodern approach will have no clear outcome for this, for anthropology generally…The approach taken in science works well. Put another way, the author is griping about something that is not. The field is what it is, and wishing it was something else isn't going to change it. (Anonymous Reviewer 2006).

I once submitted a manuscript to an eminent anthropology journal that was rejected by the editor. Flat-out. Reviewers' comments supplied numerous explanations as to why they saw the manuscript as unpublishable. My reactions ran the gamut. Some comments were spot-on and taken as constructive criticism. Others, like the above quotation, engendered indignation and impotency. (Truth be told I found the grammatical mistakes as offensive as the content.) This anonymous reviewer went on to remark, "Sex is binary: it is either male or female. Gender is definitely negotiable." That comment has provided strong impetus for much of my subsequent work. So, I would be remiss if I did not acknowledge this anonymous reviewer at the outset. Thank you for making me angry enough about bioarchaeology's status quo to contribute to making the field something other than what it is. My efforts, however, are not entirely reactionary. Nor are they singular. For those bioarchaeologists who have worked to make the subfield a more equitable, intellectually stimulating, and ethical one, and many of you are cited in these pages, I thank you, as well.

In this book, I revisit ideas broached in earlier publications, developing some and discarding others. For instance, I no longer seek to qualify my bioarchaeological work as humanistic or feminist or queer. Rather, Gramsci's discussion of common sense has reinforced that we all must deliberate about what qualifies as such.

But, with that being said, I do not expect the words in this book to be my last ones on sex, gender, and/or sexuality.

Throughout the course of my research, I have had the good fortune to cross paths with a number of excellent scholars and humans. Influential at different stages in my professional development have been Wendy Ashmore and Jane Buikstra. As women and intellectuals, they have inspired and encouraged me to seek the answers to difficult, anthropologically driven questions about the past and the present. I am humbled by their accomplishments, intellectual curiosity, generosity, and collegiality. As a visiting assistant professor at American University, I also had the good fortune to interact with Joan Gero. During my time there, she shared her office, personal library, and thoughts on feminism and archaeology. My ideas about sex, gender, and sexuality are richer for this experience. I would also be remiss if I did not acknowledge Debra Martin; as friend, symposium organizer, colleague, and editor of Springer's *Bioarchaeology and Social Theory* Series, she has been unfailingly supportive of my work.

Many individuals' prompts at professional meetings germinated the ideas in these pages. Their thoughtful comments were essential for fine-tuning and grounding potential ad hominem statements. Chapter 3 was enriched by participants in the 2015 SAA symposium "The Archaeology of Common Sense," which I co-organized with Ann Kakaliouras, and I am indebted to Tom Patterson for introducing me to Gramsci's thoughts on the matter. Chapter 7 is an expanded version of a publication that appears in the volume *Exploring Sex and Gender in Bioarchaeology*, and I thank the editors Sabrina Agarwal and Julie Wesp for their thoughtful comments, as well as those provided by anonymous reviewers. A show of gratitude for valued colleagues who have shared work, offered constructive feedback, and made conferences all the more enjoyable: Sabrina Agarwal, Chelsea Blackmore, Alexis Boutin, Larry Coben, Thomas Dowson, Michael Frachetti, Becky Gowland, Sandra Hollimon, Rosemary Joyce, Shannon Novak, Bob Preucel, and Tim Thompson. I would also like to thank those at Springer whose gentle prompts helped move this book through to publication, as well as the three anonymous reviewers that provided insightful feedback. I reserve a special thank you to Miranda Stockett Suri who has long functioned in the capacity of sounding board, primary reader, co-author, moral supporter, and trusted confidante. Many of these chapters are better as a consequence of the editorial feedback she has provided.

My investigations of Maya burials were facilitated by members of the collaborative Programme for Belize Archaeological Project. I thank its director Fred Valdez, as well as Frank and Julie Saul for their instruction in excavation techniques and skeletal analysis. Follow-up research and writing, the bulk of which is presented in Chap. 6, took place at the Library of Congress's John W. Kluge Center when I was the 2006–2007 Kislak Fellow in American Studies. Research on the Samuel G. Morton Crania Collection, discussed in Chap. 5, was conducted primarily at the University of Pennsylvania and would not have been possible without Stacey Espenlaub, Janet Monge, and Lucy Fowler Williams. I am also thankful to the staff at the various archives where I have conducted research: Academy of

Natural Sciences of Philadelphia; American Philosophical Society; College of Physicians of Philadelphia; Historical Society of Pennsylvania; Library Company of Philadelphia; National Archives in Washington, D.C.; Penn Museum; University of Miami's Special Collections at Richter Library; and Wistar Institute.

At the University of Miami, I have benefited from exchanges with my students and colleagues in the Department of Anthropology. I am especially grateful to Edward LiPuma for his wise counsel, J. Bryan Page for his support at various professional conferences, and Caleb Everett for his levity. I also owe an intellectual debt to all who have participated in the Queer Studies Research Group. This group has truly been interdisciplinary in its composition and conversations. I am very appreciative of Steve Butterman, Brenna Munro, and Gema Pérez-Sánchez who have introduced me to authors and ideas well beyond my anthropological comfort zone. I also want to thank the Center for Humanities, where I was a Faculty Fellow in 2014–2015. Director Mihoko Suzuki headed up an amazing group of scholars (Heather Diack, Laura Giannetti, Sallie Hughes, Mary Lindemann, and Deborah Schwartz-Kates), and their feedback on an earlier draft of Chap. 4 was exceedingly useful. Outside of the university, I acknowledge the members of the Maya Institute of Studies, as well as Jacqueline Fewkes and her excellent undergraduates at Florida Atlantic University for inviting me to present earlier versions of Chap. 6.

I am blessed to have a loving and supportive family. To my parents Barbara and Sidney Geller, I thank them for unconditional love, being strong when I could not, and teaching me how to find the good sense within the common. From an early age, my sister Abbie Polak insisted that I had none of the latter; I take her assessment as a compliment though I am not sure such was her intent. She, Jamie, Lilah, and Jocelyn have supplied much needed comic relief and happy diversions from writing. Finally, this book is dedicated to my daughter Teddy. It is quite certain that I love her more than she will ever know…there are not enough synonyms for gratitude in this respect. My hope is that she will always ask questions born of the innocence and insistence of a five-year-old.

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About the Author

Pamela L. Geller is Assistant Professor at the University of Miami (Coral Gables, FL) where she teaches in the Department of Anthropology and the Program in Women's and Gender Studies. She is also co-convener of the Queer Studies Research Group, an interdisciplinary research group supported by UM's Center for the Humanities. She is strongly committed to a study of the past that is inter- and intradisciplinary. Her research interests include anthropological bioarchaeology and biohistory, feminist and queer studies, the materiality of identity, and the sociopolitics of archaeology. In bringing these areas of interest together, she investigates the role of bodily change in identity formation, focusing on markers resultant from intention (e.g., cranial shaping, violent trauma) or habitual physical activities. She also examines modifications in conjunction with biological data (e.g., age, sex, health) and social information culled from burials, iconography, ethnohistory, and ethnography. Contextualized biocultural data indicate how past peoples literally embodied social identities that were culturally contingent, mutable, and complex.

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Chapter 1
An Introduction

1.1 Inspiration

In February 2007, I met the "Lovers of Valdaro," a well-preserved Neolithic double burial that archaeologists had unearthed in northern Italy. As extra credit that semester in Human Origins, I had given students the opportunity to share relevant current events, and one motivated undergraduate inquired electronically about a *USA Today* news headline, "Archaeologists Find Prehistoric Romeo and Juliet Locked In Eternal Embrace."[1] The photograph that accompanied the news item showed two skeletons facing each other, bodies flexed, arms bent (Fig. 1.1). According to one archaeologist's statement, the world was witness to the enduring embrace of long dead, young, and opposite-sex lovers. Journalists duly noted the approach of Valentine's Day and the site's proximity to Verona, setting of Shakespeare's fictional, star-crossed, and ill-fated couple. The report concluded with another archaeologist suggesting that ancient DNA testing would reveal the true nature of the couple's relationship.

"Yes," I answered after quickly perusing the story. "The discovery certainly sounds pertinent to class discussions about our species' humanness." At the time, it may have seemed overly dramatic—most news stories about archaeological finds are—but nothing struck me as speculative or insidious. Then, the press report about the 5000-year-old "embrace" went viral. This turn of events piqued my interest. Follow-up stories chronicled excavators' removal of the double burial for further study. The Lovers' remained encased within a block of earth to preserve their body position. Though disinterment did not occur, archaeologists' determination of decedents' ages and sexes continued to be made with conviction.

Since the Valdaro discovery, as I discuss more fully in Chap. 4, investigators working in disparate regions and time periods claim that they, too, have uncovered ancient embracers. Few, however, have authored peer-reviewed scholarly publications. Those pieces that have appeared garner limited attention beyond a subset of the academic

[1]See http://usatoday30.usatoday.com/tech/science/discoveries/2007-02-07-neolithic-love_x.htm, accessed 21 December 2015.

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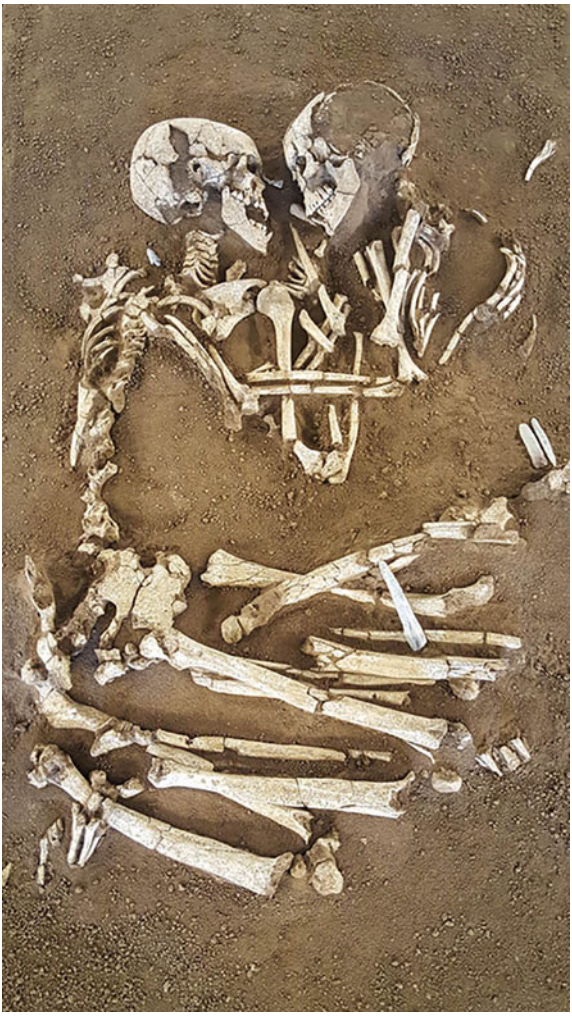

Fig. 1.1 The Lovers of Valdaro. (By Dada629 (Own work) [CC BY-SA 4.0 (http://creativecommons.org/licenses/by-sa/4.0)], via Wikimedia commons)

community. Rather, electronic mediascapes are the primary modes for disseminating information to varied publics. And the commonsensical narrative that circulates rapidly and globally is about heterosexual amorosity as basic to human nature. Both specialists and non-specialists articulate this notion. But, as I have found and explain in this book, the timeworn tale is difficult to substantiate. I argue that it is far more revealing about Western society's modern state of heteronormative affairs and not the socio-sexual identities and interactions of past human groups. In the case of these ancient "embraces," and bioarchaeological remains in general, there is much more to the story.

1.2 Bodies of Evidence

Bodies—fossilized, skeletonized, mummified—capture varied publics' attention like few other types of material remains. Perhaps, this fascination stems from our dis-ease with mortality. To quote Freud (2003 [1919]: 148), "It is true that in textbooks on logic the statement that 'all men must die' passes for an exemplary general proposition, but it is obvious to no one; our unconscious is still as unreceptive as ever to the idea of our own mortality." Of course, Freud's statement is an affirmation of modern Westerners' inability to reconcile their inevitable demises. His assessment may not be applicable to groups that encode human remains with social viability despite biological death. Rather, scientists' unearthing of bodies is folded into a longer history of possession, objectification, and cultural insensitivity that demands accountability and reparations. Suffice to say, reactions to bodies and justification for the things we do to them are tied into claims about decedents' social identities. When bodies' preservation is exceptional—when decedents appear as if sleeping or hugging or violated or dying (rather than dead)—these claims are spoken with greater authority. Though, as we will see, the data to substantiate assertions may be lacking.

In some cases, investigators or museum curators do act to ensure that bodies as buried remain intact. In general, however, scientific studies have historically involved the fragmentation of wholes into parts. With time, these parts have become ever more atomized in their size. From cranium to pelvis to biomolecule, so goes the analytical trajectory starting with physicians and natural historians and formalized by physical anthropologists (see Chap. 2). Given their evolutionary and biomedical approaches—ways of knowing the body catalyzed in the nineteenth century—researchers have tended to examine biophysical data irrespective of cultural milieus and (pre)historical circumstances.

Anthropological bioarchaeologists, without losing sight of attributes that define the human condition, then have reasserted the importance of situating bodies within spaces, places, and times. To this end, they conceptualize a "burial" as an overarching and multi-dimensional unit of analysis inclusive of: bodies (i.e., recoverable human remains); graves, their related deposits, and architectural details; the built or natural spaces proximal to or entombing graves; and associated remains, whether human or nonhuman. Additionally, contextualized understandings have allowed researchers to pose population-based questions, as well as scale down to the individual so as to explore particulars—the biographical, the statistical deviation, the exception—within the patterns. Ethnography, historic documents, artistic or utilitarian renderings, associated mortuary materials, and ecological setting all can extend the inferences that bioarchaeologists draw about past peoples and the cultural systems that structured their lives.

When pertinent and/or available, contextualizing information extends bioarchaeological reconstructions of decedents' biological profiles. Estimations of sex, age, ancestry (or race), stature, trauma, disease, intentional body modifications, habitual activities, etc. follow from osteological analysis. Whether technical assessment

involves visual observation or technoscientific practice, sex has become the fundamental category of analysis. Chapter 2's consideration of race, however, underscores that such a focus has not always prevailed. Given the importance of sex in bioarchaeology, practitioners' lack of critical reflection in stark contrast to the discipline's interrogation of race has struck me as anomalous. There are, of course, notable exceptions, and such work is described in various chapters throughout this book.

In the case of sex, feminist and queer studies have demystified the concept by historicizing it and detailing culturally specific understandings. Here I continue to apply these critical social theories, acknowledging the challenge of making often abstract ideas about the discursive pertinent for those whose primary dataset is matter.

1.3 Sex, Gender, and Sexuality

Initially, feminist studies provided my introduction to queer studies. But, this point of entry is not to suggest that I see the two as indistinguishable. Nor do I characterize my efforts as queer feminism—"the application of queer notions of gender, sex, and sexuality to the subject matter of feminist theory, and the simultaneous application of feminist notions of gender, sex, and sexuality to the subject matter of queer theory," per Mimi Marinucci (2010: 135). I do, however, see the relationship between feminist and queer studies as intimate and historically complicated (like most relationships these days), which I explain further in Chap. 3.

I concur with Benjamin Alberti's (2013: 89) assessment of the feminist and queer corpora, that "what is interesting and useful is the continued movement back and forth on key questions and the productive potential of their interlocutions and the different effects each 'field' can provoke." Most important to me is that both feminist and queer studies, really all critical social theories that connect to larger social movements, are examples of *praxis*. As I see it, praxis is intellectual criticism that undergirds theoretically informed action with the objective of ethical and radical sociopolitical change. In this book, I embrace key concepts developed by feminist and queer scholars to interrogate the production, maintenance, and potential transformation of common sense about sex, gender, and sexuality. The *sex/gender system* is one such concept.

According to its neologist Gayle Rubin, a sex/gender system is "a set of arrangements by which the biological raw material of human sex and procreation is shaped by human, social intervention and satisfied in a conventional manner, no matter how bizarre some of the conventions may be" (1975: 165). Rubin's definition invokes a connection between bodies and sex/gender systems that may be cross-cultural, but acquires nuance—bizarreness when viewed by an outsider—in a given social location and historical moment. Examples detailed throughout this book are illustrative. A connection between sex, gender, and sexuality, however, does not mean conflation. The concepts are distinct ones.

Since the 1970s, feminists have grappled with the significance of gender. Neither natural nor predetermined, these scholars stressed, gender is acquired through a process of socialization (or enculturation). An individual learns, sometimes overtly and at other times more subtly, how to behave, dress, labor, couple, emote, speak, etc. in socially appropriate ways. More recent discussions of gender's performativity, which were initiated in the 1990s and reviewed in Chap. 3, describe these experiences as reiterated and realized through the body. In American culture, for example, gender socialization occurs very early, in utero in fact, and functions to distinguish boys from girls, men from women (Valian 1999). Inquiry about the sex of a pregnant woman's fetus is a common and far from neutral query. The answer sets in motion a host of planning and future promises for an unborn child. Yet, in other cultures, as Chap. 6's Maya case study makes clear, gender is associated with age inasmuch as it can change at different stages of one's lifecycle. Gender can also be self-selected and transgressive. But, as is often the case, when one's self-presentation does not conform to social norms, trouble may ensue; reactions can range from social confusion to outcry to violence. Gender then is reinforced and policed throughout an individual's life course.

Feminist and queer analyses of gender are sophisticated and enlightening. But, as Anne Fausto-Sterling points out, there has been an unwelcome upshot. Scholars have largely neglected sex, which has served to relegate "it to the domain of biology and medicine" (Fausto-Sterling 2005: 1493). Biologically deterministic, dualistic, and reductive understandings of social identities have resulted, and culture's impact on the body has gone underexplored. This book seeks to address these conceptual deficiencies, and in so doing demonstrate just how important it is for feminist and queer scholars to engage with bioarchaeological studies.

Sex, as I see it, does pertain to biological differences between bodies. Of course, just what qualifies as such is neither universal nor unchanging. Instead, it is a matter of culture and history. Determinations may be made from fluids, humors, anatomy, skeletal elements, genitals, hormones, chromosomes, etc. (see Chap. 2). Sex can encapsulate physiological processes—birthing, lactating, aging, dying, and decomposing. In the contemporary Western sex/gender system, for instance, sex is observed presently as a given, stable throughout one's life, and rigidly dimorphic—male or female. The performativity of scientific studies, ever more micro in their analytical focus, works to reinforce the naturalness of sex, and Chap. 7's treatment of geneticization is revealing about this process.

And yet, with critical reflection, we see that these characteristics are undermined by empirical evidence of anatomical differences not reducible to duality, as well as bodies' phenotypic plasticity. Thus, in putting forth the idea that sex is as much a construction as gender, I do not mean to suggest that it is not real or that embodied experiences only occur idiosyncratically. Rather, I do so to highlight the arbitrariness of matter's selection, its enmeshment with cultural forces and sociopolitical circumstances, and the practices involved in making it meaningful.

As for sexuality, feminist and queer scholars effectively debunked the idea that compulsory reproduction and heterosexuality followed from sexually dimorphic anatomy. Of course, sexuality need not only be about procreation. Intimate

couplings can communicate information about aesthetics, desire and abstinence, power and violence, or commerce. Nor do actions necessarily dictate identities. The patterns of sexual acts and attraction exhibited by an individual—their sexual orientation—can solidify into a sexual identity, however. And bodies—their fluids, parts, and permeable boundaries—matter, though the meanings ascribed to the attributes cannot be considered independent of culture (Meskell 1999; Voss 2008).

Sexuality has a historicity as well. "The turn of the century witnessed the development not only of a new explanation of homosexual behavior," as Chauncey (1982: 116) noted, "but also—and more centrally—of the very concept of homosexual desire as a discrete sexual phenomenon." The recent invention of homo- and heterosexuality should not be lost on those who study the more distant past. As many scholars aside from Chauncey have recounted, a dichotomous understanding of sexuality, which came to naturalize heterosexuality and stigmatize homosexuality, commenced in the nineteenth century with medicine's shifting thoughts on family and labor, anatomical difference, and psychological deviance (e.g., Faderman 1978; Foucault 1978; Katz 1995; Somerville 1994; Terry 1995; Weeks 1977). Archaeologists' investigations prior to this period must first determine if notions about sexuality are communicated materially (e.g., figurines, spaces and places, ceramic vessels, iconography, artifacts, artistic renderings), and if so what the intended meaning(s) may have been (Voss 2008). Hence, as is also the case with gender and sex, context is crucial for studying sexuality.

To capture the interrelatedness but not the interchangeability of sex, gender, and sexuality, I use the qualifier *socio-sexual*. The term also makes reference to identities as intersectional—complex, contingent, and cross-cut by multiple variables (i.e., gender, sexuality, age, race/ethnicity, class, etc.). For instance, as I emphasize at various junctures in this book, gender and sexuality have not existed outside of racial discourse. Inimical outcomes are taken up in Chap. 2's discussion of the social hierarchy materialized through scientific study of bodies. Yet, such intersectionality has also served as the basis for internal critique, philosophical inquiry, and political action within feminism and queer studies, as I explain in Chap. 3.

In addition to its historic entanglement with race, the contemporary Western sex/gender system is defined by *heteronormativity*. Bioarchaeologists would be mistaken to dismiss heteronormativity as jargon; that is, as a fancy way of saying heterosexuality. Rather, the concept names the institutionalization of dualistic, deterministic beliefs and practices that are disappeared or deemed common sense. Bodies are rigidly dimorphic. Biology is destiny. Relationships are ideal when contractual, monogamous, long term, and opposite-sex. Labor organization is divisible and universal. Heterosexuality is natural, characterized by penetration, and for procreation. So it goes. There are, however, a host of other concepts that approximate heteronormativity's meaning. Noreen Giffney (2008: 59) explains,

> Whether critics use the terms "heteronormativity", "heteropatriarchy", "compulsory heterosexuality", "the heterosexual matrix", "the straight mind", or "heterosexism" to refer to the effects of an ideological and structural system that regulates the expression and practice of gender and sexuality, they point to the ways in which the binary public/private operates in relation to the privileging and excluding of particular desires, practices, feelings and bodies.

Despite the seemingly incongruent publics that reference the past, heteronormative assumptions about ancient peoples' socio-sexual lives are ubiquitous. Only by acknowledging this naturalization as the production and maintenance of common sense and privilege, as feminist and queer critiques strive to do, may we effect change—in our intellectual understandings about the pasts we reconstruct and political presents we inhabit.

In their analyses of sex/gender systems, many feminist and queer scholars have emphasized *discursive practices*. We may attribute their use of this concept to Michel Foucault (he and the far more hirsute Charles Darwin are the ghosts who haunt these pages). His explanation extends the idea of discourse in important ways.

> A task that consists of not…treating discourses as groups of signs (signifying elements referring to contents of representations) but as practices that systematically form the objects of which they speak. Of course, discourses are composed of signs; but what they do is more than use these signs to designate things. It is this *more* that renders them irreducible to the language (*langue*) and to speech. It is this 'more' that we must reveal and describe. (Foucault 2002 [1972]: 54)

Analysis of discursive practices within specific institutional settings—the mental hospital, medical clinic, scientific laboratory—can reveal the production or formation of social realities, or "objects of knowledge" (Foucault 2002 [1972]: 48). Bodies inhabit all of the institutional spaces Foucault examined. Materiality, however, was less important to him. As a consequence, biophysical data has seldom mattered in feminist and queer scholars' discussions. The oversight is one that scholars of the new materialism seek to address (Chap. 3). Their emphasis on *material-discursive* entanglements engenders a shift in how we think about empirical evidence. Yet, somewhat paradoxically and despite a commitment to transdisciplinary discussions, these scholars have not drawn from archaeology and/or bioarchaeology, sub-fields in which materiality matters most. A lack of engagement with this sizeable corpus perhaps stems from a misconception of archaeology that we may also trace back to Foucault.

1.4 Archaeology of Knowledge

For Foucault, archaeology is inspiration, more so than a fully actualized field of study in and of itself. He (2002 [1972]: 8) defined it as "a discipline devoted to silent monuments, inert traces, objects without context, and things left by the past" (see also 1970). His (mis)appropriation morphed archaeology into a metaphor and method of analysis, an intellectual excavation into the unconscious or hidden. For Foucault, archaeology's scale of analysis was "chronologically vast enough" (2002 [1972]: 33) to describe discursive formations. Though bodies were ubiquitous in his writings—they were disciplined, controlled, pathologized, etc.—their biophysicality and contextualizing physical spaces were of tertiary importance. Excavation to unearth the unconscious was constrained to the archives and written record.

Thus, Foucault initially presented an archaeological approach as a type of historiography. More specifically, he wrote a history of the sciences. His objective was to describe the discursive processes that led to the formation of systems of knowledge. As such, we may liken Foucault's use of archaeology to the real discipline's culture–historical paradigm. That is, description and classification of material culture was useful for establishing what cultural norms looked like within a bounded space, while comparison could identify differences over time. But, explanations about the causes of cultural change remained simplistic (i.e., migration, diffusion, invention). Foucault was likely unaware of the processual approaches being developed concurrent with his writings on archaeology. Perhaps he would not have been so quick to forsake archaeology, had he known about the Harris Matrix, which was developed in the mid-1970s to create a coherent stratigraphic sequence from complex and temporally related deposits (e.g., Harris 1975).

Archaeology turned out to be if not a failed project than certainly an unfulfilling one for Foucault. A shift to genealogy allowed him to better explain causes and transitions by comparing and linking modes—ideas, practices, institutions—through which knowledge is produced. For instance, and as Chap. 2 demonstrates, tracing the connections between scientific studies and popular presentations of gender, race, and sexuality identified a creeping naturalization of culture and culturalization of nature over the course of the nineteenth century. While many have criticized Foucault for his fast and loose approach to historical data, few take issue with the larger objective of his genealogical project—to write a history of the present that reveals the progress of knowledge and machinations of power.

"Why? Simply because I am interested in the past?" he queried. And in response, "No, if one means that by writing a history of the past in terms of the present. Yes, if one means writing the history of the present" (Foucault 1977: 33). A study of the past is important for documenting ways of thinking and being—the epistemological and ontological—that diverge from the here and now. And Foucault's (1985, 1986) analysis of socio-sexual lives in ancient Greece and Rome offers evidence of such difference. But, in making this work an end unto itself, an understanding of processual shifts that lead to current conditions is incomplete, and thus incapable of being challenged. He does not go as far as to say that a study of the past for its own sake is self-indulgent, though this may very well be his implicit message. If so, then researchers need also deliberate about the ethical ramifications of their (pre)historic analyses.

Archaeologists' genealogical efforts, I would argue, advance Foucault's original agenda by linking discursive practices to material evidence for a given cultural system. Brumfiel's (2006) comparative historical study is demonstrative (though she makes no reference to either Foucault or genealogy). "The nuanced differences in a series of historically related cases under evolving social conditions," Brumfiel (2006: 871) writes, "strengthens our ability to grasp the subject of our study in a culturally appropriate way and to understand how and why it has responded as it has to evolving social conditions." Her examination of Mesoamerican weavers and their craft, from the pre-Columbian period through European colonialism and up to the ethnographic present, highlights how shifting politico-economic circumstances

impacted the production and significance of this craft. She is then able to isolate the threads of cultural change and continuity over the longue durée. Her model is also applicable to other facets of cultural systems. In Chap. 6, for instance, I consider Maya midwives and their role in reproductive management as practiced from the pre-Columbian period up to the age of modern medicalization.

1.5 Presentism

Archaeology and bioarchaeology, I believe, have the raw data to deepen politicized and/or medicalized debates about reproductive management, gender identification, and sex determination. Lessons from the past can reveal prehistorical amnesia in the case of marital, erotic and reproductive choices, as well as track women's diminishing autonomy over bodily experiences. Hence, writing a prehistory of the present acts to counter essentializing narratives about the current state of socio-sexual affairs. This endeavor should not be confused for presentism, however.

To quote George Stocking (1965: 2136), those who investigate the past are "undeniably conditioned in a thousand subtle ways by the present in which they write." Discursive analysis can identify the contemporary epistemological, ontological, and ethical frames informing studies of the past. For example, in their studies of early hominid ancestors, paleoanthropologists use "monogamy" to describe the social behaviors of *Australopithecus afarensis* (e.g., Alexander and Noonan 1979; Larsen 2003; Lovejoy 1981; Reno et al. 2003). Yet, researchers provide no explicit definition of the term. Perhaps they mean a "condition of having only one mate during a breeding season or during the breeding life of a pair," per the American Heritage Dictionary (2000). But, monogamy also refers to "practice or condition of being married to only one person at a time." The latter definition certainly does not apply to prehistoric hominids. When communicated to a general public, whose contemporary understanding of marriage is framed by controversy surrounding who may and may not enter into the institution, unqualified statements about monogamy may conjure semantic confusion, legitimate ideas for which there is little evidence, and present modern socio-sexual arrangements as human nature.

When socio-sexual lives are concerned, I see this type of presentism as dangerous for several reasons. Archaeology's reach into the far recesses of the past provides the empirical evidence for reifying certain socio-sexual behaviors related to ancient familial organizations, reproductive strategies, and socioeconomic relationships as human nature. Such may be a researcher's interpretive intent, as was the case with the Lovers of Valdaro. Or, it may call attention to scholars' lack of critical reflection. Or, heteronormative ideas may be an unintended consequence of disseminating information beyond the confines of the academy. Regardless, statements and studies that contain heteronormative ideas are troublesome given scholars' intellectual authority. A central argument in this book is that discoveries of decedents whose bodies have been identified as romantically entangled, compulsorily reproductive, or occupationally divided say more about our present state

of socio-sexual affairs than they do about past interactions and intimacies. Under closer and more critical scrutiny, it seems that varied publics are guilty of the act that Foucault worked so assiduously to avoid—a history of the past written in the terms of the present.

Additionally, and as defined by Valerie Pinsky (1989: 90), "Presentism typically involves a process of historical 'abridgement', reducing that detail and complexity to a search for linear connections between the past and the present in order to *judge* the past and *legitimate* the present." This second definition suggests that contemporary agendas may drive investigations of the past. Excellent examples are viral news stories about the "homosexual" or "transsexual caveman," to which I return shortly, and "transgender" Ice Maiden. These descriptions of socio-sexual identities are fallacies for the reason that they result from modern sociopolitical conditions in Western society.

Under the umbrella of transgender, for instance, are a host of identities and practices—transsexual and transvestite being just two—that complicate normative notions about the body, gender roles, and sexual relations. Susan Stryker (2008: 1) explains:

> I use it…to refer to people who move away from the gender they were assigned at birth, people who cross over (*trans-*) the boundaries constructed by their culture to define and contain the gender…it is *the movement across a socially imposed boundary away from an unchosen starting place*—rather than any particular destination or mode of transition.

Stryker's (2008) comprehensive treatment details transgender history's key terms, emergence, conceptual concerns, and political activism. From juridical and medical assessments of cross-dressing in the nineteenth century to Magnus Hirschfeld's coining of "transvestite" in 1910 to intellectual concerns and political activism born from (and reacting to) late twentieth century feminists and queers. This is all to say that gender variance is likely a cross-cultural phenomenon with a deep antiquity. But, "transgender" cannot be disentangled from sociopolitical processes that are very recent in historic date and cultural setting. Use of this term, or trans- more generally, to describe identities or experiences in the bioarchaeological record then points to effacement of contemporary Western society's recent past, as well as a disregard for (or insensitivity to) dimensions of sex/gender systems that are contingent and themselves dynamic.

For my part, I lean toward Stocking's (1965) understanding of *enlightened presentism*. This position advocates understanding the past on its own terms, though not necessarily for its own sake. I also think it requires bioarchaeologists to think about the connection between the past and present as relational rather than progressive. The latter suggests social evolution, while the former emphasizes processes and invites reflective comparisons to engender more ethical bioarchaeology (see Geller and Suri 2014). Accordingly, to populate the past with diverse socio-sexual lives makes visible evidence of alternative experiences and existences that debunk heteronormativity as human nature, as well as recognizes that the current Western sex/gender system is a construction capable of transformation.

Of course, there are potential pitfalls to avoid. Specialists and non-specialists should not assume that identities born of present-day sociopolitical circumstances had relevance in past contexts (e.g., transgender). It is also crucial to not colonize past socio-sexual identities. By this I mean that contemporary peoples should not claim a past socio-sexual identity to which they have no cultural connection (e.g., two-spirit). Descendant communities may find such appropriation especially objectionable. Ultimately, as long as we do not examine our case studies apart from their cultural–historical context, we can use past examples to think more critically about the present for a better future.

Returning to the case of the homosexual (or transsexual) caveman, we may further explore the processes involved in producing presentist representations of past socio-sexual lives. Excavators affiliated with the Czech Archeological Society uncovered a burial in Prague's suburbs that dated to ca. 2900–2500 B.C. Their press release identified the decedent as a male-bodied individual who had been positioned and interred with grave goods typical of "women."

> From history and ethnology, we know that people from this period took funeral rites very seriously so it is highly unlikely that this positioning was a mistake," said lead archaeologist Kamila Remisova Vesinova. "Far more likely is that he was a man with a different sexual orientation, homosexual or transsexual.[2]

Similar to reports about the Lovers of Valdaro, news reports about the discovery in Prague went viral. Responses were immediate and came from diverse publics. Lay audiences opined, often anonymously, on myriad comment boards. Their statements ran the gamut—from uncritically fascinated to grossly uninformed to mildly skeptical to unrepentantly homophobic.[3] Several academic archaeologists who maintain popular blogs—John Hawks ("john hawks weblog"), Rosemary Joyce ("Ancient Bodies, Ancient Lives"), and Kristina Killgrove ("Powered by Osteons")—took the Czech researchers and reporters to task for their inferential deficiencies about sex, gender, sexuality, and/or bioarchaeology.[4] Rosemary Joyce, for instance, pointed out that Czech excavators presumed terms of modern origin were germane in ancient contexts. These informed criticisms like the original story itself were rapidly and

[2]Multiple news stories included this statement: http://www.huffingtonpost.com/2011/04/07/gay-caveman-found-prague_n_846246.html; http://www.telegraph.co.uk/news/newstopics/howaboutthat/8433527/First-homosexual-caveman-found.html; and http://www.nydailynews.com/news/world/archaeologists-discover-first-ever-gay-caveman-czech-republic-man-buried-pots-not-tools-article-1.114638. All were accessed on 11 April 2011.

[3]For examples see: http://www.usmessageboard.com/threads/gay-caveman-found-by-archaeologists.163154/; http://christwire.org/2011/04/the-gay-caveman-agenda/; http://www.theapricity.com/forum/archive/index.php/t-25878.html; http://scducks.com/forum/archive/index.php/t-69503.html; and http://www.subsim.com/radioroom//archive/index.php/t-182293.html (all were accessed on 9 December 2015).

[4]For Joyce's blog see: https://ancientbodies.wordpress.com/2011/04/07/gay-caveman-wrecking-a-perfectly-good-story/. For Hawks's blog see: johnhawks.net/weblog/topics/meta/communication/gay-caveman-prague-2011.html. For Killgrove's blog see: www.poweredbyosteons.org/2011/04/gay-caveman-zomfg.html?m=1. All were accessed on 21 December 2015.

widely disseminated in online news sources.[5] Nevertheless, the decedent's identity as a homosexual or transsexual caveman continues to hold weight. We may certainly attribute this to the fact that Czech archaeologists have yet to produce scholarly and peer-reviewed publications refuting or supporting their original claims.

Of course, academics who weigh in on sex, gender, and sexuality in non-traditional formats like blogs may also disseminate misinformation. This possibility is all the more worrisome given their status as scholars. Of a burial said to contain a "transgender" Ice Maiden, for instance, theologist Candida Moss wrote in a December 2015 blog post for the *Daily Beast* that "the history of transgendered individuals is as old as those of cis-gender people."[6] The use of modern terms to describe ancient socio-sexual lives is only one shortcoming with her statements. Moss also mistakenly identifies the Ice Maiden as a 5th century B.C. Pazyryk burial from Ak-Alakaha mound 1 in the Altai region's Ukok Plateau. In their academic publications, archaeologists describe this decedent as "16–17, a robust young woman 'unusually tall and strong, well built'" (Mayor 2014: 78). She had been entombed with a male around 45 years old. Both were dressed similarly and their grave goods included battle-axes, arrows, shields, and nine horses (Polosmak 1994, 2001). Moss most likely confuses this individual for the Ice Maiden because her source, a *Forbes* blog post authored by Kristina Killgrove, incorrectly names the burial as such.[7] Rather, the Ice Maiden is a popular name for a female who may have died of breast cancer around the age of 25–30 years. In peer-reviewed, scholarly sources, she is labeled burial 1 at Ak-Alakha-3 mound 1 (Chikisheva et al. 2015). She was unearthed in a separate mound and atop her body were placed a child and a male with spina bifida. These mistaken identities stress that all bloggers should do diligent research prior to posting their columns.

Recognizing the importance and challenges of distilling complex archaeological studies into formats accessible to non-specialists, I see the necessity of considering mass media communications' effects on the representations of bodies, especially when socio-sexual lives are at issue. To this end, I apply the concepts *mediascape* and *bodyscape*.

[5]For example sees: http://www.cnn.com/2011/WORLD/europe/04/10/czech.republic.unusual.burial/ and http://www.livescience.com/13620-gay-caveman-story-overblown.html. Both were accessed on 11 April 2011.

[6]See http://www.thedailybeast.com/articles/2015/12/05/siberian-gender-bending-warrior-princess.html, accessed on 17 February 2016.

[7]See http://www.forbes.com/sites/kristinakillgrove/2015/12/01/no-the-siberian-ice-maiden-is-not-a-man/, accessed 17 February 2016.

1.6 Mediascapes

To explain the effects of globalization on certain facets of cultural reproduction, Arjun Appadurai (1990, 1996) has elucidated five interconnected dimensions of "global cultural flow"—ethnoscapes, technoscapes, financescapes, ideoscapes, and mediascapes. Movement, or flow, can involve choice as much as force, a dialectic that contours with constraining and creative results. The unifying suffix recognizes "basic links between the conditions of material life and the conditions of art and imagination" (Rantanen 2006: 14).

The prefix set before -scape highlights the form that the real and imagined—the material and discursive—take. Ethnoscape captures the movement of people as they traverse national borders whether through luxury travel, sociopolitical instability, or economic necessity. At issue then are immigration, citizenship, labor, violence, social vulnerability, and ethnic identity. Technoscapes refers to technological innovations as envisioned and realized. Global capital and the ever increasing levels of non-transparency and disparity that characterize its exchange are covered under the notion of financescapes. Ideoscapes pertains to those ideological positions that solidify out of the Enlightenment's political discourse—about democracy, freedom, human rights, and love as we will see in Chap. 4—and become articulated and manipulated within modern nation-states.

Of mediascapes, Appadurai (1990: 9) relates that they refer

> to the distribution of the electronic capabilities to produce and disseminate information (newspapers, magazines, television stations and film production studios), which are now available to a growing number of private and public interests throughout the world, and to the images of the world created by these media…they tend to be image-centered, narrative-based accounts of strips of reality, and what they offer to those who experience and transform them is a series of elements (such as characters, plots and textual forms) out of which scripts can be formed of imagined lives, their own as well as those of others living in other places.

Because they diffuse knowledge in a way that is repetitive and far reaching, mediascapes contribute to the concretization of common sense. Appadurai suggested that mediascapes offer us a vision of the present whose fantastical qualities may incite future actions. "[They] help to constitute narratives of the Other and proto-narratives of possible lives, fantasies which could become prolegomena to the desire for acquisition and movement" (Appadurai 1990: 9). I may also add that accounts of ancient socio-sexual lives require us to deliberate about the past as entangled with the present and future.

The evolution of mediascapes—from the woodcut to the pamphlet to the newspaper to the television to the internet—speaks to technoscientific innovation, popularization, and globalization. In this book, I concentrate on museums and journalistic-seeming websites. Suffice to say that the world in which Appadurai first sketched out his understanding of the mediascape has changed in profound ways. Yet, a digital revolution in communication has made his concept more not less

pertinent in the twenty-first century. Mediascapes' reach is now wider and occurs at a more accelerated rate. Arguably this change has democratized the process of dissemination, though socioeconomics can still dictate access to certain mediascapes. Not everyone's phones are so smart.

For several reasons, which I abbreviate here, scholars have recently made a case for museums as mediascapes (e.g., Kidd 2014; Sandell 2007). In order to stay solvent and relevant, institutions find themselves having to strike a balance between their mission to education and the public's desire for entertainment. Hence, there has been an increasing trend to incorporate various electronic modes that disseminate information within the museum's physical space, as well as beyond to virtual audiences. Such innovation requires specialists and non-specialists to be involved in the process of making media. This collusion, which can comprise the credibility of inferences drawn about archaeological bodies, may not be readily apparent to consumers of museums' accounts. Critical reflection about the narratives produced, disseminated, and consumed then is imperative.

In the case of journalistic mediascapes, dead tree media (as bloggers might deign), digital journalism, edublogs, and/or their ensuing commentary all qualify as such. But, the internet is rapidly making radio, television, and print media less prominent as sources of information for news. I do not wish to suggest that all these resources are equally legitimate. Major news sources, for instance, strive to be objective and ethical in ways that diverge from the politicized or religious agendas of many blogs or discussion boards. Nevertheless, the broadening of the journalistic terrain has made it much more difficult to distinguish facts from analysis from opinion (Berkowitz 2009). And, in many instances, entertainment comes at the expense of education.

Of course, there are always exceptions to this rule, as suggested by the controversy surrounding Nicholas Wade. From 1982 until 2012, Wade was a key staff writer for the Science Times section of the *New York Times*. Over the years, he has reported on issues ranging from evolution to genetics to archaeology. The assumptions built into his accounts sometimes can be attributed to those academics he interviews. But, often the connections that he draws during his synthesis of complex ideas is built on a foundation of a priori notions. Several scholars, for instance, have exposed the racism inherent in his reporting and popular publications (e.g., Marks 2014; Stein 2014). I find his writings about gender and sexuality to be similarly troubling. For example, in a piece headlined "Neanderthal Women Joined Men in the Hunt" (2006), he reports on Paleolithic remains that paleoanthropologists argued were suggestive of different "occupations" [the scholarly source is authored by Kuhn and Stiner (2006)]. "It seems reasonable to assume that these activities were divided between men and women, as is the case with modern foraging peoples," he surmised. There is no discussion, however, about the reasonableness of comparing communities and cultures divided by at least 10,000 years (see Chap. 5). Nor is there awareness that this view of labor is tied tightly to notions born out of increasing industrialization, spatialization characterized by private/public divides, and feminization of domesticity in the nineteenth century.

Journalistic integrity aside, news reports accounts of archaeological bodies contrast markedly with traditional academic routes for disseminating information and images. First, these forms of mediascape involve not just the textual but also the hypertextual. Such innovation allows for greater interconnectivity between different sources. But, it also creates greater confusion about the origin point of a news story and the legitimacy of claims. In the process of retelling, translating, and editing a whisper down the lay effect often results. Accordingly, certain information may be misrepresented and then repeated or erased entirely during this process.

Additionally, online news with its tendency to go viral also operates in hyper-time, which is remarkably different from the snail's pace of sound scientific research, writing, and publication. Thus, immediate gratification comes at the expense of a traditional process of peer-review. Non-specialists and scholars' accounts may then be perceived as equally accurate. This is to say that critical evaluation of content should be a prerequisite for those who access online news sites and the blogosphere given their prominence as distributors of news and world wide accessibility.

Finally, the lack of balance and checks indicates the challenges of monitoring content on that which is wireless and worldwide. It is difficult if not impossible to hold authors of racist, sexist, or homophobic statements accountable for their public intolerance. But, on the flip side, anonymity in virtual venues, especially when sexuality is concerned, can be liberatory inasmuch as participants have a means for transgressing constrictive socio-sexual norms. Mediascapes then can provide a space outside of the mainstream for queer offshoots and public discontent with social norms. There is nothing inevitable or uncritically imbibed about common sense (see Chap. 3).

1.7 Bodyscapes

Appadurai has remarked that the power of -scape as a concept is diluted by attaching endless prefixes to it (interviewed by Rantanen 2006: 14). I concur, but still believe understanding of global cultural flows is enhanced by deliberating about bodies. Appadurai does not directly discuss bodies, which is not to say that his other spheres of analysis overlook them entirely. Ethnoscapes, for instance, track the flow of people's physical bodies as they migrate and assimilate (or do not). And financescapes can certainly pertain to the commodification of bodies in diverse types of labor markets. "Bodyscape is perhaps a necessary addition to Appadurai's landscapes," I have remarked in a previous publication, "because physical bodies and their parts are similarly subject to global cultural movements" (Geller 2009: 505).

Granted the bodyscape concept is a difficult one, as I recognize when I have to make it accessible to the undergraduates I teach. So, here I take the opportunity to explain my position. For my doctoral work, I had the good fortune to investigate

pre-Columbian Maya burials and the bodies therein (Geller 2004). It was during the course of my research in northwestern Belize's Three Rivers Region that I first began to think deeply about the body—its biophysicality, cultural shaping, and symbolic meaning. The Maya conception of the body, I quickly realized, departed markedly from the etic Western frames that researchers have long used to study it. The Cartesian dichotomy of life and death, for instance, proved an inadequate frame for understanding how decedents became socially viable ancestors whose human remains continued to have potency. Intersectionality, as envisioned by feminist and queer scholars, was not applicable to this ancient sample, which was comprised of 130 burials from 14 of the region's sites. But, my conjunctive study of age, sex, trauma, disease, and body modifications (i.e., shaped crania, modified dentition) identified pan-Maya patterns in the Classic period (ca. 250 BC–AD 900), as well as differences between and within communities tied to location, occupation, gender, and social status.

Three ideas central to the bodyscape concept were developed as a result of this work. First, within a culture, an idealized vision of the body undergirds notions about "normal" social identities and interactions. It may be dominant and pervasive, but it is by no means absolute or static. Bioarchaeological data also signal production of subversive or alternative representations that resist, dispute, and queer modern, hegemonic beliefs about the body, its parts, capabilities, and links to personhood. These tensions—between structure and agency, power and resistance—are best documented by conducting population-based research that reveals broader societal patterns, as well as identifying individual burials and bodies that do not easily cohere with any statistically significant pattern.

Second, in order to draw inferences about socio-sexual identities from archaeological bodies, it is crucial to appreciate that past lives are complex, dynamic, culturally contingent, and (pre)historically situated. Neither inferences nor appreciation can occur without approaching contextualizing resources strategically. That is, and as aforementioned, bioarchaeologists' studies of biophysical data should be further informed by myths, artifacts, artistic renderings, sculpture, ethnohistoric documents, ethnographic analogues, etc.

Finally, bioarchaeologists must reconstruct emic understandings of how bodies are made meaningful within contexts distant from their own in space and/or time. To this end, they need interrogate the epistemological, ontological, and ethical frames at work in their analyses. This task is by no means an easy one, and it is likely to take many investigators out of their theoretical comfort zone. For this reason, I recommend that bioarchaeologists seek out collaborations with social scientists and humanists.

With these ideas in hand, I then turned to the biomedical bodyscape, which frames scientific studies of bodily difference in Western society (Geller 2009). As such, it predominates in bioarchaeology. In brief, discursive practices work to fragment wholes and bridle human variability. Socio-sexual identities are understood as biologically determined. The effects are far from neutral, as my work with the Samuel G. Morton Crania Collection underscores (see Chap. 5). Certain bodies become idealized, others stigmatized.

Reflecting on the concept, Alberti (2013: 101) writes that "bodyscapes are idealities that promote certain experiences through serial representations that overlay a deeper, 'true' body." Perhaps. I do agree with his assessment that representations of bodies become widely accepted and standardized by reiteration. But, I do not think bodyscapes exist only as ideas. Rather, they are predicated on a *reality* that is produced and maintained as an ideal or norm. Thus, I see bodyscapes as involving material-discursive entanglements (see Chap. 3). For example, and as described in Chap. 2, the physician Samuel Thomas von Soemmerring's 1796 illustration of a female skeleton modeled the cranium after one he had borrowed from Johann Blumenbach's collection. The skull, which originally had belonged to a young Georgian female, was very real. In Blumenbach's opinion, it was the most beautiful in his collection, aesthetic appeal being linked to morphological ideals about sex *and* race.

Soemmerring's illustration signals the biomedical bodyscape's inception, though I do not wish to suggest he is wholly responsible. Rather, physicians' efforts in general acted to catalyze and then solidify hegemonic representations of bodies. They fragmented, essentialized, and idealized bodies, but they were also responsible for disseminating information about them—in classrooms, textbooks, and learned societies. Hence, an additional facet of the bodyscape, which remains germane today, is its interconnection with other -scapes.

Like media, ideas, people, commodities, and technology, bodies and their parts can traverse boundaries. To describe this movement, which may prompt the reconfiguration of self and community, Appardurai (1990) uses the term *deterritorialization*. For example, mass media accounts of archaeological bodies on the Internet, which can often include excavators' soundbites and selectively framed photographs, circulate far beyond their sites of discovery (see Chap. 4). Bodyscapes' interconnection with certain -scapes may also result in *detemporalization* (Geller 2009). This term designates the movement from present to past (and back again) without reflecting on bodily differences as impacted by or made meaningful within specific environmental, historical, and socioeconomic settings. The ancient DNA studies discussed in Chap. 7, for example, demonstrate how a technoscape can reduce human bodies to the sum of their molecular parts. As a consequence of spatial and temporal unmooring, I argue, representations of archaeological bodies convey the idea that certain dimensions of socio-sexual lives are universal, static, and rooted deep within antiquity. Specifically, heteronormativity appears as human nature.

Hence, I emphasize the need to deliberate about emic bodyscapes, those of the cultures under study, which could feasibly derail a priori and naturalized notions about sex, gender, and sexuality. To demonstrate that socio-sexual diversity has existed through time and space, we could look for those individuals whose identities were defined by a queer status according to our contemporary understanding of the concept—individuals with intersex conditions, homosexuals, transsexuals, berdaches, etc. While such studies would certainly attest to the myriad ways to be human, presentism would ultimately undergird these efforts. It is unlikely we will gain greater understanding of socio-sexual lives in the past. Rather, a far more

productive approach is to situate identities and interactions within cultural–historical contexts and to understand the processes at work in their formation and reconstitution. The cultural cases discussed throughout this book, from my own and others' bioarchaeological investigations, aim to demonstrate as much.

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Chapter 2
The Corpus

2.1 Prelude: The Composers' Skulls

After his death on March 26, 1827, Ludwig van Beethoven's temporal bones were extracted with surgical imprecision from his skull (Meredith 2005; Thayer 2013 [1921]: 309–312; von Breuning 2005 [1886]). Though autopsy of a celebrated figure was not an unusual post-mortem event at the time, the removal of these particular skeletal elements seems to have been a departure from standard medical practice. The composer's death mask appears disfigured as a result. Inspection of Beethoven's body did little to clarify his cause of death. Nevertheless, attendant physicians remained hopeful that the auditory organs would yield information about his musical abilities and deafness. Beethoven was then inhumed in Währing Cemetery on the northwestern outskirts of Vienna. There was much public mourning. Amongst the aggrieved was Franz Schubert, a fellow Viennese composer who idolized Beethoven. Less than two years later, and at his request, Schubert was buried a few graves away (von Breuning 2005 [1886]). Neither man, however, rested peacefully.

In 1863, both composers' bodies were exhumed and examined. They were mostly skeletonized, saved for Schubert's preserved hair [decidedly ironic seeing that some years prior to his death he had lost it during an undiagnosed illness (Solomon 1989: 203–204)]. Their forensic analysis provides an important precursor to a bioarchaeological approach, which has sought to contextualize remains and explore the complex intersection of biology, inheritance, and culture. The event was of interest to anthropologists and anatomists alike, for at this juncture the line between natural history and medicine was a fine one. All of these scientists trained formally at a selected number of European and American medical schools. And a fascination with crania was widespread. The individuals who analyzed Schubert's and Beethoven's disinterred remains were no exception. Gerard von Breuning (2005 [1886]: 59) recounted,

P.L. Geller, *The Bioarchaeology of Socio-Sexual Lives*,
Bioarchaeology and Social Theory, DOI 10.1007/978-3-319-40995-5_2

> The main goal was, of course, the retrieval of the skull…and [it] aroused the highest interest among phrenologists and lay person alike because of the striking difference between the two skulls. They seemed to reflect the characteristics of the composers' works. The walls of Beethoven's skull exhibit strong density and thickness, whereas Schubert's bones show feminine delicateness.

Von Breuning's statements offer ingress to several ideas explored in this chapter. For physicians in the nineteenth century, the epistemological and ontological norm was to view bodies as partible. Fragmentation was a central element of the biomedical bodyscape that took root during this period (see Introduction). Yet, rather than transforming subjects wholly into objects, the scientific study of bodies' parts established a subject–object dialectic. The skull, for instance, was an object often fetishized for the information European and Euro-American scientists thought it could reveal about a subject's race, gender, class, or sexuality. Consequently, its historic analysis counters claims of science's unfailing neutrality and objectivity.

In the case of racialized identities, the craniometric studies of numerous physicians—the American Samuel Morton, Scot Robert Knox, French Paul Broca—represented populations' differences as natural, bounded, and ranked (Geller 2015; Gould 1981). From scientific data, inferences were then drawn about Caucasians' superior intellect and people of color's inferiority. Similarly, certain Caucasians could be racially Othered and denigrated by assigning non-Caucasian attributes to their crania. Such was the case for Schubert. His biographer Heinrich Kreissle von Hellborn listed a suite of stereotypical black attributes to describe the composer's visage: "His round and puffy face, low forehead, projecting lips, bushy eyebrows, stumpy nose, and short curly hair gave him that negro look" (1865: 223).[1] The portrayal suggests that Kreissle von Hellborn was not too fond of his subject and was familiar with the anthropological studies of the day (Gramit 1993: 71). On the matter of Beethoven's skull, however, he is silent, most likely because his whiteness and maleness represented the standard against which Others were measured.

As historians tell us, and as I review here, nineteenth century physicians regarded race and sex as analogous. Thus, scientific studies also reinforced white males' position at the top of the social hierarchy (e.g., Schiebinger 1993; Stepan 1986). Like racial features, the physical attributes of sex held social significance. The "feminine delicateness" that Schubert's cranium displayed, for instance, confirmed widely held sentiments about the composer's music; its effeminacy was substandard to the power and intelligence of Beethoven's more masculine oeuvre (Gramit 1993). He possessed "a feminine character, much more voluble, softer and broader; or a guileless child romping among giants," so claimed an 1838 critique of his "Grand Duo" (Schumann as cited in Gramit 1993: 72). "Schubert conducts

[1]The quote is from the English translation of Kreissle von Hellborn's biography. The original German is as follows: "Sein rundes, dickes, etwas aufgedunsenes Gesicht, die niedere Stirn, die aufgeworfenen Lippen, buschigen Augenbrauen, die stumpfe Nase und das gekräuselte Haar, gaben seinem Kopf ein mohrenartiges Aussehen" (Von Hellborn 1865: 466).

himself as wife to husband," continued the reviewer, "the one giving orders, the other relying upon pleas and persuasion." Since this time, scholars have debated Schubert's sexual predilections and the degree to which homoeroticism played out in his music (e.g., Kramer 1998; Solomon 1989). The investigative focus is born from an understanding of sex, gender, and sexuality as interchangeable concepts, an idea that also has nineteenth century origins (see Chap. 3).

Following their disinterment and examination, Schubert's and Beethoven's remains were placed into refurbished brick vaults. Twenty-five years later, on 21 June 1888, they were removed a second time, hastily studied, and reburied adjacent to each other in Vienna's Zentralfriedhof. The run-down state and inevitable re-purposing of Währing Cemetery had made it an unsuitable burial ground (von Breuning 2005 [1886]: 58). Interestingly, the consecrated space that had originally held their remains was renamed in honor of its less revered musical prodigy; today it is Schubert Park.

While their extended mortuary treatment indicates that scientists recognized the composers' subjectivity, there are aspects of these events that hint at their objectification. Two large pieces and eight small fragments of Beethoven's cranium came into the possession of anthropologist Romeo Seligmann (Meredith 2005: 9). There is little to suggest that fragmentation was perceived as a desecration. Indeed, von Breuning would later make a case in the interests of science for open-ended access to Schubert's and Beethoven's skeletons. "Only highly prejudiced people (who are unfortunately in the majority) would be offended by this course of action; any person with scientific training would certainly not object," he (2005 [1886]: 60) declared. Of course, the statement also indicates that von Breuning and colleagues were unaware of the ideological beliefs and sociopolitical circumstances that informed their own research queries and conclusions.

The scientific study of and inferences drawn from Beethoven's and Schubert's skulls are by no means idiosyncratic. Rather, in this chapter, I use their death histories as a prelude to a more thoughtful discussion about biophysical evidence and the production of knowledge in bioarchaeology. The hard and bony facts are emphasized, as is sex's link to race. Prior to tracking the determination of sex and the meanings made from scientific data, I first deliberate about objectivity. Objective science—science that is rational, value-free, democratic—is ideal science. The scientific study of humans' sex differences, however, has been anything but. To advance knowledge, analysts sought sufficient comparative samples, and their anatomical collections grew as a consequence of colonial necropower. The inferences they then drew from biophysical evidence, which has become increasingly atomized with time and technoscientific advances, have often been informed by heteropatriarchal ideas about gender and sexuality.

2.2 Scientific Objectivity

2.2.1 Vienna's Jews

The details of Beethoven's and Schubert's death histories offer a pointed contrast to those Jews buried at Währing Jüdischer Friedhof, just two kilometers to the north of Währing Cemetery. Währing's Jewish cemetery was opened in the 1780s to accommodate the district's expanding Jewish community. By the late-nineteenth century, inhumations had ceased. But, Vienna's Jews continued to regard the space as a hallowed burial ground, which was one reason for its desecration in 1942. Scientific study of racial difference provided an additional justification. That summer, anthropologists from the Museum of Natural History, most of whom were affiliated with the National Socialist party, unceremoniously disinterred approximately 200 Jewish decedents (Teschler-Nicola and Berner 1998: 4–5). Exhumations continued into spring 1943. And as an aside, there is something tragically poetic about the fact that Franz Boas, who had fled Germany for America because of anti-Semitism and then worked so assiduously to debunk racial anthropology's key interpretations (e.g., Boas 1912), would die just a few short months after the Jewish cemetery's destruction. (These twists of fate may be no more than coincidence, but they are nevertheless provocative heuristically.)

The happenings at Währing Jüdischer Friedhof generated little protest. Of the 200,000 Jews who made Vienna their home prior to 1939, around half were forced to emigrate. For those who remained in the city, systematic deportation to concentration camps resulted in the murder of some 65,000 Viennese Jews (Bunzl 2004: 22, fn. 98). The misfortune of these many Others proved scientifically opportunistic for some. The Museum of Natural History was able to expand its "collections with 'material' that was previously impossible to get" (Berner 2010: 28). The desecration of the dead provided a particularly powerful symbol of the Nazis' intent to eradicate all traces of Jewish existence. Collected skulls were then analyzed for information about cranial capacity, morphology, and pathology (Steinweis 2006: 59). From these data, scientists lent support to the idea that Jews were a distinct and lesser race. While the conclusions were not new, they did demonstrate that racism under the guise of objective craniometric studies was still analytically viable. Scientific racialization bolstered Nazi ideology about the Jews' inferiority, which in turn provided political justification for their extermination. Nazi scientists did not regard their work as overtly political, however. According to Proctor (1993),

> Authoritarian science based on the "Fuhrer principle" replaced what had been, in the Weimar period, a vigorous spirit of politicized debate in and around the sciences. The Nazis "depoliticized" problems of vital human interest by reducing these to scientific or medical problems, conceived in the narrow, reductionist sense of these terms.

Fascism's appropriation of anthropometric studies during Germany's inter-war years and WWII should give us pause about science's objectivity [for discussions about the Nazis' (ab)use of the archaeological record see Arnold (1990)]. Of course,

I do recognize that in raising the specter of Nazi Science, my example is an extreme and often cited one. Yet, was it an aberration, we need not call into question scientific neutrality more generally. Racism has historically informed the determination of race from human remains, as many scholar have discussed (e.g., Blakely and Harrington 1997; Blakey 1987, 1998; Fabian 2010; Geller 2015; Gould 1981; Kakaliouras 2008; Marks 2009; TallBear 2003; Thomas 2000). As a consequence, purportedly "objective" and mainstream scientific studies have served to racialize and denigrate Others. Such is the reason that the majority of anthropologists today regard race as a sociocultural construct.

Describing race as a construct is not to deny observable biological facts, physiological processes, or quantifiable differences—it is not to suggest the body is a "blank page for social inscription" (Haraway 1988: 591). Rather, the designation recognizes that science is never pure and commonsensical ideas about biological differences are "made" to matter, as opposed to being objectively discovered or found. "What the sciences actually observe is not bare nature but always only nature-as-an-object-of-knowledge—which is always already fully encultured," Harding (1992a: 575) cautions. And what biophysical evidence is made to matter then informs a society's representations of and responses to social persons. Histories of science teach us this project is rarely if ever a neutral one. Hence, the importance of applying critical social theories to analyze categories tied to the constitution (or imposition) of social identities. In so doing, we may interrogate the limits of scientific objectivity and expose inequities that arise from their naturalization. These observations are no less pertinent to the bioarchaeological study of sex and gender.

2.2.2 Monte Albán's Tomb 7

In 1932, archaeologist Alfonso Caso and colleagues discovered Tomb 7 beneath the patio of an elite residence at Monte Albán, a pre-Columbian political center in Mexico's Valley of Oaxaca (Caso 1969). Grave goods, around 500 in total, included the exotic and precious. Though constructed in the Classic period, the tomb continued to be reused well into the Postclassic period, which complicated interpretations. Caso (1969: 50, 55) proposed that reentry disturbed some of the original occupants whose remains were then reinterred as secondary burials. The grave goods, he went on to argue, were associated with "esqueleto A," a flexed and seated burial bundle. Skeletal analysis conducted by Rubín de la Barbolla (1969: 279) identified this individual as a male who died around the age of 55–60 years old. Rubín de la Borbolla remarked upon the fragmentary condition of the skeleton and its missing pelvis. And despite distorting cranial pathology, he used the skull to assess the individual's sex.

Three decades later, Geoffrey McCafferty and Sharisse McCafferty returned to Caso and colleagues' data. Diligent documentation was one reason they were able to do so. Skeletal reanalysis did little to clarify the decedent's sex, however.

McCafferty and McCafferty (1994b, 2003) tentatively suggested that "esqueleto A" was biologically female based on a "female" mandible near the skull and the presence of a gracile patella. The mandible appears on the inventory but is labeled "intrusive." Grave goods proved more insightful. The presence of a spinning and weaving tool-kit indicated to McCafferty and McCafferty that "esqueleto A" was not a male but an individual of "female gender identity," either a religious figure (1994b) or a *cacica* (2003). In support, they cited copious historic, artistic, and archaeological evidence from pre-Columbian and Colonial periods that attested to the symbolic and practical link between Mesoamerican women and weaving. Ultimately, McCafferty and McCafferty concluded, androcentric bias had prevented Caso and colleagues from seeing the extraordinary Tomb 7 as the mortuary space of a potential female who was politico-religiously powerful.

Their reassessment may hardly strike archaeologists as implausible some three decades after critical feminism's incorporation into the sub-field. That powerful women lived and died throughout pre-Columbian Mesoamerica is now well documented (see Chaps. 5 and 6). When published, however, McCafferty and McCafferty's reanalysis was regarded as "very provocative" (Brumfiel 1994: 153) and "breaking new ground" (Costin 1994: 155).

Yet, not all scholars were so quick to praise their efforts. Flannery and Marcus (1994) were especially troubled by McCafferty and McCafferty's characterization of Caso as androcentric. "Dismissing him as some kind of antediluvian male-chauvinist pig is thus the first of the McCaffertys' errors," they rebuffed (1994a: 141). Their comment suggests they did not recognize the feminist critique of Tomb 7 for what it was—an effort to make visible the persistent structural androcentrism in archaeologists' reconstructions of the past and not the disparagement of a single individual or his scholarship (McCafferty and McCafferty 1994a). More recently, Flannery (2006: 9) has reiterated his discontent with the reanalysis in an *Annual Review of Anthropology* piece.

> And by the year 2000, a lot of serious, empirically grounded archeologists were getting tired of seeing fairly limited, sometimes even mediocre, field data "enhanced" by the addition of postmodern phrases…We had seen a mute, 600-year-old skeleton described as "biologically a robust male, but gender female."

In returning to McCafferty and McCafferty's reassessment of Tomb 7, there are certainly shortcomings with which we may take issue. For instance, their description of "esqueleto A" as "gender-female" or having a "female gender identity" does lack semantic nuance. That is, their language inadvertently conflates sex and gender. And, as Gero (1994) suggested in her original comments, the tomb's ambiguity may speak to a gender identity that is not easily understood as dichotomous or monolithic. Her suggestion anticipates socio-sexual lives that are intersectional and far queerer. But, Flannery's insinuation that McCafferty and McCafferty's reanalysis is postmodern, anti-scientific, empirically unfounded, and politically correct is as intellectually reductive as it is misrepresentative. Critical reflection exposes conceptual deficiencies—androcentric and racist biases, for instance—that are long regarded as "good" even "exemplary" science (Wylie 2002:

190). In so doing, it fosters more objective science. To not address deficiencies and inequalities at the level of the structure serves to defend and legitimate "the institutions and practices through which the distortions and their exploitative consequences are generated" (Harding 1992a: 568). Hence, McCafferty and McCafferty were compelled to clarify that their feminist critique was directed at archaeological practice more generally and not Alfonso Caso specifically. The likelihood is that many scientists who see this work as unnecessary, who idealize scientific neutrality, already benefit from certain unacknowledged, sociopolitical privileges.

To be clear, I am not suggesting that researchers who study the human body for information about social identity should eschew scientific objectivity. They should not. They should, however, recognize how difficult it is to attain the ideal (Gowland and Thompson 2013: 3). To cultivate scientific objectivity in one's research, scholars inspired by emancipatory politics have developed productive strategies. Influential have been statements made about standpoint theory by philosopher of science Sandra Harding (e.g., 1986, 1992a, b, 1995, 2004), though she is not the only one to have contributed to thoughtful discussion on the subject (e.g., Collins 1986; Hartsock 1983; Smith 1974). In brief, the approach insists that research start from an outsider's standpoint, from the vantage of socio-sexual lives marginalized by dominant modes of science. These "situated and embodied knowledges," in the words of Haraway (1988: 583) reveal power's production of knowledge, generate new queries, and present alternative ways of knowing. In her most recent statement on objectivity and diversity, Harding (2015) has deliberated about moving theory to methodology. For example, to include indigenous (or local) knowledge systems extends understanding of human-ecosystem interactions that are ecologically and socioeconomically sustainable, as well as symbolically framed. One case she discusses is Canadian Cree geese hunting. Citing anthropological work conducted by Colin Scott, Harding (2015: 85) explains,

> The Cree hunters of James Bay, Canada…have developed hunting principles and practices that are successful at maintaining the supply of geese…This requires that they also maintain the necessary environments to attract the geese…The geese give the hunters the gift of themselves only when the hunters demonstrate respect for the geese, as well as recognition both of the geese's distinctive environmental needs and their fears.

The lessons are significant ones, not just for what they can tell us about Western science's own practices and metaphors—the culturalization of the natural—but what we may also learn about the natural world's regularities. Additionally, and not inconsequentially, scientific practice that is inclusive may decolonize knowledge and promote social justice.

The sentiment, to make collaborative, accountable scientific practice normative disciplinary practice, is one that Wylie (2008) promoted in her Distinguished Lecture to the American Anthropological Associations' Archaeological Division. For her part, and of relevance to bioarchaeology, Wylie has countered claims of relativism with the idea of evidential constraints—"although archaeological data must be richly interpreted to stand as evidence, they do (sometimes) have a capacity to challenge and constrain what we claim about the past" (2002: 191; see also

Wylie 1992). What Wylie stresses is that our criticisms of scientific inquiry must address the empirical as much as they do the conceptual. This awareness is especially pertinent for investigators who collect biophysical evidence from bodies—about disease, development, difference. Take tuberculosis, for example. Paleopathological and biomolecular evidence can extend understanding of the disease's evolution, from its ancient emergence in local contexts to modern drug-resistant and global strains. In so doing, researchers need account for the confounding variables that may challenge analyses (e.g., age, health status). Yet, this epidemiological treatment is quite different from more anthropologically oriented queries that seek to understand culturally and historically salient experiences and meanings of the disease. We may bring the same attention to biological information about and techniques for discerning sex. Recognizing that our understanding of it as objectively determined, rigidly dimorphic, and constitutive of social identities is common sense in need of interrogation is a crucial first step.

2.3 Sexual Dimorphism

Humans are not very sexually dimorphic as far as primates go (Plavcan 2001). Compared to male gorillas who may be twice as large as their female counterparts, humans' body mass varies modestly between the sexes. Perhaps because of this dearth of extreme or obvious differences, researchers of human bodies have worked assiduously to develop analyses, ever finer grained in their scope, for distinguishing males from females. To this end, Western medical techniques for sex determination have shifted several times over the past 400 years—from a concentration on gross anatomical morphology to measurement to molecular testing. Technical changes have in turn led to new biophysical emphases, new ways to see sex. But, we would be remiss to regard these scientific advances as neutral or disconnected from their socio-historical settings. The differences made to matter—the knowledge that scientific discovery extracts from physiological process, skeletal element, bodily fragment—are laden with value. "We seem unable to escape," Marshall Sahlins (1976: 105) philosophized, "from this perpetual movement, back and forth between the culturalization of nature and naturalization of culture." In thinking about culturalization and naturalization, we may expand the scope to include sex. How we "make sex," per Laqueur (1990), speaks to the former. Remaining stridently wedded to the idea that rigid duality structures socio-sexual lives reflects the latter (see Chap. 5).

As Schiebinger (1986, 1989, 1993, 2003) has documented, the female form stripped of skin increasingly found its way into European medical texts and illustrations in the mid-eighteenth century. Inclusion of Her skeleton drew attention to morphological features that digressed from the male template. Anatomists did recognize that bipedalism had the most dramatic impact on the human pelvis's form. But, their attention then turned to observable differences between males and females. Physicians' descriptions suggest that the female pelvis was more remarkable on account of reproductive needs. For example, in the first edition of the

anatomical treatise he authored for medical students, Jones Quain (1828: 69), professor of anatomy and physiology at the University of London, is quite clear about pelvic differences.

> The size and conformation of the pelvis differ very remarkably in the two sexes. In the female, though its perpendicular depth is less, its breadth and capacity are greater. The alæ of the iliac bones are expanded; the upper aperture is more nearly circular, the projection of the sacrum less perceptible; and the space between the tuberosities of the ischia greater. The depth of the symphysis pubis is less in the female than in the male, whilst the breadth of the pubic arch is greater.

Sexing skeleton was by no means an objective endeavor, however. Schiebinger (1986) has argued that analysis of elements offered evidence for the "natural" order of social affairs. As such, information conveyed is about biological differences and gendered behaviors. For instance, the reproductive capabilities of female pelves ossified ideas about women's domesticity and maternalism, while smaller cranial capacities explained their lowly place in the hierarchy of human intelligence (Schiebinger 1986).

From bone to flesh, Laqueur (1990, 2003) continued with this train of thought. Anatomists' vision of sexual division, a two-sex model, gained traction during the Enlightenment. Prior to this, from the Classic period until the seventeenth century, a one-sex model predominated. The standard body being male, Renaissance medical documents following Galen represented female genitalia as inverted penises. Evidenced culled from cadavers' dissection failed to contradict this notion. In his medical text *De Humani Corporis Fabrica*, for example, the influential sixteenth century physician Andreas Vesalius presented female anatomy in terms of maleness. And he did so despite having dissected the cadavers of seven females. "Believing is seeing," Laqueur offers in explanation (1990: 79). The metaphysical foundations of Europeans' worldview, however, were increasingly becoming more unstable. "As cultural and political pressures on the gender systems mounted," Laqueur (2003: 306) later clarified, "a passionate and sustained interest in the anatomical and physiological dimorphism of the sexes was a response to the collapse of religion and metaphysics as the final authority for social arrangements." A fascination with "hermaphroditism" in the nineteenth century would have scientists and medical practitioners revisit their understanding of sex as rigidly dimorphic.[2] An emphasis on gonads, signifiers of compulsory reproduction and heterosexuality, reiterated their commitment (Dreger 1998).

Other scholars have since revisited Schiebinger's and Laqueur's influential statements to point out deficiencies (e.g., Cadden 1993; Park 2010; Park and Nye 1991; Stolberg 2003). But, their conclusions do not indicate that sex is any less a construct. Joan Cadden (1993: 3), for instance, argues that "the opinions of

[2]The term hermaphroditism is invoked here to capture the language used at a particular historic juncture. Activists and academics have discussed its conceptual shortcomings and derogatory meanings when used to describe humans' conditions. For an excellent explanation about its inadequacy as a modern referent see the Intersex Society of North America's FAQ page: http://www.isna.org/faq/hermaphrodite.

medieval physiognomers about male and female traits suggest evidence of other models not reducible to Laqueur's." That is, prior to the eighteenth century, numerous and competing understandings of sex co-existed. Katherine Park (2010) has more recently argued that the circulation of Galen's one-sex model does not indicate continuity but rather revival starting in the sixteenth century. Nor do critics dispute that a two-sex model continues to predominate in modern biomedical representations of bodily differences despite evidence to the contrary. And they do not disagree with identification of rigid and observable sex differences as instructive about socio-sexual norms, i.e., sexing is gendering. Bioarchaeologists should certainly take note of scholars' consensus that even Western ways of knowing the body are mutable, multiple, and entangled with sociopolitical circumstances.

As Schiebinger and Laqueur recognize, eighteenth century physicians who documented sex differences were primarily concerned with aesthetics. Anatomists represented ideals based on singular specimens or Western archetypes of beauty. Significantly, determination of sex from the skeleton did not begin with the unknown. The 1796 illustration by physician Samuel Thomas von Soemmerring (or Sömmerring) was one widely circulated example (Fig. 2.1). Its production speaks to the biomedical bodyscape's genesis (see Introduction). As professor of anatomy and physiology at the University of Mainz (1784–1797), Soemmerring's dissecting activities and anatomical collection likely gave him access to a plethora of potential models (Naragon 2010). He selected the post-cranium of a local 22-year-old female who had given birth. He then referenced the classical statues of the Venus di Medici and Venus of Dresden to perfect the illustration (Hildebrand 2005; Schiebinger 1986: 58). The cranium of a young Georgian female was the crowning touch (Hildebrand 2005: 563). While not entirely uncontroversial in its day, Soemmerring's female skeleton did present as biomedical standard, or norm, an amalgam of real fragments reconfigured and deemed ideal. Accordingly, descriptive texts and engraved image conveyed these differences as universal to other physicians and their students.

2.4 Anatomical Collections

The origin of Soemmerring's skull is not so much trivia. The anatomist requested to borrow the Georgian female from Johan Blumenbach, with whom he had studied medicine at Göttingen University (Naragon 2010). The skull, Blumenbach maintained (1865 [1795]: 300), was the most beautiful in his collection. That he consented to part briefly with it is suggestive of his close friendship with Soemmerring. Guiding Blumenbach's concern for morphological ideals was his research interest in racial differences. In seminal statements, he (1865 [1795]: 238) distinguished between five distinct races, arguing that even the skulls of infants possessed distinguishing traits. In support, he referenced his crania collection of 245 whole skulls and fragments. It would remain amongst the most sizeable until Samuel Morton began collecting in earnest some three decades later.

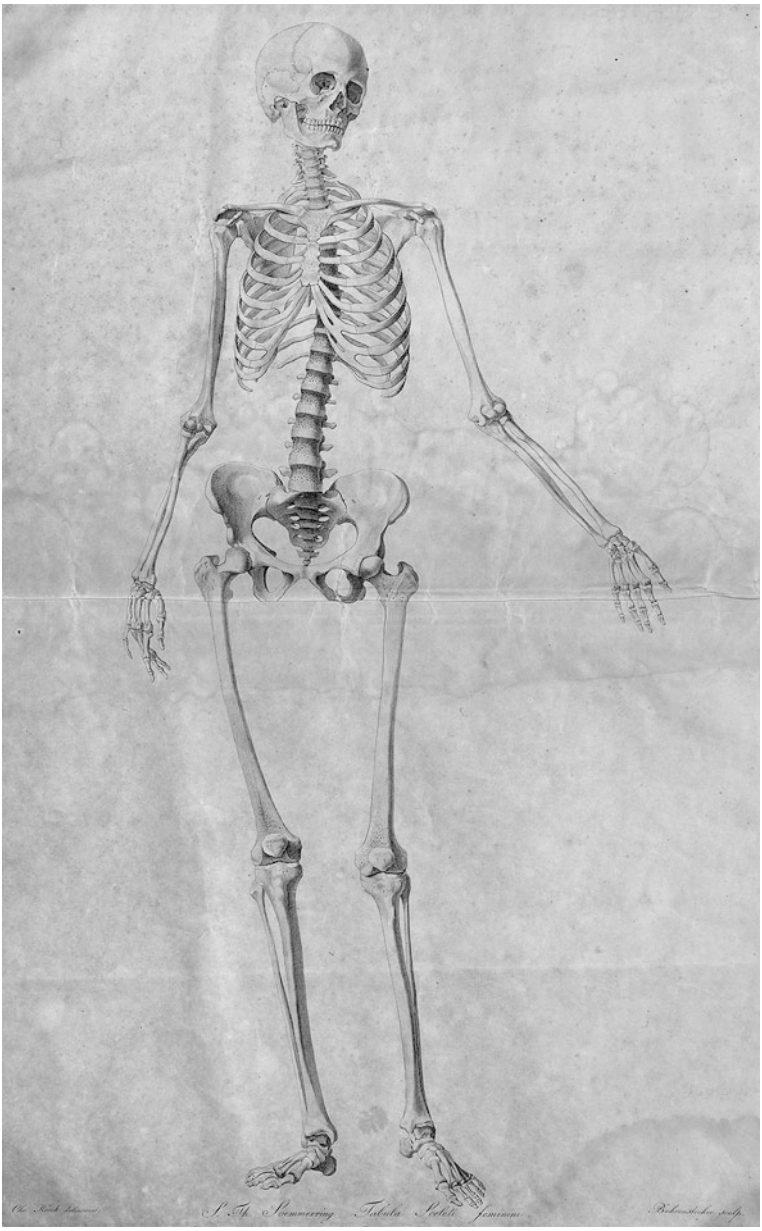

Fig. 2.1 *Tabula sceleti feminine*, Samuel Thomas von Sömmerring. Reproduced with permission of Bayerische Staatsbibliothek München, 2 Anat. 100 f, p. 9, urn:nbn:de:bvb:12-bsb00050911-2

As collections grew and became more demographically varied, comparative study became easier to undertake. Nevertheless, physicians continued to receive biographical information about collected crania well into the nineteenth century. Morton, for instance, began actively soliciting colleagues for remains in 1830 and continued to do so until his death in 1851; at this time his collection totaled 967 (see Chap. 5). Archival documentation indicates that individuals who answered his requests sent along information about decedents' ages, races, nationalities, social ranks, and/or sexes (Geller 2015). Knowledge of specimens' life histories allowed researchers to then narrate death histories that reifed many of their a priori ideas about socio-sexual lives. Morton (1839, 1849) assessed cranial capacity—so it went, the more voluminous the more intelligent—to hierarchically rank the races in his collection, for example.

The increasing fragmentation, measurement, and statistical assessment of the body signaled the inception and concretization of bio-power. The concept is one Foucault (1978, 2003) has invoked to explain the development of techniques for supervising and regulating bodies. Biomedicine's emergence signals the normalization of certain "techniques" in institutional settings like the hospital clinic, mental asylum, medical school, and scientific laboratory. All physicians received formalized training, experienced theatrical-like dissection, and learned from textbooks possessing depictions and descriptions of the ideal body. As an outcome they were granted "the right to make live" (Foucault 2003: 240). While the financial cost of medical school was a given—books, tuition, and room and board could be cost prohibitive for most—the human cost went unacknowledged. Medical schools' anatomical collections, for instance, grew as a consequence of colonial necropower. Thus, physicians were also implicated in "letting die." Certain lives, Foucault explained (2003: 247) are worth enhancing, proliferating, prolonging, while others must be eradicated or transformed beyond recognition.

Achille Mbembe's (2003) thoughtful treatment on death-making projects extends Foucault's focus on the technologies of life. Necropower, he has explained, is sovereignty's destruction of human bodies and populations, while necropolitics refers directly to the techniques used to destroy. Hence, physicians may have amassed skeletal remains in the name of scientific inquiry, but their efforts were made possible by violent military and exploitative economic encounters. It was only after death that decedents included in collections acquired a sort of social worth. Mbembe (2003: 18) describes this process as "the becoming-object of the human being"—the somewhat counterintuitive notion that in being transformed from a human subject to an investigative object, one can acquire a modicum of value.

Blumenbach, for instance, acquired "his" skulls as a consequence of imperial interventions in far flung places. The difficulty of doing so, he (1865 [1806]: 299) remarked in *Contributions to Natural History*, is "not insuperable when the collector shows zeal and perseverance and can obtain the active co-operation of men who have opportunities of helping him in his object." His anthropological study of crania proved justification enough, in his mind, for their unceremonious acquisition from foreign nations. The Georgian skull, though exemplary "for the extreme

elegance of its shape" (Blumenbach 1865 [1795]: 162), was no different. The young female to which it had originally belonged, was a victim of Russia's war with Turkey. In captivity, she had been transported to Moscow. Her premature death was followed by scientific dissection, and in due time, Blumenbach received her preserved skull. Its beauty and symmetry, he noted in *On the Natural Variety of Mankind*, contrasted with his Ethiopian, Malay, American, and Mongolian specimens—all of whom were acquired in equally insidious ways (Blumenbach 1865 [1795]: 237).

The cranium, however, was not the only body part physicians assessed for information about racial differences. The pelvis was a much sought after skeletal element for inclusion in anatomical collections (e.g., Monro 1825; Vrolik 1826; Weber 1830). For instance, in the medical textbook Alexander Monro *tertius* authored, he stated that female pelves were larger in all dimensions but height, while the diameter of Europeans' pelves exceeded that of Australasians, Negroes, and Negresses (Monro 1825: 81–85). The sweeping statements were based on measurements taken from a total of eight pelves. Perhaps more important than his scientific observations, however, was the influence Monro wielded. He was a professor of anatomy at the University of Edinburgh's medical school—his father and grandfather, who were also named Alexander Monro, had previously held the position. Granted, many attested to his utter lack of charisma in the lecture hall. Of Monro's teaching, Charles Darwin remarked that he "made his lectures on human anatomy as dull as he was himself," a sentiment that Robert Knox echoed (Bates 2010: 25). Regardless, his teachings about pelves' racial differences did not fall on deaf ears. Darwin and Knox counted amongst Monro's students as did Samuel Morton, Thomas Hodgkin, and countless others.

In an age of colonial enterprise and rigid dimorphism, nineteenth century anatomical texts did little to uncouple race and sex. That they did not is also informative about (hetero)normative representations of European sexuality as procreative, monogamous, and hidden. People of color, in contrast to their white counterparts, were considered promiscuous and public when it came to sexual activities (Fausto-Sterling 1995; Schiebinger 1993). While genitalia were scrutinized when available—were women of color comparable to female apes or Europeans?—anatomical collections were poor in pelves, a consequence of preservation as much as research foci. And physicians who had scrutinized the pelvis largely concentrated on female examples. Later analysts would lament the paucity of male pelves, for their fixed attributes and discernible differences were far more useful in developing racial classificatory schemas (e.g., Matthews et al. 1893; Turner 1885)

2.5 The Sexualized Skull

While few physicians disputed that skulls could be categorized by their racial differences, many conceded that sexing the cranium was more difficult. Female skulls were deemed lighter, smaller, smoother, and thinner. "The superciliary ridges

do not form so prominent a feature of the female skull," Monro (1825: 197) clarified, "and, according to some authors, the sagittal suture is more frequently continued down to the root of the nose." He went on to state, citing Soemmerring in support, that a fetus's cranium possessed sexual markers of difference (Monro 1825: 197). In a coeval and widely read text, however, Quain (1828) had nothing to say on the subject of sexing skulls. He instead stressed the pelvis's sexual dimorphism. Not until the anatomical text's seventh edition did he include a brief, if not dismissive, statement. "The female skull resembles the formed skull of the boy more than that of the adult male; but it must also be admitted that it is often impossible to determine the sex by the appearance or form of a skull," he advised (Quain 1867: 72).

Other researchers explained that the measurable imprint race made on crania complicated sex determination. European skulls were highly dimorphic, but the sexual differences of other races were harder to distinguish. According to Carl Vogt (1864: 9), a German naturalist who was also trained as a physician:

> In the more civilised races the difference is as great as between the skulls of the same sex in different races; and, as there is but little difference in this respect in the Negro and other inferior races the determination of the sex becomes more uncertain as we approach the inferior races of humanity.

Vogt's statements confirm methodological and theoretical shifts by the mid-nineteenth century. Scientists were less concerned with cranium's morphology and more with its measurement. Comparative study of facial angles and cranial capacity, a marker of intelligence or so it was believed, provided empirical evidence of a social hierarchy. White women were on (sub)par with inferior races, the skulls of non-white males signaled their feminized condition. Smaller skulls, whether a consequence of sex or race (or both), also indicated an arrested stage of intellectual development. "We may, therefore, say that the type of the female skull approaches, in many respects, that of the infant, and in a still greater degree that of the lower races" (Vogt 1864: 81). Several of his contemporaries repeated similar notions about infantilization (e.g., Ecker 1868: 355; Welcker 1862). Their conclusions left women of color at the greatest intellectual disadvantage.

Given the infrequency with which contemporary anthropologists speak his name, history has not been as kind to the memory of Vogt as were those colleagues who dubbed him "the Darwin of Germany" (Vogt 1864: 177). Yet, his statements about racial differences, sexual dimorphism, and social significance articulate mainstream ideas that even Darwin cited. Darwin's treatment of dimorphism is instructive. He does not include the term in the first three editions of *On The Origin of Species* (1866). But, in the book's fourth edition (there were six in total), Darwin addresses the phenomenon of dimorphism *and* trimorphism. "I refer to the two or three distinct forms," Darwin (1866: 50) observes, "which certain animals of either sex, and certain hermaphrodite plants, habitually present." His extended study of hermaphroditic barnacles was empirical proof (1851, 1854), though he does not acknowledge it as such for reasons I explain in Chap. 3. The possibility of such

variation in humans, however, was never even broached. Rather, as explained in *The Descent of Man, and Selection in Relation to Sex*, dimorphism is clear cut.

> Man on average is considerably taller, heavier, and stronger than woman, with square shoulders and more plainly-pronounced muscles. Owing to the relation which exists between muscular development and the projection of the brows, the superciliary ridge is generally more marked in man than in woman…His brain is absolutely larger, but whether or not proportionately to his larger body, has not, I believe, been fully ascertained. In woman the face is rounder; the jaws and the base of the skull smaller…and her pelvis is broader than in man…and in the formation of her skull is said to be intermediate between the child and the man. (Darwin 1871: 316–317)

Darwin's statements reiterate received wisdom about robusticity and gracility, pelvic features, and cranial development. And in support, he drew from the anthropological sources then in vogue. Vogt's (1864) *Lectures on Man* featured prominently in citational footnotes. To explicitly acknowledge human's trimorphism perhaps would have complicated social evolutionary ideas about labor's division—female reproducer and male producer—that relied on sexual dimorphism as absolute and rigid.

As I discuss further in Chap. 5, women were thought separate and unequal, a natural outcome of civilization's advancement. (Even their pelves provided unreliable measurements about racial differences!) This biologically deterministic coat-tails theory of human evolution, "the equal transmission of characters" according to Darwin (1871: 313), in turn justified paternalism and discriminatory treatment of women. As evidence, we may look to the English language version of *Lectures on Man*. In the his introduction to this text, Vogt's editor James Hunt harrumphed about admittance of the "fair sex" to the Ethnological Society of London. But, even prior to this, Hunt had grown disgruntled with the society's monogenist position on race. In defense of polygenism, he and defectors established the Anthropological Society in 1863 (Stocking 1987). The society's ire clearly extended to their rival's intellectual and political take on sex (or rather gender), as well. "Even now," Hunt proclaimed about women's entrance to the society, "the advocates of this measure do not admit their error" (Vogt 1864: viii). Concomitant sociopolitical events, namely the fomentation of suffrage movements in the U.K. and U.S., heralded a change in thinking about women's roles and intellectual capabilities. But, their membership and entrance into learned halls presented no uncertain challenge to many white men and the scientific studies they conducted.

During this time, dimorphism signaled not just a division of gendered identities but also sexual interactions. Medical practitioners' invention of "homosexuality" and "heterosexuality," both of which referred originally to non-reproductive and abnormal sexual relations, heralded a paradigm shift in understandings of sexuality (Chauncey 1982; Foucault 1978; Katz 1995; Terry 1995).[3] Social Darwinian ideas were implicit inasmuch as homosexuality signaled constitutional weaknesses,

[3]These terms first appear in a correspondence that German writer Karl Maria Kertbeny sent to theorist and defender of same-sex relations Karl Heinrich Ulrichs; the letter was dated 6 May 1868 (Katz 1995: 52).

sexual inversion (i.e., effeminate men, masculine women), and/or arrested development, all of which medical practitioner presented as pathological response to modernity and feminism (Terry 1995). Prior to the mid-nineteenth century, Western society may have socially prohibited and juridically punished certain intimate arrangements, but acts and anatomy did not an individual's identity make (Foucault 1978). Thus, sexuality came to signify a social identity. While all sexual inverts were scrutinized, scientists found certain types less troublesome given their adherence to traditional gender norms. As Chauncey (1982: 125) relates, "Many nineteenth-century doctors considered the truly serious offense to be the invert's assumption of the opposite gender role rather than either her or her 'wife's' homosexual object choice."

Sexual deviance like gender identity, scientists argued, was embodied. Hence, it could be isolated, classified, and analyzed. The anthropometric techniques used to categorize racialized and sexed bodies were adapted to document homosexual individuals' physical distinctiveness and natural proclivities (Somerville 1994; Terry 1995, 1999). Unsurprisingly, anthropologists were called on to lend their expert knowledge. Come the late-1930s, for instance, physical anthropologist Earnest Hooton joined psychiatrists, gynecologists, etc. to form the Committee for the Study of Sex Variants (Terry 1999: 188). From 1935 to 1941, the committee intensively investigated New York's growing homosexual population (and problem in their estimation). As Terry (1999: 196) describes, "Subjects were given a series of general physical exams and tests, including skeletal x-rays, pelvic and physique measurements, metabolism tests, and hormonal assays." These tests were complemented by genital examinations, psychiatric interviews, and a masculinity/femininity test. Granted, skeletal evidence may have proved inconclusive, but bodies continued to be probed intensely. In their conclusions, and comparable to those drawn about women and non-whites, scientists deemed the bodies of homosexuals pathological while psychiatrists characterized their minds as psychologically deviant and morally destitute.

The legacy of sexuality's biologization is evident in late-twentieth century scientific work on brains and genes. In the early 1990s, neuroanatomist Simon LeVay (1991, 1993) examined heterosexual and homosexual brains, arguing that the latter resembled those belonging to women. The shortcomings with his research, however, are numerous: conflation of gender and sexuality; uncertainty about brain structure as a cause or effect of life experiences; decedents' unverified sexual acts and self-identification while alive; morphological confounders like disease history—the majority of homosexual men died from AIDS; and an insufficient sample size (i.e., 19 homosexual men, 16 "presumed heterosexual" men, and 6 "presumed heterosexual" women). Around the same time, federally funded geneticists led by Dean Hamer claimed that they had isolated a gene for male homosexuality on the Xq28 stretch of the X chromosome (e.g., Hamer and Copeland 1994; Hamer et al. 1993), or the "gay gene" as dubbed by the media. Subsequent studies were unable to replicate these findings, however (e.g., Rice et al. 1999). And in the new millennia, researchers continue to pursue genetic studies of sexuality with federal funding but little regard for queer studies or epigenetics complications (e.g., Sanders et al. 2015).

Nor have they branched out from a concern with same-sex relations between males, suggesting that sexism and heterosexism inform research questions and conclusions to an unsubtle degree.

2.6 The Racialized Pelvis

Long prior to the sexual brains or gay gene, there was the racialized pelvis. Skeletal analysts' shift from cranium back to pelvis in sex determinations is both cause and effect of a discipline coming into its own. Nineteenth century physicians often received crania and only crania from eager allies in distant locales. As they moved out of the armchair and into the field, anthropologists in the early twentieth century found themselves involved in the dirty work of archaeological excavation and forensic analysis. For those who concentrated on human remains, M.D. usually followed their surnames (see Buikstra 2006a: 9–10). Amongst the individuals who accompanied Clarence Moore on expeditions, for instance, was project anatomist Dr. Milo Miller. Seeing that taphonomic factors in the southeastern U.S. often made for poor preservation of skeletal remains, his presence was a boon. Yet, it does not seem to have been a disciplinary norm. Rather, archaeologists generally excavated burials and then transported a selection of their contents to analysts' laboratories. Even a large portion of the skeletal remains excavated by Miller were hastily examined before being discarded, reburied, or circulated among locals. Based on his assessment of the humerus, he sexed decedents as male, female, or uncertain (e.g., Moore 1894). Select elements—well-preserved examples illustrating racial, developmental, and sexual norms—were then sent to Ales Hrdlička for more intensive analysis (Aten and Milanich 2003: 130).

Despite these changes, the first half of the twentieth century saw the continuation of debates, investigative foci, and theoretical underpinnings. Bodies were still rigidly dimorphic. Facial angle and cranial capacity were still measured routinely. Researchers still quibbled about the age at which skeletal remains could be sexed. Determination of sex followed from analysis of individual parts and not whole bodies, though analysts did debate about which of the former yielded more accurate assessments. Remarked British physician Arthur Luff (1895: 80) in *Textbook of Forensic Medicine and Toxicology*, "The examination of the pelvis, however, furnishes the most satisfactory method for the determination of sex in an adult skeleton." Yet, and certainly more influential in anthropology, Hrdlička's (1920: 94) handbook *Anthropometry* suggested otherwise: "The most important skeletal parts for sexual identification aside from the skull are, however, the pelvis, the long bones, and the larger of the remaining parts." Subsequent skeletal analysts persisted in their scrutiny of the human body for ever more nuanced insights about sexual dimorphism—articular surfaces of long bones (Dwight 1905), ossification centers in sub-adults (Pryor 1923), vertebral anomalies (Stewart 1932), femoral dimensions and indices (Hrdlička 1938). And they continued to convey commonsensical presumption about socio-sexual lives in their studies. To sex the scapula, for instance,

Hrdlička (1920: 125) describes sex-specific forms. His conclusion…males had more, a consequence of different and numerous muscular activities. Whether or not he is implying these differences are social or inherent, and he is not explicit, his reasoning is no less deterministic about the different muscular activities performed by men and women (i.e., a sexual division of labor).

To determine sex, anthropologists in the mid-twentieth century would call for quantification of the pelvis. In fleshy form, nineteenth century physicians had measured it—the obstetrical sub-specialty known as pelvimetry—for information about gynecological conditions (e.g., van Huevel 1840). Skeletonized, however, analysts assessed it for empirical evidence of racial differences (e.g., Garson 1881). William Turner (1885) modeled his pelvic typology after racial classifications of crania. He categorized specimens as dolichopellic, platypellic, mesatipellic (long, flat, and round in shape, respectively) based on his measurement of pelves' brim, or the pelvic index. Both European males and females, he claimed, were within the platypellic range. But, for other groups, sex confounded easy categorization. Rather than see that the larger classificatory schema as deficient, he took issue was the female pelvis. It displayed too much racial variability for his liking. "In the males," Turner (1885: 127) stated, "the form characteristic of the race is more fixed, and from their study it is, I think, possible to frame a classification of the pelvis." Typological obstacles surmounted, Turner's analysis proceeded. And from the empirical evidence, he (1885: 143) concluded that the pelvis "in those [non-European] races shows a more degraded character—a less departure from the usual mammalian form—than is the case in the Europeans." Hence, analysis of the racialized pelvis revealed that European men were the measure of all things. Turner's study was not without its shortcomings, critics pointed out. Physical anthropologists bemoaned the small size of pelvic samples in general, "absurdly so" in the words of Matthews et al. (1893: 220).

Archaeological excavations in the early twentieth century would gradually remedy this problem. But, researchers now had to sex the remains of individual for whom they had no background information. In the absence of methodological standards this was challenging to do, which may explain Hrdlička's zeal for crania. He did, however, acknowledge a complication. In *Anthropometry*, Hrdlička (1920: 91) writes, "In adults, the determination of sex, from the skull alone, while generally offering few difficulties to the well-trained observer, is not equally easy in all race's, or in all individuals." Similar to crania, racial differences made sex assignment of the pelvis no less transparent. Amending Turner's pelvic typology was one strategy. Caldwell and Moloy (1933), for instance, distinguished between gynecoid, android, anthropoid, and platypelloid, though their emphasis on birthing efficiency advanced the pelvis's racialization, as well

Into the second half of the twentieth century, physical anthropologists struggled with how to produce methodological standards that advanced the determination of sex without promoting the racist assumptions of seminal studies. Lucile Hoyme (1957: 545), for instance, championed quantification for sexing purposes *and* was well aware of the longstanding disciplinary fixation with race. Yet, she validated the pelvis's measurement as a viable research path for describing "differences in new

racial groups." Extrapolating initially from monkeys, Washburn (1948: 201) found that "the ischium-pubis index alone will sex over 90 % of skeletons, provided that they belong to one major racial group." The subtext of his conclusion—that admixture or human variation can challenge fixed and bounded racial categories—went unaddressed. A follow-up publication, however, suggests that he was quite aware of racial typologization's fallibility. In a 1949 study, Sherwood Washburn tested his method's accuracy by measuring the pelves of South Africans affiliated with the Bantu and Bushman tribes. In so doing, he acknowledged the significance of context—archaeologists had excavated the Bushman remains—and regional variations, or population-specific data. He then compared his findings to prior analyses of American Whites' and American Negroes' pelves. His conclusion, that differences exist between and within groups, was not necessarily a departure from earlier studies. But, the inferences he drew, or did not draw from data, are what set this study apart. Specifically, Washburn did not hierarchically rank racial groups or sexual differences. The ischium-pubic index is nearly identical for Bushman and American Whites, he found, and this fact was interesting so far as it helped establish methodological standards for sexing the *human* pelvis. What changes for Washburn, we need inquire?

The sociopolitical conditions that provide backdrop for physical anthropologists' work, I would argue, account for the ambivalence expressed in anthropometric studies at the twentieth century's midpoint. The recent events of World War II had clearly illustrated the genocidal outcome of racialized science. Given the sins of their intellectual forefathers, it is therefore fitting that physical anthropologists were amongst the first to disavow scientific studies that reified race (Montagu 1951, 1964, 1965; Washburn 1963).

Of course, it may be best to think of such scholarship as cancer in remission—a decrease or disappearance in signs and symptoms does not necessarily indicate complete eradication. The racialized pelvis is a chronic condition, recurring again and again in the corpus authored by contemporary obstetricians and forensic anthropologists. Their reasons for quantifying differences generally go no further than vague allusions to obstetrical dysfunction (e.g., Baragi et al. 2002; Hoyte et al. 2005; Marani and Koch 2014) or identification of unknown individuals in settings beset by high crime rates (e.g., Igbigbi and Nanono-Igbigbi 2003; Patriquin et al. 2002). In a popular textbook of obstetrics and gynecology, for instance, Enrico Marani and Wijnand Koch rationalize,

> Although [Professor William] Turner's study was done in light of the supremacy of the white and the MRI study for implications in obstetric practice, the same results are obtained 200 years later with the most sophisticated medical instrument. Therefore, *racial differences are present in the bony pelvis and are important in clinical observations*." (2014: 13, their emphasis)

The difference being that rather than the crude metric tools of yesteryear, modern researchers are equipped with high-tech apparatuses—magnetic resonance imaging is the new pelvimeter. Some may find it disquieting that two white European men continue to uncritically support pelvic typology without also considering the impact

that age, stature, diet, disease-load, or habitual activities may have on pelvic morphology. As numerous researchers have since pointed out, analyses of the pelvis have effectively demonstrated that it can change shape during an individual's life course (e.g., Abitbol 1996; Ridgeway et al. 2011; Walker 2005). Nevertheless, the racialized pelvis remains very much a biopolitical reality in the twenty-first century.

2.7 Bioarchaeology on Gender

2.7.1 Paradigm Shift

Physical anthropology's thinking on the subject of racial typology underwent a paradigm shift soon after Washburn's statements on the ischium-pubic index. Indeed, in his call for a "new" physical anthropology, Washburn (1951) first acquiesced that typological classification had created analytical stagnation within the sub-field. Racial types could not adequately explain the complexities of populations' interbreeding and migration. He instead emphasized the importance of understanding how evolutionary processes drove empirically observable and selectively advantageous adaptations. To this end, collaboration between the four-fields was needed, as were technical and theoretical changes (Washburn 1951: 298). This "new" vision for physical (or biological) anthropology synthesized evolutionary concepts, population genetics, systematics, paleontological finds, and primatological observation (Haraway 1991: 36).

Washburn's statement provided stimulus for formalization of bioarchaeology in the mid-1970s. Granted, there were important precursors that contextualized remains and sought to explore the complex intersection of biology, inheritance, and culture [e.g., social biology (Angel 1946); life history (Krogman 1935); osteobiography (Saul 1972)]. But, generally, archaeologists relegated physical anthropologists' assessment of human remains to the back of the book (Buikstra 1991). In the appendix of archaeological studies, they were more laundry list than thoughtful analysis. In response, Buikstra (1977: 69) suggested the following:

> A new form of regionally based, interdisciplinary research in mortuary site archeology and human osteology has been developed in the course of the present study. With the active participation of both archeologists and physical anthropologists in all phases of research design, members of our "bio-archeological" research group made the initial decision to focus upon the investigation of biocultural change within the Woodland period.

The beauty of Buikstra's proposed model was its application to skeletal samples from distinct cultural settings and historical periods. Emphasis on the biocultural, interdisciplinary, and contextual affirmed the value of American anthropology's four-field approach. Traces of its Boasian heritage—conjunctive study of physical bodies, genetic inheritance, and the effects of environment (i.e., culture)—are unmistakable, as well.

Today, the bioarchaeological corpus is substantial. Other scholars have offered detailed overviews of the sub-field's contributions, shifting methods, and theoretical frames (e.g., Agarwal and Glencross 2011; Buikstra and Beck 2006; Martin et al. 2013; Rakita 2014; Zuckerman and Armelagos 2011). The consensus is that since its inception, multiple approaches have developed concurrently. What we have today are bioarchaeologies, "differences in scope and emphasis…that should be considered a measure of the vitality within this developing field," as Buikstra (2006b: 248) has remarked more recently. Despite pluralism, however, there are still common concerns regardless of whether one's bioarchaeological leanings are scientific or humanistic (or both). The study of gender is one.

2.7.2 Semantics

Bioarchaeologists first made explicit statements about gender in 1998 (e.g., Armelagos 1998; Brown 1998; Konigsberg and Hens 1998; Walker and Cook 1998). All expressed a concern with semantics; sex was conceptually distinct from gender they stressed. Influential was Phillip Walker and Della Cook Collins's (1998) programmatic communication in the *Journal of Physical Anthropology*. They admonished biological anthropologists, chiefly bioarchaeologists and primatologists, for using sex ("biological identity") and gender ("social identity") interchangeably. When speaking of humans' social identities, conflation naturalized culture (though they did not word it in quite this way). And the use of gender in biological studies of nonhuman animals functioned to culturize the natural. The ubiquity of the "genderified" baboon in primatological discussions, for instance, struck Walker and Cook as odd. The repercussions, they predicted, would be several-fold—conceptual, disciplinary, pedagogical.

These insights were certainly valid, but they were a long time in coming. two decades prior, sociocultural anthropologists had first distinguished sex from gender (e.g., Ortner 1974; Ortner and Whitehead 1981; Rosaldo 1974) with archaeologists soon following suit (e.g., Conkey and Spector 1984; Conkey and Gero 1991). Since this time, scholars in these sub-fields have continued to advance feminist and queer studies with their considerations of sex, gender, and sexuality.

In contrast, the impetus for bioarchaeologists' interest in gender came not from feminism, but an emergent concern with the biocultural body (e.g., Goodman and Leatherman 1998). If researchers do cite feminists' ideas, the sources are usually quite dated ones. Few bioarchaeologists engage with recent feminist and queer writings on gender (e.g., Geller 2005, 2008, 2009; Gere 1999; Hager 1997; Hollimon 1997, 2000; Kakaliouras 2006; Perry and Joyce 2001; Perry and Potter 2006; Sofaer 2006; Worthman 1995). Hence, rather than undertaking the difficult conceptual work of reconciling biological data with often abstract social theorizing, which I do in the chapter that follows, many find it easier to concede that sex is not gender, and then sidestep the latter by laying investigative emphasis on the former. Other less productive responses include feigning ignorance entirely or deriding this

work as an unhappy outcome of anthropology's postmodern turn. Regardless, much more can be done to advance understanding of past cultures or knowledge production about biophysical evidence.

Programmatic statements may have tuned bioarchaeologists into gender's salience, but many still do not recognize some of the commonsensical thinking that inform their investigations. Less at issue for me is the designation of sex as a significant category of skeletal analysis. It is a quite useful for two reasons—one intended and obvious, the other more subtle. Determination of sex has the *potential* to yield important information about the culture under consideration. How are biological differences made meaningful within a specific social setting and historical circumstance? That is, many bioarchaeologists study sex for what it has to convey about gender in an ancient context. I stress "potential" because I think less obvious to bioarchaeologists is that their sexing of bodies is often more informative about contemporary conceptions of sex, gender, and sexuality. The shifting emphases placed on certain biophysical data suggest as much.

2.7.3 Sex and Gender

By the 1960s, researchers no longer questioned that the pelvis was the most sexually dimorphic element as a consequence of the mechanical effects of childbirth (e.g., Brothwell 1963; Krogman 1962; Montagu 1960; Phenice, 1969). Phenice's (1969) examination of three morphological features—the ventral arc, sub-pubic concavity, and medial aspect of the ischiopubic ramus—was especially edifying when preservation impeded metric analysis. Such remains the case today. Technological advances, "the new morphometry," have helped to fine-tune analysis of cranial sexual dimorphism (Konigsberg 2006: 275). But, osteological textbooks still stress pelvic analysis and instruct students in the Phenice method, as well as assessment of the greater sciatic notch and preauricular sulcus (Bass 1995; Buikstra and Ubelaker 1994; White et al. 2012). These diagnostic traits allow analysts to estimate sex along a continuum of difference: female, probable female, unknown or indeterminate sex, male, and probable male.

But, as I have discussed elsewhere, while a valid heuristic tool, this continuum communicates an analyst's degree of categorical certainty rather than attends to sexual variability or ambiguity (Geller 2005). The five categories appear disingenuous in light of Fausto-Sterling's (1993) identification of five sexes—male, female, and an additional three intersexes that she labels herm, merm, and ferm. "Indeed, I would argue further that sex is a vast, infinitely malleable continuum that defies the constraints of even five categories," she (1993: 21) avowed. More recently, she has augmented the linear continuum with a more layered understanding of sex as it pertains to fetal development. By birth, she explains, a baby has five layers of sex: chromosomal sex; differentiated fetal gonadal sex; fetal hormonal sex; fetal internal reproductive sex; and genital sex (Fausto-Sterling 2012: 3–5). This framework was first developed by John Money and colleagues in the

1950s. Their intent was to delineate inconsistencies between the layers in the case of individuals with intersex conditions.

Yet, dimorphism that is rigid and static remains the steadfast rule. So what are we to do with the exceptions, the 4 % of individuals whose atypical pelvic attributes make it difficult to estimate their sexes with any accuracy? As Meindl et al. (1985) have argued, morphological assessment of the pelvis is 96 % accurate. This is not to suggest that individuals with intersex conditions represent this small percentage of categorical exceptions. Rather, it is to say that indeterminate sex should not be the grounds for analytical dismissal. And in the case of individuals whose skeletal systems have yet to develop the traits diagnostic of sexual difference, researchers remain hopeful that technological advancement will rectify their unknown status in the future. The motivations for or implications of doing so—why do we need to sex infants, for instance?—remain largely uninterrogated, however. This specific issue is treated more fully in Chap. 7.

These concerns hint at the incontrovertible and often unconscious link that many analysts of bodies draw between sex and gender. As Dana Walrath has noted, in turning from racial typology to sexual dimorphism as functional adaptation, researchers' pelvic data are no less laden with social meanings. Of paleoanthropologists' writing, she (2003: 7) remarks,

> The locomotor efficiency of the male pelvis is emphasized in this discourse. By contrast, the inferior social position of women may be reflected in the depiction of the adaptive compromise between the requirements of childbearing and bipedalism. Rather than emphasizing the successful reconciliation of two competing biological requirements, this discourse emphasizes the inefficiency of the female stride and the inevitable obstetric dilemma.

That humans' pelvic dimorphism is represented as a defining attribute of *Homo*'s evolution is not necessarily the issue. Rather, the concern is how analysts define human nature as it relates to sex, gender, and sexuality. Males' pelves, it would appear, portend freedom in motion and occupation, while females are restricted biologically and spatially by reproductive imperative. To clarify, researchers are not examining female pelves for information about parity status. Of course, the feasibility of such an assessment is debated (Ubelaker and De La Paz 2012), but such uncertainty does not appear to be the reason the subject is not broached. Rather, I would argue, analysts do not address parity status because they already have presumptions in place about women, work, and bodies. Having a pelvis with female morphological attributes seems to be evidence enough of compulsory reproduction.

From sexual differences then develop the supposedly natural state of sociosexual institutions, identities, interactions, and bodies. Nevertheless, excluding instances of semantic confusion (which vexingly, from my viewpoint, continue to occur), gender is a concept that few paleoanthropologists have tackled explicitly in their studies (though see contributions in Hager 1997). For bioarchaeologists who examine human remains from more recent (pre)historic periods, however, gender is a topic of increasing concern. Because all bioarchaeologists sex bodies, it is likely that even those who claim not to be saying anything about gender are. That is, even

if they are not conveying information about the ancient lives they study than they are advancing ideas about contemporary socio-sexual arrangements and interactions. Bodies are rigidly dimorphic. Sexual differences are fixed and determine social outcomes. The biophysical evidence that has always mattered is reduced to reproductive abilities. And yet, what if the body of data had the capacity to challenge what we claim about sex?

2.8 Sex Is Genetics

Morphometric data gleaned from pelves are so last century. To investigate sex in the past, bioarchaeologists now turn to the tools of the future. Technoscientific advances like genetic testing have granted access to and knowledge about the human body at the micro-scale (Chap. 7). Ancient DNA (aDNA) analysis, many proclaim, promises to objectively sex our poorly preserved, our analytically indeterminate, and our prepubertal. It has the potential to more accurately reveal the "truth" in the matter. But do new ways of doing yield new ways of thinking about sexual differences?

Biomedical researcher Nettie M. Stevens first documented chromosomal sex differences in 1905 (Brush 1978; Ogilvie and Choquette 1981). In her study, she examined five distinct species of insects. The chromosomes of *Sagitta bipunctata*, an arrow worm, were far less interesting to Stevens. The species' hermaphroditism made it unnecessary to distinguish males from females. *Tenebrio molito* in its common meal worm form, on the other hand, was particularly exciting. "In both somatic and germ cells of the two sexes there is a difference not in the number of chromatin elements, but in the size of one, which is very small in the male and of the same size as the other 19 in the female," concluded Stevens (1905: 18). And lest we think that Stevens' discovery of chromosomal sex differences was celebrated, credit for this contribution to science is often wholly or equally attributed to Edmund B. Wilson, who made a similar finding on the heels of Stevens's publication. The irony that sexism has influenced the making of sex is worth noting for it underlines that Stevens' experiences are not idiosyncratic in the history of science.

Collectively, Stevens's and Wilson's observations set the basis for the XX/XY model that scientists later developed in their studies of humans. Theophilus Painter (1923, 1924) was amongst the most influential if not the most misleading in his suggestion that humans possessed 48 chromosomes. Subsequent studies reiterated this claim until such received wisdom was debunked when Joe Hin Tjio and Albert Levan (1956) verified the presence of 46 chromosomes. That researchers still saw race as a potential confounder in early work was indicated by Painter's (1923) comparison of white and black men's spermatogonia, undifferentiated male germ cells, as well as Kan Oguma's (1930) argument that the size of X chromosomes

varied according to nationality. "In the Japanese," wrote Oguma (1930: 205) who was himself Japanese, "it is the largest chromosome in any one garniture; in Belgian material it is the second largest or, sometimes, smaller." It is unclear just what a larger size signified to Oguma, but perhaps bigger suggested more effective evolutionary adaptation.

In short order, deviations from dimorphism were made visible by genetic testing. Researchers determined that Turner's syndrome (45, X) involved monosomy of the X chromosome in anatomical females (Ford et al. 1959). "Apparent" males with XXY and a chromosomal count of 47 suffered from Klinefelter's syndrome (Jacobs and Strong 1959). And though the individual with Triple X syndrome (47, XXX) was described as a "super female," her underdeveloped genitals and irregular physiological processes suggested she was anything but to scientists (Jacobs et al. 1959). The age of gonads was giving way to one of chromosomes. Since these findings, researchers have documented an array of chromosomal combinations that fall under the umbrella of intersex conditions—XYY, XXXY, XXXXY, XY females (e.g., 5-alpha-reductase deficiency, androgen insensitivity syndrome), and XX males (e.g., congenital adrenal hyperplasia). Individuals with intersex conditions, whether verified by genetic testing or clinical assessment, represent about 2 % of all live births, or 1 in 1500–2000 live births (Blackless et al. 2000; Fausto-Sterling 2000a, b). Critics have countered that the figures on intersex conditions are too high, and the definition too loose. Leonard Sax (2002: 174), for instance, claims that only conditions observable to the clinician qualify, that is when "chromosomal sex is inconsistent with phenotypic sex." According to this definition intersex conditions represent .018 % of live births. Regardless of their prevalence, however, they are a biophysical reality, more so than the aforementioned gene for homosexuality that scientists claimed was on the Xq28 stretch of the X chromosome (e.g., Hamer and Copeland 1994; Hamer et al. 1993). Molecular scientists *might* have categorized evidence of intersex conditions as trimorphism (or tetra-, penta-, hexa-, hepta-, etc.) had Darwin deemed the concept applicable to humans. Yet, their designation of individuals with intersex conditions as abnormal indicates that dimorphism remains the ideal. Discordance between genotype and phenotype troubles researchers' normative understanding of reproduction, gendered behaviors, and sexual predilections.

As a subset of genetic testing, biomolecular archaeology examines ancient remains for information about an individual's chromosomal sex. "At the simplest level, that of the individual," Frederika Kaestle and K. Ann Horsburgh (2002: 96) have written, "aDNA studies allows [sic] us to determine the sex of an individual using markers on the X and Y chromosomes." Genetic testing is particularly useful for circumventing poor preservation or sexual immaturity (e.g., Brown and Brown 2011: 151–167; Cappellini et al. 2004; de la Cruz et al. 2008; Faerman et al. 1998; Matheson and Loy 2001; Mays and Faerman 2001; Mohandesan et al. 2004; Stone et al. 1996; Vaňharová and Drozdová 2008). Yet, many researchers continue to conflate the biological and social in their publications. The use of genetics to establish identity appears as a foregone and fairly unproblematic conclusion. Genetic testing produces gender identities that are represented not just as

dichotomous, but also deterministic and universal. One becomes the sum of chromosomal parts, a process known as geneticization (see Chap. 7).

Some biomolecular archaeologists, however, are increasingly aware that sex is not gender. Terence Brown and Keri Brown (2011: 153) are quite adamant on this point in the introductory textbook they have authored. For them, gender is a cultural construct informed by discernible biological differences. Sex, on the other hand, *is* genetics. They echo Kaestle and Horsburgh's statement in their textbook *Biomolecular Archaeology: An Introduction*: "Sex is a biological characteristic determined by the functioning of various genes, many but not all located on the X and Y chromosomes" (Brown and Brown 2011: 153). Perhaps this is the reason Brown and Brown (2011: 153) also attend to intersex conditions (see also Brown 1998). Intersex conditions are sometimes not visible to the naked eye. Rather, they are verified with molecular testing. But, while these observations about sex and intersex conditions are not wrong technically, they do require more thoughtful treatment, especially in an introductory textbook that may be the first exposure students have to biomolecular archaeology. Dreger (1998: 4), who has written extensively on the subject of intersex, remarks,

> We live in an age of genetics and oversimplified stereotypes about the nature of males and females…Although it is true that a very small percentage of the people not easily sorted into [gonadal] male or female have been shown to have chromosomal patterns that differ from the common XX and XY varieties, the majority do appear…to have the standard male or female "sex chromosome" pattern. (I place "sex chromosome" in quotation marks because the term is an unfortunate misnomer;…genes related to traits we consider non-sexual are also located on X chromosomes, and genes located on chromosomes besides the X and Y chromosomes contribute to sexual development. We would do better to call these X and Y chromosomes instead of "sex chromosomes.")

Her statements reiterate an important point about the analysis of chromosomes to determine intersex specifically and sex in general. The relationship between phenotype and genotype is not straightforward, and XX and XY do not adequately capture the range of humans' differences with regard to morphology, fertility, or ability.

Skeletal traces of intersex conditions (i.e., shorter stature, spine curvature) are subtle, and identification of genetic variance does invites bioarchaeologists to reflect on the biological fact of tri-, tetra-, penta-, hexa-, heptamorphism, etc. From these data, researchers may then draw inferences about cultural significance within a given context. In so doing, they can move beyond conceptualizing past people as monoliths (i.e., Man, Woman). But, and not to discount its methodological value, aDNA analysis is a modern way to make sex. As such, it must be situated within the trajectory of historical methods for determining sex. A shifting elemental focus—from skull to pelvis to chromosome—speaks to culturalization of the natural. And if there is any lesson to learn from the preceding discussion of pelvimetry, it is that aDNA testing may very well be negated by technoscientific advances in the future. Sex then is genetics…in contemporary Western society. The relevance of chromosomal evidence in ancient contexts requires reflection, however, for its

significance and phenotypical observability cannot be assumed. Framing intersex conditions as genetically pathological, for instance, is a presentist position that is neither universal nor longstanding (Dreger 1998; Fausto-Sterling 2000b).

2.9 Postlude

I began this chapter by thinking about the fate of Vienna's dead. The celebrated and stigmatized were useful for underscoring how politics, ethics, and epistemology all come to bear on scientific objectivity. All three deserve greater attention in bioarchaeologists' future discussions. The literature on ethics, for instance, is only just beginning to extend beyond reactive positions to NAGPRA—to deliberate about collaboration with local communities and colleagues in host countries, destructive analyses, museum curation, pedagogy, and interpersonal or structural violences (e.g., Alfonso and Powell 2007; Geller and Suri 2014; Larsen and Walker 2005; Martin et al. 2013; Turner and Andrushko 2011; Walker 2000; Zuckerman et al. 2014).

For my part, and the thread of ethics is again taken up in my final chapter, here I have tracked biophysical evidence of sex differences, the methods utilized, and the meanings inferred. If anything, this history of sex determination—with its necropoliticized anatomical collections, sexualized skulls, racialized pelves, genderified baboons, geneticized genders—debunks claims about science's unfailing objectivity. Elsewhere I have remarked that there has always been sex in bioarchaeology (Geller 2008). In light of this history, I might amend the statement to include gender and sexuality. That is, the contemporary Western way of making sex with an emphasis on rigid dimorphism, fixity throughout a life course, and reproductive imperative conveys heteronormative ideas about gender roles, as well as compulsory procreation and heterosexuality. People make the system that categorizes bodies, Fausto-Sterling (2000b: 287) reminds us, "and a system of just two bodies is not the only possible system." Thus, sex is a construct rooted epistemologically in enlightenment thought. In this regard, it is analogous to race. Yet, and to be clear, to characterize sex as constructed is not to divorce it from biophysical evidence. Its grounding in the human body means it is constrained in important ways by the limits of plasticity and inheritance.

As my aim was to present a historiography in this chapter, I have not dwelled overly long on current bioarchaeological studies of socio-sexual lives. The chapters that follows do discuss publications pertinent to intimate arrangements (Chap. 4), sexual division of labor (Chap. 5), reproductive management (Chap. 6), and geneticization of gender (Chap. 7). But, one significant shortcoming in bioarchaeology that I mentioned here is a tentative and sometimes superficial engagement with feminist and queer scholarship. As a consequence, bioarchaeologists continue to communicate historic common sense about bodily difference, gender

identities, and sexual interactions. Were they to draw from feminist and queer writings more deeply, as I discuss in the next chapter, data collected from archaeologically contextualized human remains would demand they attend to diversity beyond dichotomy and the complexities of intersectionality.

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Chapter 3
Common Sense and Queer Matter

3.1 Introduction

> The starting point of critical elaboration is the consciousness of what one really is, and is 'knowing thyself' as a product of the historical process to date which has deposited in you an infinity of traces, without leaving an inventory.
>
> — Antonio Gramsci, *The Prison Notebooks*

The study of barnacles would occupy much of Charles Darwin's time from 1846 to 1854. His grappling with these creatures may also explain why the naturalist's better known treatise on the evolutionary origin of species did not see publication until 1859. Certain species' hermaphroditism and variable sexual relations were quite perplexing for the naturalist. For this reason, barnacles invite us to think about the constitution of common sense and queer matter.

I turn to writers who see common sense as a cultural system in need of critical attention. In particular, Antonio Gramsci's conception of common sense as conformist but capable of being transformed is significant. His project, I argue, is amenable to feminist and queer scholars' interrogation of the concepts sex, gender, and sexuality. Rather than catalogue their writings, however, I highlight key concepts and themes that may be useful to investigators who take biophysical evidence as an essential data point. I find the subset of feminist and queer scholars advocating for material-discursive practices especially stimulating. Their work is indicative of a history of internal critiques, which has proven intellectually and politically productive.

Though few if any of these scholars have engaged with the bioarchaeological corpus, I believe that the study of archaeologically contextualized human remains has much to contribute to their efforts. Bioarchaeologists' expansive time frames offer a more detailed (pre)history of the present. Additionally, their study of cultural cases with sex/gender systems distinct from the one active in contemporary Western society testifies to myriad ways of existing and knowing. Yet, as osteoporosis illustrates, an example I present at the chapter's end, such work cannot be enacted

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effectively unless bioarchaeologists come to regard the body as intergenerational, plastic, biocultural, and lived-in.

3.2 Hermaphroditic Barnacles

"Truly the schemes and wonders of nature are illimitable," wrote Charles Darwin to Charles Lyell early in September 1849. The improbable prompt for so poetic a comment was the naturalist's ongoing study of Cirripedia, or barnacles. His monographs on these creatures—two volumes on living species and two on extinct, fossilized ones—attest to his painstaking dissection, microscopic examination, careful taxonomic classification, and slight obsession (Darwin 1851, 1854). Hermaphroditism, Darwin discovered, was quite distinctive amongst this subclass of crustaceans. (Don't let their shell-like coverings fool you into thinking they are mollusks). Their reluctance to self-fertilize coupled with their sessile natures explained why the cirripede's penis was "long, articulated, and capable of varied movements" (Darwin 1851: 202). The observation makes one wonder what qualified as appropriate dinner conversation at Down House.

And yet, ambivalence also seemed to temper Darwin's fascination. "Hunter shows almost all animals subject to Hermaphroditism," he inked in his notebooks (Darwin 2002 [1838]: 158). The naturalist was referring to John Hunter's discourse on animals possessing both male and female parts. In the piece, Hunter (1779: 280–281) identified two types: "the natural, and the unnatural uncommon or monstrous," and he went on to explain that natural hermaphrodites belonged to "the inferior and more simple order of animals." His firsthand knowledge of hermaphroditic farm life was extensive. The Scottish surgeon was especially taken with free martins, a subject to which I return in Chap. 7. Having never encountered a human with hermaphroditism, however, he could only speculate. Darwin also remains silent on the subject of hermaphroditic humans. But, the links he drew between all animals should give us pause. On birds' behaviors he noted,

> It is very singular so many Gallinaceous birds have cock & hen plumage so different, yet the Cassowary & Guinea fowl cannot be distinguished. — A capon will sit upon eggs as well as & often better than a female. — this is full of interest, for it shows latent instincts even in brain of male. — Every animal surely is hermaphrodite — (as is seen in plumage of hybrid birds) (Darwin 2002 [1838]: 154).

The comment suggests that for the naturalist, hermaphroditism was both morphological and behavioral.

Cirripede's hermaphroditism, he opined in his publication, qualified as a natural fact albeit it a "peculiar" one (Darwin 1851: 201). As the physicist Silvan Schweber (1980: 240) has remarked, "Barnacles confronted him with the problem of how to formulate a universal explanation for the increase in diversity over time of *all* organic forms." This is not to suggest that humans and the crustaceans can be so easily equated, evolutionarily speaking. But, it is interesting that sociobiologists who often do apply understandings of non-human animals' reproductive behaviors

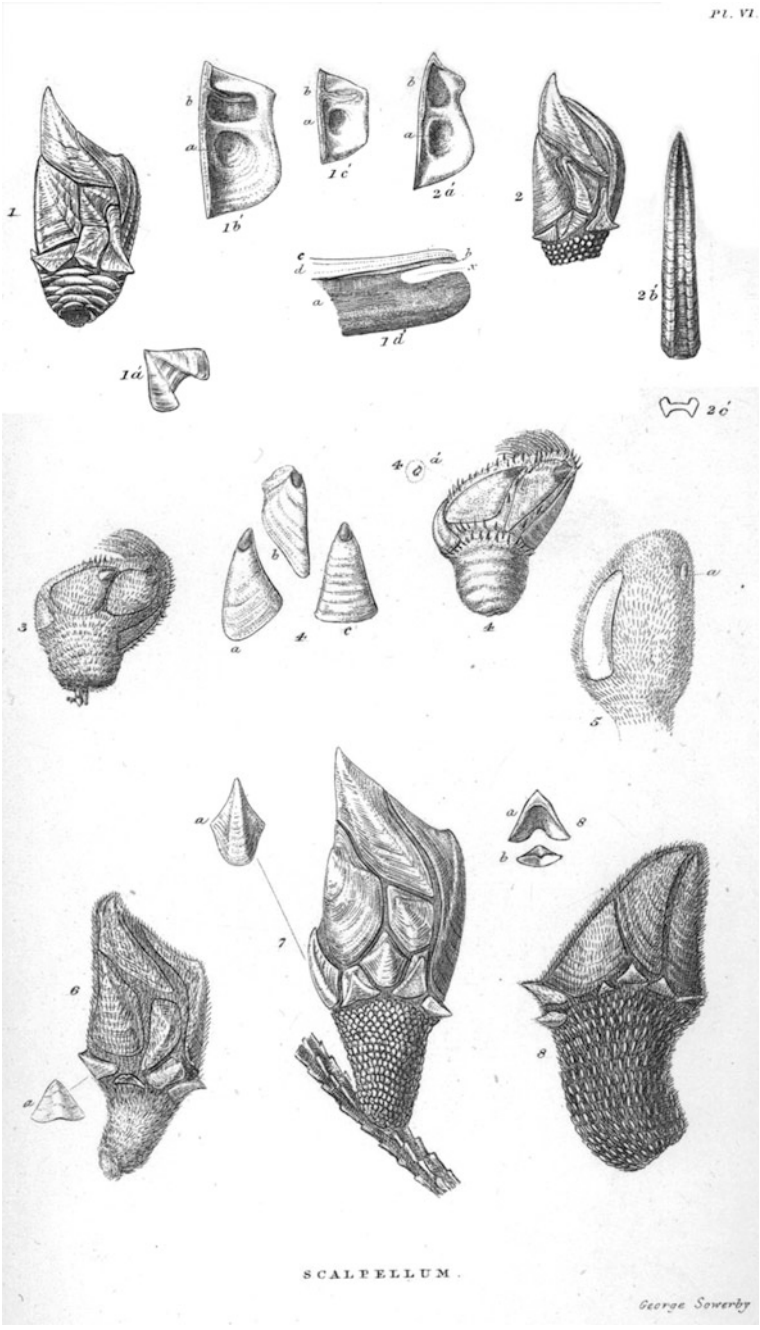

Fig. 3.1 Wood engravings in Charles Darwin's *Living Cirripedia* by G.B. Sowerby, Jr.: (a) Scalpellum (Plates V); and (b) Ibla : Scalpellum (Plate VI), male barnacles of *Ibla cumingii* and complemental males of *Scalpellum vulgare*, respectively. Reproduced with permission from John van Wyhe ed. 2002. The Complete Work of Charles Darwin Online (http://darwin-online.org.uk/)

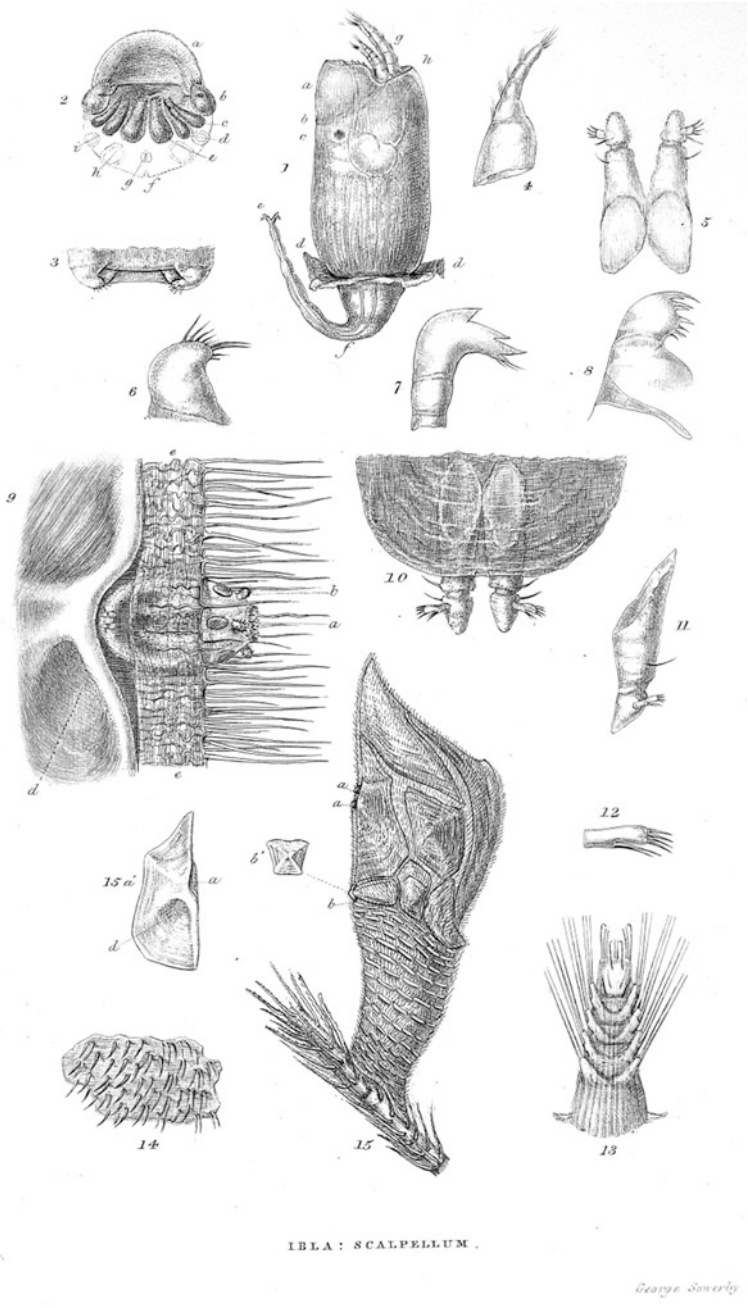

Fig. 3.1 (continued)

to humans' adaptations have not seen barnacles as an appropriate referent. Darwin's own ambivalence on the issue may be one reason. He did not seem to regard hermaphroditism as cirripedes' most interesting attribute. Rather, like Hunter, Darwin's research worked to tease out the dimorphism inherent in hermaphroditism. He uses the latter term synonymously with "bisexual." The naturalist explains in an 1848a letter to John Henslow:

> All the Cirripedia are bisexual, except one genus, & in this the female has the ordinary appearance, whereas the male has no one part of its body like the female & is microscopically minute; but here comes the odd fact, the male or sometimes two males, at the instant they cease being locomotive larvæ become parasitic within the sack of the female, & thus fixed & half embedded in the flesh of their wives they pass their whole lives & can never move again. Is it not strange that nature should have made this one genus unisexual, & yet have fixed the males on the outside of the females.[1]

Darwin is speaking specifically about the genus Scalpellum (Fig. 3.1). Though well-endowed, he found the minuteness, passivity, and dependency of males quite curious. Initially, he had thought the microscopic males unrelated parasites. But mistake rectified, Darwin was then presented with the taxonomic conundrum of males' variability. For classificatory purposes, females provided his point of reference. "It is the females in the above genera which retain the characters of the genus, family, and order to which they belong; the males often departing widely from the normal type" (Darwin 1854: 23). And barnacle "wives," a lovely example of nature's culturization, bore the burden of subsistence needs and reproductive success.

Barnacles' sizes, anatomical sex differences, and behaviors made for a diversity of sexual relations. For the genera Ibla and Scalpellum, Darwin documented four distinct types: (1) a female and parasitic male (or two); (2) a female with parasitic, "successive pairs of short-lived males"; (3) a hermaphrodite with one or more parasitic short-lived males; and (4) hermaphrodites "with occasionally one, two, or three males, capable of seizing and devouring their prey" (1851: 292–293). An additional two types appeared in his second volume: (5) a female with many, cohabitating and short-lived males possessing a "stupendously long male organ" and (6) hermaphrodite with a self-sufficient male attached in the sac (1854: 30).

Darwin found the parasitic males coupling with females quite unusual. A letter to Lyell (1849) describes his mystification: "I do not know of any other case where a female invariably has two husbands." He then qualified the dramatic size differences between parasitic males and females as "abnormal" and "imperfect" (1851: 182, 281). The discovery of male barnacles procreating with hermaphrodites, however, was curious enough to necessitate a new term. *Complemental Males*, according to Darwin "seem to form the complement to the male organs in the hermaphrodite" (1851: 214). He explained males eschewing of females for hermaphrodites in terms of complementarity and power. "The masculine power of certain hermaphrodite

[1]Though somewhat confusingly, Darwin also used bisexual to refer to a species comprised of two sexes, a male and female (i.e., a two-sex model). A letter to botanist Joseph Hooker dated May 10, 1848b includes this use of bisexual.

species of Ibla and Scalpellum, is rendered more efficient by certain parasitic males" (Darwin 1851: 55). It was these complemental male that held the key to understanding an evolutionary shift from hermaphroditic to dimorphic.

In a letter to Joseph Hooker, the naturalist (1848b) remarked, "I never sh[d]. have made this out, had not my species theory convinced me, that an hermaphrodite species must pass into a bisexual species by insensibly small stages, & here we have it, for the male organs in the hermaphrodite are beginning to fail, & independent males ready formed." That is, redundancy can catalyze the loss of hermaphrodites' male features. "I hope the conclusions here arrived at, will not be summarily rejected," he (1851: 214) beseeched readers in his treatise. "Although the existence of Hermaphrodites and Males within the limits of the same species is a new fact amongst animals, it is far from rare in the Vegetable Kingdom."

What might we take from Darwin and his study of barnacles, which scientists still regard as germane? The subtle workings of heteronormativity, I would argue. Androcentrism seems to lurk in the inferences he draws about complemental males and their masculine power. And, in counterpoint to dimorphism, Cirripedia's hermaphroditism is presented as a primitive, ancestral form—an evolutionary dead end for most organisms. Perhaps this is the reason he has little to say about trimorphism beyond its brief mention in the fourth edition of *The Origin of Species* (1866).

Despite efforts to obscure variation, the naturalist and his equally curious colleagues *did* document an array of diversity in anatomical form and sexual relations. Their discussions of hermaphroditic barnacles, birds, cows, horses, dogs, etc., are also applicable to humans, who were viewed as another type of animal albeit an exceedingly more complex one. For this reason, Elizabeth Wilson urges us to think about Darwin's barnacles in terms of queerness. "His painstakingly slow work with barnacles has brought to light a natural perversity that must surely reorganize our culture-centric theories of difference, embodiment and identity," she (2002: 284) writes. I concur. But, I also believe that barnacles require that we rethink what is meant by data. Darwin's cirripedes offer irrefutable empirical evidence of morphological and behavioral variations that have historically been explained in terms of dimorphism and division. They are neither, however. Nor are they the only species to demonstrate such an array of sexual relations and anatomical forms (Bagemihl 1999; Roughgarden 2004). With barnacles we are just skimming the surface. Their biophysicality is as significant analytically as the discourse that has framed our understandings.

A close read of Darwin's work underscores the difficulty of describing phenomena for which no prior referents exist. Hermaphrodites' generative organs, for instance, are only understandable in terms of known male or female parts. But repeated descriptions of their imperfections indicate that they only approximate morphological ideals. Hunter's language choices may have been influential in this regard. A footnote in his discussion of free martins is revealing.

> Yet they were only imitations of such, for when cut into they had nothing of the structure of the testicle: not being fimilar [sic] to any thing in nature, they had more the appearance of disease. From the seeing imperfection of the animal itself, it was not to be supposed that they should be testicles, for then the animal should have partook of the bull, which it certainly did not. (Hunter 1779: 291)

The statement is but one of many that he makes about the incomparability of these animals. Similarly, when challenged to coin terms for parts deemed imperfect or ambiguous, terms that may have furthered a discussion of trimorphism, Darwin fails to do so. Given his propensity for neologisms—his writings are ripe with them—is this an opportunity missed or something more insidious that signals the erasure of certain existences?

What might have happened if Darwin and his colleagues had more fully developed or even popularized trimorphism, as opposed to trivializing or erasing it from the histories of science? In asking this question, my intent is to distinguish categorization from continuum. Continuums imply ends, extreme ones in between which reside a range of possibilities. These possibilities, however, are not infinite. Would observations about crustaceans and plants have led to an appreciation of natural variation? Darwin may have seen his barnacles as suggestive of illimitability, but both he and subsequent scientists certainly put limits in place despite evidence to the contrary. Or, would trimorphism simply have provided a different norm—one that engendered tripartitions of labor involving a slightly more elaborate hierarchization of identities and interactions? Granted, these queries are hypothetical ones. But, they do invite us to think about the connections between material evidence and discursive practices, a concern I revisit later in this chapter.

With time, Darwin would come to regard Cirripedia not with wonder at the possibilities but something akin to detachment. In his autobiography, he ruminated, "The Cirripedes form a highly varying and difficult group of species to class; and my work was of considerable use to me, when I had to discuss in the *Origin of Species* the principles of a natural classification. Nevertheless, I doubt whether the work was worth the consumption of so much time" (Barlow 1958: 118). Such detachment should not be confused for neutrality or objectivity, however. Darwin's statement is made at the conclusion of a life that spanned the nineteenth century. His tremendous epistemological and empirical contributions occur during—are entangled with—the period's imperial expansion, development of industrial capitalism and biomedicine, major shifts in social organization, and intellectual hierarchization of socio-sexual lives. Accordingly, we may see his larger evolutionary project as instrumental in constituting common sense.

3.3 Common Sense

3.3.1 Historical, Relational, Critical

Common sense, according to Clifford Geertz (1975: 7), is "a relatively organized body of considered thought, rather than just what anyone clothed and in his right mind knows." I start with Geertz for several reasons. His influence in anthropology is indisputable. He recognized that practitioners' extended meditations on the foreign and interrogation of the local held at arm's length are quite adept at revealing common sense as a cultural system with its inherent contradictions. And, he outlined

five "trans-cultural" attributes of common sense: "naturalness" or givenness; "practicalness" or the perception of usefulness; "simpleness" in the sense of being uncomplicated or literal; "immethodicalness" or the witticisms that act as wisdom; and "accessibleness" inasmuch as everyone can be an expert. That these facets of common sense obfuscate its historical construction are exactly why anthropologists should find the subject intriguing analytically. To illustrate this point, he marshals several examples. One of particular pertinence to this book's core concerns is his summation of Robert Edgerton's (1964) work on "intersexuality."

The biophysical configurations of individuals with intersex conditions confounded nineteenth century scientists and physicians. They could not be easily classified as male or female. Hunter and Darwin had not even dared to speculate. Those who did struggle to make sense of these bodily configurations, Dreger (1998b) has found, laid the groundwork for contemporary Western understandings of sex, gender, and sexuality. Humans' deviations from dimorphic norms generated concern if not outright alarm about the violation of heteronorms (i.e., the reproductive division of labor). Ambiguous genitalia evoked the specter of infertility, gender confusion, and a proclivity for same-sex or uncategorizable intimacies. Prior to feminist and queer scholars' conceptual decoupling of sex from gender from sexuality, Geertz had the prescience to inquire about the common sense of such conflation.

To examine the transcultural "anomaly" of intersexuality, he compared distinct cultural responses and representations. The Pokots of East Africa, for example, reacted to *sererr*, "male and female yet neither male nor female," with ambivalence (Edgerton 1964: 1292). An individual's ambiguous genitalia could result in infanticide, stigmatization, or marital ineligibility, but acquiring economic wealth in adulthood was also a possibility. For the Navajo of the American Southwest, as gleaned from W.W. Hill's 1935 study, individuals with intersex conditions, known as *nádleeh*, evoked wonder and awe. Certainly a social fact that contemporary Americans could not comprehend, Geertz acknowledged. Instead, and until quite recently, biomedical practitioners have gone to extravagant lengths to "treat" that which is perceived as pathological and unnatural. Rather than formal doctrine, the anecdotal wisdom of "size matters"—immethodical-speak for micro-penises and enlarged clitorises—has dictated responses (Fausto-Sterling 2000b; Karkazis 2008). More than practicality or necessity, surgical alterations have functioned to approximate aesthetic norms. There is little question in Geertz's mind about the savagery of such cultural practices. And, given what we know about the Pokot and Navajo, it is likely they would have concurred. Geertz, however, does not go as far to say that the anomaly of intersexuality signals bodily trimorphism or gender variance.

While common sense may have varied culturally, Geertz did see it as regulated and transformed cross-culturally. "It can be questioned, disputed, affirmed, developed, formalized, contemplated, even taught," he (1975: 8) remarked. But, as Thomas Patterson (2015: 3) has observed, Geertz does not describe the machinations that work so assiduously to generate and then naturalize common sense, how it "becomes ideology or science or metabolizes into false consciousness." Geertz's (1975: 12) nod to generational transmission—"from generation to generation"—seems insufficient an explanation of cultural regulation. He neither elaborates on the

impetus for change, nor examines common sense's connection to other cultural systems such as art, science, or religion. Instead, Patterson (2015: 3) singles out Italian Marxist, political activist, and journalist Antonio Gramsci for his understanding of common sense as historical, relational, and critical.

As outlined in his *Prison Notebooks*, common sense for Gramsci (1971: 330) is "the diffuse, unco-ordinated features of a generic form of thought common to a particular period and a particular popular environment." It is traditional, pervasive, often imbibed unconsciously, and prone to contradictions. Gramsci also recognized that its constitutive processes could be effaced, for he described common sense as "what is very tritely called 'instinct', which is itself a rudimentary and basic historical acquisition" (1971: 199). This gloss calls to mind Pierre Bourdieu's discussion of *habitus*.

While Bourdieu (1990: 56) articulated many definitions, some more convoluted than others, his description of habitus as "embodied history, internalized as second nature and so forgotten as history" is apropos here. As an example, the sexual division of labor—the male producer and female reproducer—speaks to a gender habitus that is shared socially, learned early, and then performed repetitively until it becomes embodied and unconscious. Even Bourdieu did not question the heteronorms in his Kabyle case study. Though he addressed the social construction of masculine domination, he continued to depict labor's divisions and the family's heterosexism as universal. Furthermore, a child's sexual identification designated just which social practices were appropriate (Bourdieu 1996). There is no explanation of impetus, but rather simultaneity, which seems to border on the biologically predetermined. The subtly and facility with which histories are naturalized—even by sophisticated social theorists—is likely the reason that Gramsci found common sense deserving of sustained critical attention. Such an inquiry can reveal the factors that incite its conception. Take, for instance, the emergence of a two-sex model discussed in the previous chapter.

To summarize, Western ways of knowing the human body as singly sexed morphed at the end of the eighteenth century. Complex cultural and politico-economic pressures, Laqueur (1990) affirmed, were the catalyst. Of course, we cannot discount the influence of paradigm-shifting scientific studies, like those conducted by Darwin. The investigation of dimorphism in simple and complex lifeforms legitimated the two-sex model, while concurrently presenting the empirical evidence of hermaphroditism as an unnatural deviation. The diffusion and reception of Darwin's work popularized his ideas on a large scale. Though not all agreed with his evolutionary theory at the outset—scientists aligned initially with either monogenism or polygenism—his ideas nevertheless found an audience amongst intellectuals and the general public. His two major works were translated into no less than eight languages during his lifetime, a testament to the power of his ideas. Of course, timing is everything as historian Alfred Kelly recognizes was the case with publication of *The Origin of Species*. "The late nineteenth century was the great age of reading," he (1981: 5) tells us. Kelly continues,

> Popular works could ride the crest of increasing literacy and the new mass circulation of books, newspapers, and magazines. Probably never before or since was the prestige of science so high and the interest of the layman in the meaning of science so great. Had Darwin's ideas appeared earlier in the nineteenth century, they could have been known by only a few.

And for those less inclined to read his texts, the naturalist's visage and theories were parodied in popular cartoons, caricatures, songs, and satires (Browne 2001). Nineteenth-century mediascapes may have been limited to the printed text and visual, but these sources reached a varied and large audience. And for the masses, ideas about anatomical differences and their social significance became, to quote Gramsci (1971: 419), "the philosophy of non-philosophers," uncritically absorbed by all but those polygenist holdouts or biblical literalists. Of course, that certain groups may diverge is expected, for Gramsci (1971: 326) also recognized that "every social stratum has its own common sense."

On the other hand, the same popularization did not occur with Darwin's writings about Cirripedia. They went untranslated, and were mostly of interest to a small group of specialists. Perhaps hermaphroditic barnacles were difficult to market broadly or depict visually. Or, they may have presented an unresolved aspect of Darwin's studies that complicated his later statements about dimorphism and reproductive divisions of labor. Regardless, the crustaceans could not compete with the widespread popularity of the peacock's tale or the ape's illustration. The masses' everyday experiences in increasingly commercialized work spaces (i.e., factories, hospitals, schools) and domestic domains may also account for the culturalization of Darwin's ideas about dimorphism and reproductive divisions of labor. Theory, or something that approximated theory, seemed to bear out in everyday practice. And through the repetition of those practices, people stopped questioning divisions as common sense. This is not to suggest that divisions disappeared, just that they became second nature.

Though conservative in character, Gramsci also noted (and Geertz seconded) that "common sense is not something rigid and immobile, but is continually transforming itself, enriching with scientific ideas and with philosophical opinions which have entered ordinary life" (1971: 144). Such may explain why heterosexuality is no longer defined as nonreproductive deviance, as was the case when originally coined (Katz 1995: 51–52). Intellectual criticism, Gramsci stressed, is instrumental in this transformation for it served to shift common sense to good sense. "This is the healthy nucleus that exists in 'common sense', the part of it which can be called 'good sense' and which deserves to be made more unitary and coherent," he (1971: 328) encouraged. While everyone may have been a philosopher in Gramsci's (1971: 330) estimation, not everyone was equally effective in their critical analyses. Rather, he looked to "the activity of single particularly gifted individuals" (1971: 331). Their education seems to have set them apart. Education according to the standards of whom, however, is the crucial question.

Gramsci's university training was partial and interrupted by his impoverished position and extracurricular commitments. Nevertheless, he went on to educate members of the working class and political detainees about communism in the face

of growing fascism (Hoare and Smith in Gramsci 1971: lxii, lxxix). It was these experiences that likely informed his ideas about the individuals capable of conducting intellectual criticism. "In the modern world," he (1971: 9) wrote, "technical education, closely bound to industrial labour even at the most primitive and unqualified level, must form the basis of the new type of intellectual." Thus, groups marginalized or disadvantaged by dominant socioeconomic conditions, and duly capable of recognizing their subordinate positions, are well poised to bring about change and project alternative ways of knowing and doing. Sandra Harding's thoughts on standpoint theory, outlined in Chap. 2, are salient here, as is Haraway's discussion of situated knowledge. Ultimately, Gramsci's philosophizing about common sense aimed to link untried and abstract theorizing with effective practice, or praxis, to engender ethical and radical political change.

While exceedingly useful for examining common sense as it pertains to social class, Gramsci had less to say about sex, gender, and sexuality. In the 30 notebooks he authored comprised of some 3000 pages, his treatment is minimal save for his thoughts titled "Some aspects of the sexual question." In this section of Notebook 22, concerned largely with the Fordist constitution of American capitalism, Gramsci defines sexuality in terms of feminine reproduction and masculine pleasure, and he sees its regulation as necessary. As Nelson Moe (2011) points out, this position is neither particularly feminist nor effective for instigating revolutionary change. We might also deduce that the Italian philosopher is equally deserving of a queer critique. Indeed, Gramsci appears to articulate commonsensical ideas established in the nineteenth century, not a particularly shocking revelation given the historical period in which he wrote. But since this period, and with his awareness that common sense remodels, we can recognize how ideas about gender and sexuality, have shifted as a consequence of feminist and queer critiques—from biologization to social construction to material-discursive practices.

3.3.2 To Queer

There is much to suggest that a Gramscian project and those undertaken by feminists and queers are in accordance with one another. As Annamarie Jagose (1996: 102), a scholar of feminist and queer studies, has explained,

> To valorise common sense is naive, if not dangerous. For it does not follow that those formations of knowledge which coincide with the discourses of common sense manifest some truth beyond analysis. Rather the convergence of knowledge and common sense may be understood more profitably as licensing and the operation of unexamined ideological structures.

The statement echoes Gramsci's thoughts on the subtlety of common sense's machinations, as well the need for its critical analysis. Common sense then demands to be queried, or queered. This understanding of queer, as a verb, "complete[s] the Foucauldian move from human being to human doing" (Jakobsen

1998: 516). The distinction succinctly historicizes the term queer. When introduced as an adjective or noun, queer described an identity, a non-neutral category born from the efforts of nineteenth-century scientists. It was invoked to denigrate and shame. Starting in the 1990s, however, reclamation by those disparaged as queer acted to resignify the term. Sedgwick (1993: 8) chronicled: "pushy femmes, radical faeries, fantasists, drags, clones, leatherfolk, ladies in tuxedoes, feminist women or feminist men, masturbators, bulldaggers, divas, Snap! Queens, butch bottoms, storytellers, transsexuals, aunties, wannabes, lesbian-identified men or lesbians who sleep with men, or…people able to relish, learn from, or identify with such." Her use of the ellipsis was surely recognition of additional identities, as well as those future ones not yet imagined. Self-categorization—more extensive than traditional binary oppositions about socio-sexual lives (male/female, man/woman, hetero-/homosexual)—countered social imposition. But, as Hall (2003: 13) has noted, queer as a noun still cannot completely shake dichotomous classifications and their hierarchical values. "One version of being 'a queer' is simply to occupy the lower half of the last hierarchized binary." Instead, queer as a transitive verb, he (2003: 14) continues, "will spread…convert others, awaken discontent, and undermine the system." This aim is far more desirable in his and others' view.

Queering then is intellectual labor. It is "a deconstructive practice" or "set of actions" that allows for critical reflection on the conventional, makes inquiries about the unknown, and confounds the status quo (Sullivan 2003: 50). To queer is not done out of idle curiosity but with the intent of exposing power's production of knowledge, generating new investigative directions, and presenting alternative ways of knowing. As political activism, queering disrupts the day to day, inserts bodies into institutional settings that work toward their erasure, and voices discontent with regulatory mechanisms and disciplinary norms. Activists aim to produce disquietude and lay bare the marginality or effacement of certain socio-sexual lives. Queering is nothing if not praxis, or theoretically informed action that aims to rectify violence in its myriad forms—physical, structural, and symbolic.

3.4 Queering the Socio-sexual

My intent with this chapter is not to catalogue or historicize the corpora of feminist and queer scholarship. Both are too vast for me to offer a detailed review of shifting emphases, influences, and arguments. In brief, feminism as an intellectual enterprise and political movement solidified in the nineteenth century in response to women's political inequality and social inferiority. Anthropologists' engagement, however, did not commence formally until the 1970s (e.g., Reiter 1975; Rosaldo and Lamphere 1974). Since this time, feminist anthropologists have moved beyond initial concerns with Woman (as a homogeneous group), binaries, and universals. More recent directions, and I do simplify here, complicate the concepts sex, gender, and sexuality; reflect on the materiality of social relations; seek to understand the expression or suppression of difference; and grapple with identities as contingent and

intersectional (e.g., Di Micaela 1991; Geller and Stockett 2006; Gilchrist 1999; Lamphere et al. 1997; McClaurin 2001; Mascia-Lees and Black 2000; Moore 1988).

On the other hand, queer studies's genesis and ongoing transformation is more amorphous. It is the outcome of multiple bodies of thought and political movements: "feminism, radical movements of color, the lesbian and gay movements, AIDS activism, various sexual subcultural practices such as sadomasochism and butch/femme stylings, poststructuralist thought—particularly the work of Michel Foucault—postcolonialism and diasporic studies, transgender and disability studies" (Hall et al. 2013: xvi). Comprehensive overviews document this complex trajectory, politicization and popularization, contributions, and shortcomings (e.g., Alberti 2013; Boellstorff 2007a; Eng et al. 2005; Hall et al. 2013; Lewin and Leap 2002; Marcus 2005; Voss 2008; Warner 2012; Wiegman and Wilson 2015). Despite their differences and tensions, however, feminist and queer scholars converge on the ways heteronormative assumptions structure gender ideology and sexual interactions. It is this common ground that provides my point of departure for queering contemporary common sense about socio-sexual lives.

3.4.1 Sex/Gender System

To examine the constitution and maintenance of socio-sexual norms, the sex/gender system concept is especially useful. As initially developed by Gayle Rubin, a sex/gender system is the "social organization of sexuality and the reproduction of the conventions of sex and gender" (1975: 168). Sex, she emphasized, was distinct from gender was distinct from sexuality. Rather than universal or static in their arrangement, sex/gender systems were bound by culture and history. While Rubin strove to understand a pervasive aspect of many sex/gender systems, the "domestication of women," she did not assume that female oppression was a natural or unchanging state of affairs. Rather, it emerged through kinship arrangements that regarded males and females in terms of rigid dichotomy, made heterosexuality obligatory, used female fertility as the basis for labor's division, and relied on the exchange of women. Ethnographic cases to the contrary—Dahomey women who took brides or "transvesticism" amongst the Mohave—signaled social construction and not sociobiology. Yet, at this early juncture in her thinking, Rubin did not designate these examples as queer. Instead, she (1975: 182) explained, "the rules of gender division and obligatory heterosexuality are present even in their transformations."

Subsequent scholars would fine-tune critiques of the contemporary Western sex/gender system. Adrienne Rich (1980), for example, examined compulsory heterosexuality. She defined it as a modern political institution used to justify gender arrangements (i.e., male dominance, division of labor) and marginalize or efface entirely same-sex relations, like the intimate ones between women. Heterosexuality's reinforcement occurred in myriad ways, some more obvious than others, that spoke to male privilege and female punishment—socialization, visual

media, language, and normalized violence. For her part, and on a related note, Monique Wittig (1982) tackled compulsory reproduction, the notion that all women possess a biological imperative to procreate. In her words,

> For the category of sex is the product of a heterosexual society which imposes on women the rigid obligation of the reproduction of the "species," that is, the reproduction of heterosexual society. The compulsory reproduction of the "species" by women is the system of exploitation on which heterosexuality is economically based. Reproduction is essentially that work, that production by women, through which the appropriation by men of all the work of women proceeds. One must include here the appropriation of work which is associated "by nature" with reproduction, the raising of children and domestic chores…. The category of sex is the category that ordains slavery for women, and it works specifically, as it did for black slaves, through an operation of reduction, by taking the part for the whole, a part (color, sex) through which the whole human group has to pass as through a screen. (Wittig 1982: 66–68)

Though she begins with a critique of sex, Wittig links it to gender and sexuality. And she does this in such an artful way that the concepts remain distinct though related. Rather, it is the Western sex/gender system with its emphasis on the relationship between female reproducers and male producers, she stresses, that makes sex, gender, and sexuality appear as interchangeable and invisible. And the analogy that she makes with race underscores the asymmetrical power relations at work in this conception of humans' differences, though Wittig herself does not question the dichotomous frame.

In making sexuality an explicit concern, these scholars owed an intellectual debt to Foucault (1978) who expounded on its production through dominant discourses and social practices. Rubin (1984), for instance, would historicize sexuality to flesh out a hierarchy of sex acts; from those performed between conjugally bound and reproductively inclined heterosexuals down to individuals whose relations were perceived as morally corrupt, mentally deviant,—"transsexuals, transvestites, fetishists, sadomasochists, sex workers such as prostitutes and porn models, and the lowliest of all, those who eroticism transgresses generational boundaries" (Rubin 1984: 279). Her use of queer at this juncture—as adjective and noun—alludes to individuals' stigmatization, oppressed status, and violent treatment. One additional and crucial point she articulated about doing "it" pertained to variation, empirically attested to in Western history and by ethnographic others. "Variation is a fundamental property of all life, from the simplest biological organisms to the most complex human social formations." Rubin (1984: 283) continued, "One of the most tenacious ideas about sex is that there is one best way to do it, and that everyone should do it that way." Here we can see the speciousness of universalizing about dichotomy.

To encapsulate these facets of the Western sex/gender system, Michael Warner (1993) invoked the term heteronormativity. He offered no definition in his introduction to the edited volume *Fear of a Queer Planet*, however. Much subsequent scholarship has clarified our understanding. Heteronormativity describes the institutionalization and naturalization of dimorphic, deterministic beliefs about socio-sexual lives. First, sex, gender, and sexuality are only understandable in terms

of binary oppositions (i.e., male/female, man/woman, masculine/feminine, hetero-/homosexual). Divvying the world up into dualisms, universal in their applicability and hierarchical in their valuation of terms, is pervasive and longstanding in Western philosophical thought. Second, biology is social destiny with regard to behavior and identity. As Sedgwick (1993: 8) noted, "It should be possible to deduce anybody's entire set of specs from the initial datum of biological sex alone —if one adds only the normative assumption that 'the biological sex of your preferred partner' will be the opposite of one's own." Hence, sex is equal to gender is equal to sexuality. It also explains how the division of labor is presented as a natural state of human affairs. Third, heterosexuality is ideal and ancestral to our species as are monogamy and the nuclear family. Finally, the misogyny that undergirds patriarchy and homophobia dictate valuation of masculinity, and those individuals who fall between the cracks of division (or dimorphism) are erased or deemed deviant.

There is of course much subsequent scholarship that feminist and queer scholars have produced since the 1990s. My synthesis here is far from inclusive. Rather, I highlight strands that I see as productive intellectually and politically for bioarchaeologists. Butler's evolving conception of performativity, for instance, has contributed significantly to destabilizing the idea that gender is essence (1999 [1990], 1993, 1997). Gender performativity "is not a singular act, but a repetition and a ritual, which achieves its effects through its naturalization in the context of the body," she explains (1999[1990]: xv). Her use of performativity should not be confused for performance, though the theatrical may factor into speech acts, sexual practices, and drag. She clarifies,

> It is important to distinguish performance from performativity: the former presumes a subject, but the latter contests the very notion of the subject…What I'm trying to do is think about performativity as that aspect of discourse that has the capacity to produce what it names. (in Osborne and Segal 1994: 35)

In other words, individual agency is beside the point for Butler. Instead, she seeks to understand the process of becoming, as well as the ways in which social structures naturalize or make this constitution of gender disappear. Performativity may signal individuals' resistance to socio-sexual norms, but it more often works to reinforce them. While transgression proves particularly troublesome and can result in repercussions ranging from violence to emancipation, reiteration speaks to a naturalization subtle enough to go undetected by even those committed to social change. Thus, a sustained critique of heteronormativity is necessary to make its operations transparent.

Almost a decade after she introduced the concept, Butler would reflect on the applicability of performativity to matters of race. "The question to ask is not whether the theory of performativity is transposable onto race," she (1999[1990]: xvi) mused, "but what happens to the theory, when it tries to come to grips with race." The prompt proved productive for other scholars (e.g., Ahmed 1999; Johnson 2001; Muñoz 2006). Butler's admission of her omission articulates a historic shortcoming in feminist and queer studies, their exclusionary tendencies. The idea that identities

are intersectional—complex, contingent, and cross-cut by multiple variables (i.e., gender, sexuality, age, race/ethnicity, class, etc.)—has provided an important internal critique. Indeed, Eng and colleagues (2005: 3) have gone as far to say that queer studies's "continuing critique of its exclusionary operations has always been one of the field's key theoretical and political promises." Queering the queer as it pertains to intersectionality, however, has important feminist antecedents.

3.4.2 Intersectionality

Intersectionality, as the basis for philosophical inquiry and political action, tracks back to Sojourner Truth's entreaty "Ain't I a Woman?" Truth was an emancipated slave who campaigned for abolitionism and women's suffrage. In her 1851 speech, she avowed that her physical strength, measured in forced, manual labor, and numerous childbirths, was undeniable and her intellect far from inferior (Truth 2007 [1851]). It was a powerful rebuke to the nineteenth-century common sense authorized by scientists of the day (see Chap. 2).

In the 1970s, radical Black feminists claimed this legacy. The Combahee River Collective, for instance, converged on Black nationalism, socialist feminism, and lesbian feminism to challenge the exclusionary nature of mainstream feminism. As manifested in their 1977 "A Black Feminist Statement" (Collective 1982):

> The most general statement of our politics at the present time would be that we are actively committed to struggling against racial, sexual, heterosexual, and class oppression, and see as our particular task the development of integrated analysis and practice based upon the fact that the major systems of oppression are interlocking.

Subsequent scholar activists have extended this intellectual work and political agenda. In so doing, they recognize the limitations of identity politics and the nuances of discrimination that arise from living life at a borderland, a hybrid space, an intersection—quite literally and metaphorically (e.g., Anzaldúa 1987; Crenshaw 1991; Davis 1981; Lorde 1984; Mohanty 1988; Moraga and Anzaldúa 1984; Smith 1983). In a piece titled "Age, Race, Class, and Sex: Women Redefining Difference," writer Audre Lorde (1984: 115) would remark, "It is not those differences between us that are separating us. It is rather our refusal to recognize those differences and to examine the distortions that result from our misnaming them and their effects upon human behavior and expectation."

Though Lorde would touch on sexuality in her piece, it was the political scientist Cathy Cohen (1997) who made explicit the need for queer theorists and activists to embrace intersectionality and renounce dichotomies. "My concern," she (1997: 440) cautioned queer activists, "is centered on those individuals who consistently activate only one characteristic of their identity, or a single perspective of consciousness, to organize their politics, rejecting any recognition of the multiple and intersecting systems of power that largely dictate our life chances." The implementation of an intersectional approach in queer politics, Cohen maintained, would

effectively challenge heteronormativity. It would also serve to document how certain heterosexuals may also be deemed deviant or nonnormative given their race, gender, or class—"punks, bulldaggers, and welfare queens."

Into the new millennium, queer scholars would address intersectionality in ways that were both personal and political. This work has documented myriad violences—physical, structural, symbolic—that place constraints on certain socio-sexual lives. "Such theorizing may *strategically* embrace identity politics while also acknowledging the contingency of identity," argues E. Patrick Johnson (2001: 13–14). To this end, he has outlined "quare studies," idiomatic of his homophobic southern grandmother but deployed by him to deliberate more generally about the racialized aspects of sexuality (see also Johnson and Henderson 2005). Working in this vein, other scholars would advance a queer of color analysis that situated the formation (and reformation) of socio-sexual norms within a history of diaspora, nation-building, and capitalism (e.g., Allen 2011; Ferguson 2004; Somerville 2000). An emphasis on diaspora, however, left unexamined the history, lived experience, and cultural transformation of indigenous queers impacted by settler colonialism (e.g., Driskill et al. 2011; Morgensen 2011). Accordingly, a queer indigenous project has worked to advance understanding of the machinations of bio-power, as well as expose and destabilize its effects on present-day native communities. Homophobia and heteronormativity are not homegrown, indigenous queers argue, but are a legacy of conquest and colonialism.

Intersectionality indicates a recalibration—Gramsci's good sense within the common—for both feminism and queer studies. But, these fields of study have also formulated concerns that do not overlap. Queer scholars' development of homonormativity, for example, is a response to assimilationist tendencies in lesbian and gay politics. Lisa Duggan (2002: 179) defines the concept as "a politics that does not contest dominant heteronormative assumptions and institutions but upholds and sustains them, while promoting the possibility of a demobilized gay constituency and a privatized, depoliticized gay culture anchored in domesticity and consumption." That is, lesbians and gays in Western society who seek equality reference the heteronormative power structures already in place, while doing little to trouble the class inequality wrought by neoliberal economics.

Many queer political activists and scholars, for instance, did not regard access to marriage, one primary political goal of the lesbian and gay movement in the late twentieth and early twenty-first century, as especially emancipatory (e.g., Butler 2002; Warner 2000). "Even though people think that marriage gives them validation, legitimacy, and recognition, they somehow think that it does so without invalidating, delegitimating, or stigmatizing other relations, needs, and desires," criticized Warner (2000: 99). Despite recognition of same-sex marriages, the institution is no less normalizing. The ideal marital union is still contractually bound, monogamous, procreative, and romantic.

For their part, anthropologists offer copious empirical evidence that counters universalizing about heteronormative (or homonormative) marriage. While feminist and queer scholars from other disciplines often neglect to take their insights into account, anthropologists document culturally bound understandings of "traditional"

marriage and kinship that elide state sanction, include multiple partners (i.e., polyandry, polygamy), involve individuals of the same sex, and defy patriarchal organization (e.g., Blackwood 2005; Herdt 1987; Weston 1991). And even in the case of American same-sex marriages, Tom Boellstorff (2007b) has evoked the idea of queer time—a recognition of time as non-linear, relational, coincidental—to highlight the unintentional outcomes that might result from queer people marrying.

Boellstorff's observations about the inadvertent should not be particularly disquieting to queer scholars. Echoing an earlier statement by Butler (1993) about its contingency and dynamism, Eng and colleagues (2005: 3) stress, "The operations of queer critique, in other words, can neither be decided on in advance nor be depended on in the future." That the outcome may be unknown signals the double edged sword of knowledge. Its production can be emancipatory (knowledge is power) or stifling (power produces knowledge). Recognizing the tension at work in this configuration, I wonder, how else might we identify the "healthy nucleus" of good sense about the body and its links to gender and sexuality? In answer, I turn to the material.

3.5 Queer Matters

There is a sizeable feminist and queer corpus concerned with anatomical differences, corporeal performances, and couplings whether erotic, procreative, or violent. Suffice to say understandings about sex, gender, and sexuality often begin with the body. And yet, many of these discussions, oddly enough, are devoid of biophysical data. The discursive—the speech act, the textual expression, the semiotic of experience—has instead predominated in scholarly treatments, many of which owe an intellectual debt to postmodernism. The point is not necessarily a new one, and internal critics have been amongst the most insistent in voicing it (e.g., Alaimo and Hekman 2008a: 3; Fraser 1995: 67; Meskell 1999). "Why are language and culture granted their own agency and historicity," Karen Barad (2003: 801) muses, "while matter is figured as passive and immutable, or at best inherits a potential for change derivatively from language and culture?"

Judith Butler's oeuvre is representative, highly influential, and a point of departure for many critical of materiality's elision. Butler may have identified "nature apart from the process of 'naturalization'" as a viable issue for investigation, but it was not an issue to which she gravitated (Breen et al. 2001: 12; see also the Preface in Butler 1993). Rather, discourse has been her primary concern.

> Language sustains the body not by bringing it into being or feeding it in a literal way; rather it is by being interpellated within the terms of language that a certain social existence of the body first becomes possible. To understand this, one must imagine an impossible scene, that of a body that has not yet been given social definition, a body that is, strictly speaking, not accessible to us, that nevertheless becomes accessible on the occasion of an address, a call, an interpellation that does not "discover" this body, but constitutes it fundamentally. (Butler 1997: 5)

Undoubtedly, Butler's and others' attention to social construction has undermined essentializing about socio-sexual lives. Yet, the capacity they grant discourse to dictate the terms of meaning may explain how Charles Darwin can discount trimorphic bodies in work that comes after his treatise on barnacles' complex sexual relations. Or, we may recognize the sway that socio-sexual norms have over scientists who are only able to describe empirical variation as imperfect, ambiguous, or deviant. That is, rigid dimorphism provides "the very terms that constitute the 'necessary' domain of bodies through rendering unthinkable and unlivable another domain of bodies, those that do not matter in the same way" (Butler 1993: x). And this understanding is crucial for tracking how imperial interventions and purportedly objective science, as discussed in Chap. 2, produce Others in light of their race, gender, or sexuality. But, an emphasis on discourse does little to explain why Darwin, who is very much a man of his Victorian age, *initially* saw "illimitable wonder"—a moment unconstrained by culture or history. Hence, while Butler's work has been paradigm shifting, her analytic emphasis serves to present discourse about the body in opposition to rather than entangled with its materiality.

To demonstrate what happens when discourse about bodies matters more than biophysical data, Butler's (1999[1990]: 136–141, 2004) consideration of individuals with intersex conditions is instructive. At issue is autonomy in thought and action. Butler (2004: 6) is correct in her assessment that the intersex activist movement "challenge[s] the principle that a natural dimorphism should be established or maintained at all costs." But, she also presumes that individuals with intersex conditions will opt to modify their bodies in order to realize an internalized sense of gendered self. With regard to sex assignment, she remarks that "choosing one's own body invariably means navigating among norms that are laid out in advance" (2004: 7). What happens, however, when an individual chooses to have a body that defies the norms entirely?

As aforementioned, biomedical practitioners have historically regarded ambiguous genitalia as pathological and in need of surgical alteration. A shift in their discursive practices, however, is evident in the Consensus Statement of the Management of Intersex Disorders (Lee et al. 2006). The changes are likely due to the fact that intersex activists helped craft it. While biomedical practitioners' ethics may be less monstrous, to paraphrase Dreger (1998a), the statement also exemplifies the tenacity of common sense. Heteronormative notions about compulsory heterosexuality and procreation remain implicit, and intersex conditions are still characterized as disorders in need of biomedical management. Moreover, Katrina Karkazis's (2008) empirically robust ethnography about intersexuality reveals the fallacy of this "management." Of enlarged clitorises, one doctor statement is representative about body ideals: "These girls don't look right. It's unsettling. It's repulsive. You just cannot leave them looking like that!" (Karkazis 2008: 147). Another sheds light on sexuality: "If you're a woman with a big clitoris, you're likely to turn into a dyke. People never say it in that kind of a cruel, inappropriate way, but that's the association people make" (Karkazis 2008: 149). Given such attitudes, it would be wise to question just what doctors mean by "severe" cases in need of clitoral surgery. Such a recommendation reiterates their authority, stymies

their accountability, and creates a subclass of abjection. The "choices" parents make for their children act to concretize common sense about anatomical and heteronorms. Ultimately, Karkazis's conclusion is that a disease model prevails, which functions to alleviate cultural dis-ease with certain socio-sexual lives. Given such high stakes, then, intellectual criticism cannot be an end unto itself.

Qualitative statements from individuals whose socio-sexual lives have been imperiled and marginalized by dominant modes of science, and Karkazis's ethnography includes a number of them, speak truth to power and drive political activism. Their "situated and embodied knowledges" per Haraway (1988), have productively interrogated common sense about embodiment, corporeality, gender, and sexuality. In so doing, they present alternative ways of being in and knowing bodies. The Intersexed Society of North America (ISNA),[2] for instance, advocates for assignment of a child's gender so as to avoid psychological trauma, and here Butler's ideas about gender performativity are pertinent. But, for reasons that are very personal and highly politicized, intersex activists also encourage individuals to not alter their natural differences. ISNA members are also duly critical of practices performed on nonconsenting children; these are often painful, unnecessary, and rob "people of corporeal autonomy and sexual function." In support, they cite evidence of individuals who refrained from normalizing surgery and grew up psychologically healthy. Those who choose not to get surgery do so because they recognize a natural configuration that defies dimorphism as a constructed bodily norm. By virtue of their existence, they demonstrate that there is nothing natural about dimorphism. Rather, biophysical data signals a continuum of human variation (Fausto-Sterling 2000b). Hence, while culture can herald bodies into existence, per Butler's insights, natural differences may also serve as disruptive and inceptive phenomena that provide the foundation for cultural (re)formulations and responses.

My intent with this example is not to present Butler as a straw queer person. Her project is by no means static, and she has not been deaf to constructive criticism. Butler did come to endorse investigation of biophysical evidence, citing the scholarship of biologist Anne Fausto-Sterling (1993, 2000a, b, 2005).

> I think we can see in work such as Anne Fausto-Sterling's efforts to come up with 'interactive' models that insist that (a) biology conditions cultural life and contributes to its forms and (b) cultural life enters into the reproduction of our bodies at a biological level. My sense is that her formulation is resonant with my brief effort to establish a kind of chiasmic relation between the two. (Butler in Kirby 2006: 145)

The distinction between sex and gender was an important contribution of feminists in the 1970s, Fausto-Sterling (2005: 1493) concedes, but it was shortsighted of them to have "relegated" the former concept to "the domain of biology and medicine." She has been joined in remedying this theoretical gap by Sandra Harding, Donna Haraway, Elizabeth Grosz, and Rosi Braidotti. Their reclamation of the body has compelled an increasing number of scholars from myriad disciplines to

[2]ISNA is no longer active but the organization's website is still an excellent resource. See http://www.isna.org/faq, accessed 29 October 2015.

make matter matter (e.g., Alaimo 2010; Alaimo and Hekman 2008b; Barad 2003, 2007; Giffney and Hird 2008; Hird 2004; Jagose 2013; Karkazis 2008; Wilson 2002, 2004). In the case of bone, for instance, Fausto-Sterling (2005) identifies it as a complex substance shaped by physiological processes that cannot be disentangled from the social.

Those who regard this project as worthy also recognize it as quite difficult. A transdisciplinary initiative that challenges researchers to work at the interface of the sciences and humanities is required. How to bring materiality back into the fold without essentializing socio-sexual identities? (The process and effects of essentialism—the racialized pelvis, sexualized skull, geneticized gene—were discussed at length in the previous chapter.) To this end, as Alaimo and Hekman (2008a: 6) note, a "material turn" aims to "radically rethink materiality, the very 'stuff' of bodies and natures." The scrutiny of matter does not discount prior work that has concentrated on discourse. Rather than a material/discursive dichotomy, the emphasis is on material-discursive entanglements. Scholars invested in this project, many of whom straddle the fine line between feminist and queer studies, call for no less than an epistemological and ontological shift in how we think about empirical evidence. This enterprise flies under the flag of "new materialism," but it goes by a host of other names: transcorporeality (Alaimo 2010), agential realism (Barad 2003, 2007), naturecultures (Haraway 2003).

Building on Butler's ideas about bodies, for instance, is theoretical physicist and feminist Karen Barad (2003, 2007). Her reclamation of performativity is simultaneously sympathetic to and critical of Butler's theory. "We are part of the nature that we seek to understand," Barad (2007: 247) stresses. For her, the material world cannot be examined independent from the discursive practices that make it meaningful. Barad identifies matter as active (or "agential"), consequential, and ontological. She is careful to distinguish the ontological from the epistemological, however. In philosophy speak, and to oversimplify a bit, ontology refers to that which exists. Epistemology, on the other hand, concerns how we go about knowing that which exists or is true or is right. (Though contra to the universalizing tendencies of philosophy, anthropologists are quick to acknowledge that the answers to "What is existence?" and "How do we know what we know?" can vary cross-culturally.) Barad complicates the distinctions between ontology and epistemology by advancing an "onto-epistem-ology—the study of practices of knowing in being" (2003: 829). In a subsequent, expanded discussion, she has characterized her framework as "epistemological-ontological-ethical" (2007) to underscore scientific practice's ability to elicit sociopolitical change.

Scholars are still wrestling with the implications of Barad's philosophical account, me included (see Chap. 7). Yvonne Marshall and Benjamin Alberti (2014), for instance, look to Barad to rethink specific classes of artifacts—stone objects from the Pacific Northwest coast, ceramic body-pots from northwest Argentina, and Maori chevron amulets (see also Alberti and Marshall 2009). Barad's disavowal of division—human/nonhuman, animate/inanimate—frame their understanding of these artifacts' agency and meanings as bound to culture, time, and space. "Matter itself is practice-based," explain Marshall and Alberti (2014: 22).

Archaeologists, especially those who align with feminism and queer studies, will likely agree in principle with this turn to material-discursive practices. Many may take umbrage with the notion that it is new, however. In the particular case of feminism, for instance, Margaret Conkey and Joan Gero (1997: 418) have noted that archaeologists' studies of gender contribute to this larger body of theory by exploring the "the dialectic between human life as socially constructed and the very materiality of human life." And in her *Annual Review of Anthropology* piece "Archaeology of the Body," Rosemary Joyce (2005) catalogues pertinent literature and documents shifting concerns—from "the body as a public, legible surface" to "the body as a site of lived experience, a social body, and site of embodied agency" (139). Hence, while archaeologists are oft want to borrow theories developed in other disciplines, for better or worse, they do have intimate knowledge of materiality. Beyond disciplinary ego, I see new materialists' limited citation of these studies as a major gap in their project.

Working directly with material or human remains serves to isolate just where theories fall short or require amendment. In the case of agential realism, for instance, Barad's ideas are very useful for explaining the performativity of contemporary scientific practices, as I elaborate in Chap. 7. "*Matter comes to matter* through the iterative intra-activity of the world in its becoming," she (2003: 823) explains. With such an understanding in hand, Alberti (2013: 102) examines osteological (i.e., discursive) practices for determining sex:

> In the labor of excavating, cleaning, measuring with calipers, referring to standard tables, and publishing, the sex of the bone/skeleton is brought into being as both a specific phenomenon and as a general category. The fact that we can repeat those measurements, often reliably, makes that act a fairly stable one; but it does not mean the category exists prior to its measurement or is an inherent property of the bone.

His description explains the ontological status of bodies in the contemporary Western sex/gender system. It is crucial to not assume that since everybody has a body, one's analysis can begin with some basic presumptions about the way that all humans exist and know, however.

Left undiscussed is how we might understand the emic, social significance, or shaping of biophysical data when the culture under study is not our own. And this inattention to culture-historical specificity is a shortcoming I see in Barad's work, as well. I am reminded of Paloma Gay y Blasco's (1997) ethnographic study of Spanish Gitanos (Gypsies/Roma) who describe the *honra*. A biophysical feature located inside of the vagina, the honra is whole until a woman loses her virginity or is deflowered during her wedding ceremony by a ritual specialist. This professional woman, as Gay y Blasco describes, wraps a white handkerchief around her finger, inserts it into the bride's vagina, and bursts the *uva* inside to release the honra. The yellowish fluid produced is then collected on the handkerchief. As Gay y Blasco learned, the honra is constitutive of gender identities, sexual interactions, and bodily experiences in the Gitano community she studied. Biomedical practitioners, however, are hard pressed to make sense of the honra. It is not the hymen and may approximate the Bartholin's Glands. And initially Gay y Blasco was confounded. "I

found it difficult to think of something that seemed so tangible as the result of 'discourse'," she (1997: 529) relates. But, as she comes to conclude of the honra, such materiality is what allows the Gitano to think gender and sexuality. Their linking of sex, gender, and sexuality through material-discursive intra-actions, however, contrasts vividly with the Western sex/gender system. But, to identify just how it does, reconstructing the dominant bodyscape of the culture under study is first necessary.

Returning to Alberti, it is also important to note that his discussion of ontology does not extend to developmental processes catalyzed from within, which may then be impacted from without. The analyses of body's parts—and archaeological bone despite its seeming stasis and durability is no exception—prove instructive about dynamic processes not easily separated from culture, a point emphasized by Fausto-Sterling (2005) and Sofaer (2006). In this conception of the body, it is plastic, biocultural (or "material culture" in Sofaer's estimation), and "lived-in" (to borrow from Fausto-Sterling's glossing of embodied experience). Identifying the biophysical evidence for these attributes may help bioarchaeologists to discern the central facets of a culture's emic bodyscape. And in so doing, researchers can avoid biologically deterministic, universal, and presentist reconstructions of sex/gender systems.

3.6 Plastic, Biocultural, Lived-in, Intra-active

Plasticity, as Sofaer (2006: 71) defines it, is "related to dynamic irreversible ontogenetic modifications that are not heritable." These adaptations (or maladaptations that engender chronic disease risk) may be epigenetic, inasmuch as they begin in utero and directly implicate intergenerational factors shaped by socioeconomic circumstances (Gowland 2015). Social statuses linked to poverty and inequality, Rebecca Gowland (2015: 536) recognizes, may have a "heritable phenotypic legacy." Independent of epigenetic impacts, or so we presume for now, osseous changes after birth can result from habitual activities, intentional alterations (e.g., cranial modification), diseases, and trauma. According to Sofaer (2006), such changes speak to the body as a product of reiterative cultural practices. Age, population, and/or environment may also impress themselves on bone, as Walker (1995, 2005) has demonstrated is the case for skeletal elements utilized to determine sex. Males and females display increasing "masculinization" of the greater sciatic notch as they grow older, and "post-menopausal females" develop "male cranial features."

Walker documents an important dimension of plasticity, one that necessitates reanalysis of samples in order to rectify paleodemographic profiles. Yet, characterizing osseous changes in terms of masculinity, I believe, reifies contemporary common sense about postmenopausal women. In Western society's sex/gender system, women's nonreproductive status is laden with social significance about their insignificance, their lack of femininity. Female-bodied individuals' acquisition of masculinity ultimately presents a deviation from heteronorms (If a female cannot or does not reproduce than how do we define her femaleness?). Similarly, it would be cause for concern if males' pelvises or crania displayed feminized features, as we

saw was the case with Franz Schubert and the suppositions made about his sexual predilections (Chap. 2). The anatomical norm regardless of age is the male-bodied individual of masculinized pelvises and robust crania. Hence, analysts' framing of age-related changes in terms of sex is far from neutral (and it seems that Walker may have also been tuned into this problem given his use of scare quotes).

The issue is not that pelvises or crania change with age or display features of the opposite-sex, but rather that a biomedical bodyscape only frames such empirical evidence in terms of sexual dimorphism and division. This is one shortcoming I see with Sofaer's theoretical osteoarchaeological approach, as well. Her important discussion of the body as material culture—continuously made and remade through cultural practices—takes sexual dimorphism as an ontological and epistemological starting point, as common sense. "Overall, males and females do fall into two distinct groups because they are dimorphic" Sofaer (2006: 92) rationalizes. A critique of her point is not to suggest that sex is immaterial or it is *only* conceivable as a representation. More productive than presuming dimorphism and division are absolute, or that the exceptions do not matter, is to examine materiality's entanglement (i.e., intra-action) with discourse in a given cultural context. To account for the plastic, biocultural, lived-in, and intra-active body, we may think more deeply about the postmenopausal body as a physiological phenomenon and cultural construct.

"Could it be," wondered Margaret Lock (1993: 30) in her ethnography *Encounters with Aging*, "that the menopausal body, and perhaps the Menopausal Woman as well, is not after all universal?" The query counters much current thinking in biomedicine. In answer, she offers a comparative study of menopause in Japanese and North American societies that "contextualize[s] interpretations about the body not only as products of local histories, knowledge, and politics but also as local biologies" (Lock 1993: 39). What she fines are distinctly different expectations, experiences, and social meanings about the cessation of menstruation. Embodied and situated knowledges call into question that which biomedicine has deemed natural fact. It is not that Japanese society elides a biomedical approach to the body. Rather, Japanese women's embodied experiences of menopause exist concurrently and challenge the idea that it is a "deficiency disease," as described in the biomedical corpus (Lock 1993: xxix). Its characterization as pathological is in keeping with the biomedical bodyscape's idealization of woman as reproducer; that is, female infertility calls one's socio-sexual identity into question.

This is not to explain away bodily responses. Japanese women report shoulder stiffness, headaches, and lumbago when discussing *kōnenki*, the Japanese word that most closely corresponds to the "change in life (Lock 1993: 167). Yet, dissimilar from the majority of their North American counterparts, they rarely have hot flashes or night sweats. The embodied experience of *kōnenki*—even the experience of it at all—is shaped by other, more pressing social factors, like regional location (urban versus rural), class, generational cohort (pre- versus postwar). Nor is *kōnenki* regarded as a disease in need of treatment. Rather, and in contrast to Western society, aging imparts social value and engenders shifts in Japanese women's family obligations. In a sex/gender system where women's nurturance is regarded

as essential for familial well-being, the change of life signals a middle-age woman's transition "from being concerned primarily with children and their care to enjoy a brief spell of relative freedom…before she becomes fully occupied with the care of aged people for a good number of years" (Lock 1993: 45). Ultimately, the cessation of menstruation is perceived as a facet of a woman's life cycle and not a biological phenomenon that defines her in toto.

For bioarchaeology, there is much we can take from Lock's intricate case study. Clearly, practitioners have long emphasized contextualization. Her emphasis on the dialectic between biology and culture (or the material and the discursive), the notion of "local biologies," can also prove instructive in investigations of humans remains. Elsewhere Lock (2001: 483) has specified what the concept is and what it is not:

> This concept does not refer to the idea that the categories of the biological sciences are historically and culturally constructed (although this is indeed the case) nor to measurable biological difference across human populations. Rather *local biologies* refers to the way in which the embodied experience of physical sensations, including those of well-being, health, illness, and so on, is in part informed by the material body, itself contingent on evolutionary, environmental, and individual variables.

The complexity of local biologies—the myriad, interdependent variables for which we must account—may be one of the reasons bioarchaeologists' engagements with the concept are currently few in number (though see Agarwal 2016; Littleton 2011; Tanner and Taps Bolivia Study Team 2014). Yet, given menopause's link to osteoporosis, the former is presumed to increase one's risk for the latter, it follows that local biologies likely have an observable skeletal signature. As Fausto-Sterling has noted, the biomedical model for osteoporosis neither implements a life course approach nor considers the idea of local biologies (Fausto-Sterling 2005). Instead, diagnosis is made based on selective criterion (i.e., young white women), lack of standardized assessments, pharmaceutical companies' commercial interests, and unsubstantiated presumptions about hormones' impact. Thus, bioarchaeological studies of osteoporosis are poised to expand understanding—to contextualize and historicize not universalize—about this facet of aging.

The concept local biologies resonates in Sabrina Agarwal's research on the varied biological and cultural factors that contribute to bone loss (2012, 2016; see also Agarwal and Grynpas 2009; Agarwal et al. 2004; Beauchesne and Agarwal 2014). In so doing, she lays to rest a priori and universalizing notions about the Osteoporotic Woman. Agarwal does not discount that menopause and aging are impactive in modern populations. But she does not presume inevitability in her bioarchaeological investigations. Bone loss, she argued, was not a discrete phase or event, but a process best understood over the course of a life. For instance, comparing two British medieval samples, one from rural Wharram Percy and the other urban London, Agarwal (2012) did not just analyze individuals sexed as female. Nor did her study of gender begin with sex differences or the sexual division of labor. Rather, she first examined the presence and degree of bone loss within the two samples. If present, she then determined if differences between males and females were statistically significant. And if so, she examined age differences

according to sex assignment. In explanation of methodology, Agarwal (2012: 331) writes, "Sociocultural influences on the body are not layered on top of the primary influences of sex and age; rather, they mold and determine the sex- and age-related trajectory of bone health."

At rural Wharram Percy, Agarwal found a correlation between age and bone loss. But, she did not find a statistically significant effect that linked age to sex differences (see also Agarwal and Grynpas 2009; Agarwal et al. 2004). The sample from London told a different story about socio-sexual lives. "In the urban samples," she (2012: 326) writes, "there is a statistically significant sex difference in the oldest age group, with females clearly showing less bone structure and connectivity in old age as compared to males." Data were further enriched by salient historical sources that included information about gender, class, nutrition, labor, parity, and lactation. Her findings ultimately indicated that rather than attributable to biological sex, patterns in bone loss were related to gender, and those identities and interactions tied to gender differed in space (i.e., rural and urban settings) and through time (i.e., medieval and modern periods). Though I should say that socio-sexual identity may be far more appropriate a descriptor given Agarwal's scholarly aims—to document the intersection of class-age-gender, the dynamic nature of a life course, and the synergy between biological and cultural forces.

3.7 Conclusion

"Common sense" Gramsci (1971: 326) inked into one of many prison notebooks, "creates the folklore of the future, a relatively rigidified phase of popular knowledge in a given time and place." (Despite his deliberations on discipline and penal systems, Foucault never did explain Gramsci's ability to think critically about power while in the grip of incarceration. A new twist on the soul as the prison of the body.) In this chapter, I have worked to reconcile Gramsci's project with those advanced by feminist and queer scholars. Interrogating common sense about sex, gender, and sexuality has decoupled the concepts, as well as highlighted concerns of salience for those who draw social inferences from bodies' biophysical attributes.

The "imperfections" of hermaphroditic barnacles and individuals with intersex conditions, for instance, make evolutionary theorizing about dimorphism and division far more difficult to sustain as an ideal or absolute. In so doing, these examples offer a touchstone for epistemological and ontological shifts in understandings of sex, gender, and sexuality. The heteronormativity of Western society's sex/gender system is neither universal in space nor beyond transformation through time. Identities are not monolithic but lived at the intersections. Thus, ongoing critique, whether it comes from outside or is internal to a scholarly discipline or social movement, is intellectually productive and often necessary. In this way, we can expedite future folklore's creation and identify the good sense within the common.

For my part, my intent with this book is to add to scholarship that extends thinking about the material. I do not see my efforts as a foil to feminist and queer studies' longstanding emphasis on the discursive. Instead, I present discursive practices as linked to material evidence, in this case bioarchaeological data. As a challenge to common sense about socio-sexual lives, I discussed the biomedical myth of the Osteoporotic Woman. Researchers have demonstrated how a life course approach informed by feminist and queer ideas can invalidate presumptions about socio-sexual lives and physiological processes. Bioarchaeological studies of osteoporosis (or bone loss) affirm that it is far more informative to think about the body as intergenerational, plastic, biocultural, and lived-in. But, as evidenced by the larger bioarchaeological corpus, questions remain about evocative traces of the past. In subsequent chapters, I discuss the stories that intellectuals and nonspecialists narrate about them. Are they variations on a theme that is familiar? Or, do the inferences drawn about the past engender an ontological and epistemological shift that recognizes different ways to be human?

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Chapter 4
"Grave News, Romance Is Dead"

4.1 Introducing …

> I brought my master news of Juliet's death;
> And then in post he came from Mantua
> To this same place, to this same monument.
> This letter he early bid me give his father,
> And threat'ned me with death, going in the vault,
> If I departed not and left him there. [Romeo and Juliet, Act V, 271-77]
>
> —William Shakespeare, 1597

At this book's outset, we briefly met the Lovers of Valdaro, two Neolithic skeletons that Italian archaeologists had unearthed on February 5, 2007. The discovery swiftly became international news on account of the decedents' body position—a loving embrace in excavators' estimation. This chapter chronicles their posthumous story and draws comparisons with other cases of ancient "embracers." What happens to these archaeological bodies, I wonder, as they traverse mediascapes?

As discussed in this chapter, narratives about ancient embraces proceed in predictable and patterned ways. Archaeologists craft authoritative accounts about double burials, which then circulate beyond the academy—in diverse media like mainstream news coverage, art installations, and museum exhibits. Whether intended or not, the effects are twofold: 1. the disparate cultures, geographic locations, and time periods from which bioarchaeological remains come are trivialized; and 2. commonsense narratives about the immortal and universal adoration that a man has for a woman, what I call the Romeo and Juliet Syndrome, are produced, capitalized on, and consumed. The message communicated globally is that our modern state of ideal socio-sexual affairs—one characterized by heteronormativity, patriarchy, heterosexism, and monogamy—is quite ancient.

Queering embraces provides a springboard for presenting the diversity that characterized past peoples intimate relations and social arrangements within a

P.L. Geller, *The Bioarchaeology of Socio-Sexual Lives*,
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specific cultural and historic context. To queer burials, however, does not mean that we identify decedents as "homosexual" and "transsexual"; this qualifier of one's sexual identity is a modern creation (see Introduction). Hence, it is crucial that specialists and an interested lay audience recognize presentist ideas in reconstructions of the past. These say far more about our modern conceptions of bodily differences, social expectations, and intimate relations. Archaeologists then should strive to account for alternative bodyscapes, predicated upon emic understandings of socio-sexual interactions. It also means that producers and consumers of mediascapes think more critically about the representations they observe.

To be clear, I do not draw my own conclusions about these cases. The point of this chapter is to spotlight the similitude of heteronormative interpretations about double burials that come from quite disparate time periods and places. If anything sensationalized treatment makes for decontextualized, detemporalized, and oversimplified presentations. Strong and well-supported inferences about social identities and intimate interactions, I believe, require an in-depth knowledge of the culture and (pre)historic moment under study. Hence, the bioarchaeologists who specialize in the regional and temporal areas that I bring to the fore are poised to make important future contributions in scholarly and popular venues. Instead, in Chaps. 5 and 6, I offer contextualized discussions of socio-sexual lives based on my own research.

4.2 Love Never Dies

4.2.1 The Lovers of Valdaro

Archaeologists' unearthing of a 5000-year-old double burial on the outskirts of Mantua in northern Italy had a compelling news hook. Two individuals—face to face, limbs flexed and intertwined—appeared, in the words of their excavators, to be "hugging.[1]" The exceptional preservation and Neolithic date were cause for celebration. News coverage followed with rapidity and in real-time. "Archaeologists Extracting Ancient Lovers" announced *The Boston Globe*. "Grave News, Romance is Dead" punned a headline in the UK's tabloid-style *Daily Mirror*.[2] Most accounts were preoccupied with the approach of Valentine's Day. Indeed, one news lead heralded the discovery as "a Valentine's Day gift to the country" (Stewart 2007a). Maria Elena Menotti, who at the time was Lombardy's Superintendent of

[1]As reported on *BBC News* online: "It's an extraordinary case," said Ms. Menotti. "There has not been a double burial found in the Neolithic period, much less two people hugging—and they really are hugging" (http://news.bbc.co.uk/2/hi/6338751.stm, accessed online 23 May 2013).

[2]http://www.mirror.co.uk/news/uk-news/grave-news-romance-is-dead-451694, accessed 15 November 2009.

Archaeology, waxed lyrical, "From thousands of years ago we feel the strength of this love. Yes we must call it love." Accordingly, the ancient embracers were christened the "Lovers of Valdaro" (David 2007).

Their tale, journalists elaborated, was one of eros and pathos. A *USA Today* headline announced "Archaeologists Find Prehistoric Romeo and Juliet Locked in Eternal Embrace." *The Associated Press* story "Prehistoric Romeo and Juliet Discovered" (David 2007) ran on *The Denver Post*'s, *NBC News*'s, and *The Washington Post*'s websites, amongst others. Valdaro's proximity to Verona and Mantua, two prominent settings in Shakespeare's *Romeo and Juliet*, appeared to reconfirm that the tradition of youthful though ill-fated love extended back far back into humans' prehistory.

In interviews, Italian investigators conceded that gaps in their knowledge would persist until formal analysis of the decedents had occurred. Yet, assertions about sex, age, body positions, and emotion made at the time of excavation indicate that they had already drawn some definitive conclusions. The paired decedents were identified as a young male and female; these determinations were presented as their "gender" rather than their "sex." While youth was predicated on intact dentition, the diagnostic methods or morphological traits scientists used to determine sex were not discussed. Proximity offered evidence of romantic intimacy and erotic desire. That ancient embraces could signal kin cowering together (i.e., fear) or strangers strangling each other (i.e., anger) rarely, if ever, entered the interpretive picture. In fact, statements from other scholars who questioned assumptions about decedents' body positions and relationship were buried at news stories' ends (e.g., Stewart 2007a). Inasmuch as mass media writing continues to rely on an inverted pyramid structure, this placement of counter-narratives highlighted the insignificance journalists granted such information.

As the Lovers of Valdaro's story went from a local audience to a global one it was shorn of those details presumably deemed extraneous by various editors. For instance, the local, Italian language *Gazzetta di Mantova* had originally published a series of 20 photographs on their website.[3] These images documented the extended stages of exhumation and clearly showed an excavator unearthing a single individual no more than 3 feet to the left of the double burial. This third decedent was equally well preserved, intentionally laid to rest on the right side, and in a fetal position. In contrast to the double burial, news reports described the individual as "solitario," or lonely.[4] With each retelling, content share, and blog repost, however, a now iconic image of the decedents' embrace remained the only photographic constant (see Fig. 1.1).

As silent muses, the Lovers of Valdaro went on to inspire creative types of all ilks—musicians, artists, writers. Songsters crooned about their eternal love, as

[3] http://gazzettadimantova.gelocal.it/foto-e-video/2007/02/28/fotogalleria/gli-amanti-di-valdaro-2-1.253701?p=0, accessed 15 November 2009.

[4] http://thule-italia.com/wordpress/archives/6206, accessed 4 May 2013.

attested by several (somewhat off-key) YouTube videos. "And written upon our faces, through time we'll reminisce, our bones will tell a simple tale of a skeleton's last kiss," the heavy metal singer of Quitting Heaven intoned in "Skeleton Kiss."[5] No less than three additional album covers bear the Lovers' likenesses—Fallout Boy's *Believers Never Die*, Tesla's *Forever More*, and Darkest Hour's *The Human Romance*. For the artist Marzia Migliora, the Lovers' image compelled her to create "lei, che non dormiva mai" ("she, who never slept"), a ceramic reproduction of the decedents' skeletons. The artist displayed the casts atop a Milanese gallery floor. Her explanation of the piece's inspiration echoed news reports' statements about the bioarchaeological find:

> They belong to a man and a woman; their bodies were buried opposite each other, their limbs entwined as if joined in an embrace. The intimacy of this gesture, which has remained intact over the centuries, alludes to the capacity of love to stretch beyond all temporal boundaries and, for this reason, it takes on a profound symbolic meaning.[6]

Blogs featured extended discussion. Remarked Chick Chat's author, "I find it really sweet and romantic that this couple has been wrapped in each other's arms for an estimated 5000 years.[7]" Comment boards on news websites accumulated replies. Exceptional preservation of their body positions, implied contributors, was the "Lovers'" conscious, agentive decision rather than a happy outcome of site formation processes over the millennia. In response to the story "Ancient Lovers Are Unearthed in Italy," one web commenter pleaded: "Please, please do not disturbe [sic] these bones. These lovers have been together for 5000 years and I am sure planned to remain that way for eternity. Please let them be."[8] Perhaps her plea fell on archaeologists' ears.

To preserve their body positions, excavators removed the decedents still intertwined and solidly encased within a block of earth. "Hugging Couple Excavated but Still Together," explained a *Reuters* headline (Stewart 2007b). On February 13, 2007, the article continued, they were transported to Como's Musei Civici for formal analysis of "age, gender and, if possible, cause of death," as well as ancient DNA testing. An Italian language news site jested, "Viaggio di nozze a Como per gli 'amanti di Valdaro'." The Lovers were going on honeymoon to the Musei Civici's Laboratorio di Archeobiologia. Upon their arrival in Como, the well-known couple was welcomed by the mayor.[9] Hence, even prior to their formal analysis, there was much ado about the Lovers of Valdaro.

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[5] https://www.youtube.com/watch?v=vPxNzrbVMZA, accessed 9 January 2015.

[6] http://www.artnet.com/galleries/galleria-lia-rumma/marzia-migliora-bianca-e-il-suo/, accessed on 29 January 2015.

[7] http://chickchat.ivillage.com/love/2007/02/sweet_romance.html, accessed on 20 November 2009.

[8] http://www.topix.com/forum/it/mantua/TCJR26842HR0H9KUB, accessed on 18 November 2009.

[9] http://ricerca.gelocal.it/gazzettadimantova/archivio/gazzettadimantova/2007/03/14/NT2PO_NT208.html, accessed 21 January 2015.

4.2.2 The Neolithic

If anything, the Neolithic burial does highlight just how much we do not know about this pivotal period in human prehistory. Though Vere Gordon Childe did not coin the term—the honor goes to John Lubbock (1865)—his understanding of "Neolithic" as revolution remains popular today. Those facets of the human condition deemed civilizing in the Western imagination are thought to have occurred during the expanse of time that brackets this period. Historically, archaeologists' geographic concentration has extended from western Asia to the British Isles. In various Old World locales, global climatic shifts that signaled the waning of the Ice Age (ca. 11,000 years ago) instigated myriad and profound cultural developments. Technological innovation engendered the domestication of plants and animals, and husbandry in turn brought about the domestication of humans (Hodder 1990). Large scale settlements and monumental architecture demonstrate communities' ever-increasing numbers, sedentism, and social complexity. Dramatic epidemiological shifts occurred as a result of changes to ecosystems, as well as intra- and inter-species proximity (Barrett et al. 1998). The age of stone gave way as a consequence of humans' development of metal.

Such is the neatly packaged and monolithic version often presented for simplicity's sake. Neolithic includes "a chronological horizon, a stage in an evolutionary scheme, a form of economy, a set of social relations or a cultural phenomenon" (Thomas 2002: 13). The problem is that when used as a catchall, Neolithic may communicate equivalence between locales, as well as unilineality and inevitability (i.e., orthogenesis). Hence, archaeologists now work to tease out the important regional differences in temporal ranges, sequences and occurrences of key events, and associated material remains (Vella Gregory 2006). For example, numerous recent studies, of which only a few are cited below, indicate that Neolithic mortuary practices were highly variable through time, between regions, and even within sites [e.g., Central Europe (Beyneix 2012; Haak et al. 2008; Laporte and Tinévez 2004; Lee et al. 2012; Linden 2007); Greece (Fowler 2004; Papathanasiou 2005; Papathanasiou et al. 2000); Italy (Malone 2003; Robb 1994, 2007); Near East (Bonogofsky 2003; Croucher 2012; Kuijt 2008; Porter 2002); Western Europe (Brück 2004; Dowd 2008; Jones 2008; Thomas 2000)].

In Italy, the Neolithic extended roughly from 6000 to 3500 B.C. For such an extensive time period, the burial corpus is not a sizeable one. In total, it is comprised of 100 burial sites and 400 individuals (Robb 2007: 56). Nevertheless, bioarchaeologists have deepened understanding of everyday life from in-depth, osteobiographic analyses of well contextualized burials (e.g., Robb 2002, 2007). Skeletal data attest to intense physical labor and childhood stress, and most people died young (Robb 2007). The Lovers of Valdaro's ages at death then do not seem so remarkable. Most decedents' bodies were intentionally placed in grave spaces. These positions are informative, though not necessarily for the emotional reasons cited by excavators at Valdaro. Females and juveniles were often—though not

always given mortuary variability—found buried on their left sides and males on their right sides (Robb 2002: 163).

But, the link between placement and sex offers tenuous inferences about gender in Neolithic Italy. Indeed, Pluciennik (1998) has emphasized local contexts, suggesting that a male–female dichotomy was not a basic structuring principle for the society as a whole. On the other hand, Robb (1994, 2007) has stressed that general patterns indicate an overarching gender ideology at work in Neolithic Italy. It is not entirely clear why aspects of both interpretations cannot be put forth to explain the complexities of bioarchaeological data. That is, gender ideology may have created cohesion amongst communities, but circumstances—the unexpected or objectionable—would have required individuals to strategize creatively and act alternatively. Indeed, age, kinship, and/or ability may have shaped social identity more profoundly than sex (or gender) differences in some contexts or during certain points in time. Hence, seeing that questions remain about this pivotal period, intensive analysis of newly discovered Neolithic burials are poised to extend understandings.

Yet, it is arguable that the Lovers of Valdaro obscure more than they elucidate. One reason is that investigators do not seem to have fully exhumed the burial from its original matrix, which is standard operating procedure in bioarchaeology. As a consequence, some key questions remain unanswered. Do the unexcavated portions of decedents' remains bear traces of peri- or post-mortem alterations that may inform the conclusions drawn about their socio-sexual lives? How did researchers distinguish mortuary practices from taphonomic alterations? That is, what if the body positions are not intentional but a consequence of site formation processes spanning millennia? And, if the decedents were not disinterred completely, how did formal analysis of sex, age, trauma, and pathology proceed? Did nonmetric studies and genetic testing rule out a familial link between the decedents?

The lack of professional presentations or scholarly, peer-reviewed publications —most information has been disseminated through museums and journalistic mediascapes—have done little to clarify. One exception is work conducted by Cristina Corti; her trace element analyses of ancient paleodiets have included information about Valdaro's Neolithic decedents (2011; see also Corti et al. 2013). While excavating a Roman villa from the first century A.D., she explains, investigators came across human remains far older in date. In total, they recovered 22 individuals from the Necropolis at San Giorgio Valdaro; its occupation extended from the Neolithic to the Bronze Age (ca. 9000–1000 B.C.). Seven decedents were Eneolithic in date, and seven were from the Bronze Age (Corti 2011: 172). The Lovers—also known as Individuals A and B of Tomb 2 (T2)—were two of eight from the Neolithic period. Radiocarbon testing dated them to approximately 2500 B.C. (Corti 2011: 171–172). None of the Neolithic decedents had been interred in formal graves. Mourners had intentionally placed the corpses in fetal positions. All but three bodies were aligned East–West. The Lovers were North–South with their heads to the North, and the aforementioned "solitario" burial (Individual T3), located just to the East of their double burial, had been placed in a northeast–southwest direction.

Corti's consideration also contains an important piece of information about the double inhumation. The determination of sex goes undiscussed, and it is unclear if analysts used anthropological standards. Nevertheless, Individual A is identified as a female and Individual B is a *probable* male (Corti 2011: 172). The lack of a definitive sex determination for the latter is far from insignificant given the popular representations of this pair as opposite-sex lovers. Taking into consideration the double burial's excellent preservation, consecrated in photographs and affirmed by eyewitnesses, it seems unlikely that key pelvic indicators of sexual dimorphism were obliterated. Perhaps, dimorphic features had not fully developed given this individual's young age at death, 18–22 years old. If undeveloped morphological differences yielded sexual uncertainty, however, the female's young age—16–20 years old at death—would also necessitate a *probable* qualifier, which was not the case. What would archaeologists and the public make of this revelation about Individual B's dubious sex assignment?

4.3 Love for Sale

4.3.1 Valentine's Day

In April 2009, the honeymoon at an end, the Neolithic embracers returned to Mantua. To raise sufficient funds for the construction of their permanent exhibition, concerned members of the community formed the Lovers in Mantua Committee (Comitato Amanti a Mantova).[10] In the meantime, the burial was temporarily displayed at the city's National Archaeological Museum. It was a highly anticipated event set to coincide with the Festivaletteratura, an annual and well-attended literary festival scheduled for September 7–11, 2011. The exhibition's monetary success indicated that the Lovers were quite lucrative. With this in mind, the organizers of Mantua's cultural calendar called again for their display. Romance-themed events to celebrate Valentine's Day 2012 were especially appropriate, they reckoned.[11]

Linking the ancient embraces with Valentine's Day, I believe, demonstrates how normative notions about love take root and become part of a global ideoscape. Rather than universal and timeless, the pairing of love with romance is an outcome

[10]As detailed in a press release on Mantua's tourism website, http://www.turismo.mantova.it/uploads/file/531e6b9fa67e90eb0e7266a47dfe4198.pdf, accessed on 7 May 2013.

[11]Information about the festival "Mantova per Amore" appeared without a by-line in the *Gazzetta di Mantova* on 14 February 2011; the headline read "A Mantova le feste dell'Amore e gli Amanti di Valdaro hanno anche un canzone" (http://gazzettadimantova.gelocal.it/cronaca/2012/02/13/news/san-valentino-a-mantova-feste-dell-amore-al-ducale-meta-prezzo-anche-nbsp-per-le-coppie-gay-1.3177077, accessed on 8 May 2013. See also http://www.youtube.com/watch?v=bWFjYL6DVGM, accessed on 8 May 2013.

of social, political, and economic changes that swept across twelfth century Europe (Bloch 1991: 8). Valentine's Day is a product of these historical shifts. Long before the day acquired a "holi-" prefix, it was tied to the legend of an Italian miracle worker and martyr, likely a composite of several men executed on February 14 in the third century (Kelly 1986; Schmidt 1993). Pathos, it appears, preceded eros. The saint's association with love did not occur until the late-fourteenth century, and was in large part a consequence of ruminations by European poets, most notably Geoffrey Chaucer (Kelly 1986). Gift giving was initiated by and largely constrained to members of the British aristocratic class in the seventeenth century (Schmidt 1993: 215). In its most recent form, one that emerged in the mid-nineteenth century, the holiday has been thoroughly Americanized. Glorification of romantic love and monogamous intimacy are an outgrowth of shifting socio-sexual norms and middle-class consumption. Namely, valentine cards with their unsubtle heteronormative messages about erotic coupling and nuclear family were mass produced, marketed creatively, and exchanged ritually (Schmidt 1993).

Since this time commoditization has extended far beyond cards. According to the National Retail Federation, Americans are projected to spend around $18.9 billion in 2015, making Valentine's Day third amongst national holidays.[12] It is this American version of the holiday—with its intertwining of romantic love, commercialization, middle-class values, and heteronormativity—that has taken root in other countries. That is, as enmeshed within a global ideoscape, a very specific understanding of love flows between borders. At the level of the local, however, the monetary scale may not be as grandiose and cultural nuances emerge in different contexts [e.g., Ghana (Fair 2004); India (Sahni and Shankar 2006); Japan (Creighton 1993)].

Italy, for example, has sought to attract tourists during the holiday, capitalizing on the notion that the nation is, and has long been, for lovers. Global ideoscapes then connect up with ethnoscapes as people move across borders to experience what they believe is culturally authentic. In Mantua, the array of activities planned from February 11–14, 2012 included guided tours (i.e., The Love Bus), lectures, films, museum visits, musical performances, etc. Featured prominently at many events were famous and opposite-sex lovers through the ages. All couples were renowned for their passionate and tumultuous affairs, and some were even homegrown—Matilda of Canossa and Pope Gregory VII, Rigoletto and the Duke of Mantua's daughter Gilda, and of course Romeo and Juliet. Events were designed to spotlight the city's cultural heritage, as well as aid fundraising efforts by the Lovers in Mantua Committee. Photographic images of the Neolithic double burial were ubiquitous. If the city of Mantua had a face over those four days in February, its visage was skeletonized.

[12]Valentine's Day is only exceeded in spending by winter holidays (i.e., Christmas) and Mother's Day (https://nrf.com/media/press-releases/cupid-shower-americans-jewelry-candy-this-valentines-day, accessed 11 February 2015).

4.3.2 *Molti, Molti Turisti*

Beyond a single holiday, many see the marketing of cultural heritage like the Lovers of Valdaro as a pathway to a lucrative cottage industry in romance. In a September 2012 interview with *Citta di Mantova News*, Mantuan mayor Nicola Sodano stated that permanent exhibit of the Lovers would be guaranteed to draw many, many tourists—"molti, molti turisti" in his words.[13] The Lovers entice tourists to cross borders and in so doing bring Mantua further into the sphere of the global ethnoscape. The town's listing as a UNESCO World Heritage site in 2008 has been effective in this regard,[14] and the city's selection as the 2016 Italian Capital of Culture is likely to broaden its appeal as a tourist destination. Eternal love then may be as big a draw as Renaissance art and architecture.

The mayor's comments were made at a reopening of Marzia Migliora's "lei, che non dormiva mai" at Mantua's Piazza Sordello. The artist had reinstalled the piece atop a restored mosaic pavement from the Roman villa associated with San Giorgio Valdaro's Necropolis. The spatial juxtaposition hinted at a contemporaneity that actual stratigraphy did not bear out. Of the other 20 decedents interred at the site, one can only assume that their insufficient star power did not provide as enticing a tourist attraction. Mantua perhaps has little to reap from single interments that spotlight how we all shall die alone. In an economic age when the effects of global recession are strongly felt in post-industrial cities throughout the Eurozone, Mantua's future hinges on the past. Complications to or ambiguities in an eternal love story—queering its key players and their interactions—then has the potential to derail efforts that foster much hoped for tourism in Mantua and the capital it can generate.

On April 11, 2014, the Lovers of Valdaro were put on permanent display at Mantua's National Archaeological Museum (Pinardi 2014). The skeletons, which reside inside a shatterproof glass case, remain embedded within their original block matrix.[15] They are quite popular among visitors. To further realize the museum's educational mission, a comic book of the Lovers' romantic adventures, *Amanti a Mantova*, will be distributed in Italian schools.[16] Nothing in the exhibit's text or the comic book discusses Individual B's probable maleness. This small though crucial piece of information has been edited out of popular and educational accounts. Nor

[13]His interview with Citta di Mantova News can be viewed online: http://www.youtube.com/watch?v=v7vakAUvbC8, accessed on 16 December 2015.

[14]According to UNESCO, Mantua and the neighboring town of Sabbioneta were added to the list because they "are important for the value of their architecture and for their prominent role in the dissemination of Renaissance culture" (http://whc.unesco.org/en/list/1287, accessed 25 March 2015).

[15]See CittaMantova TV's report: http://www.youtube.com/watch?v=htNW3–qnyQ and http://www.youtube.com/watch?v=bWFjYL6DVGM, accessed on 6 May 2013.

[16]The comic book is designed by the Italian cartoonist Giancarlo Malagutti; for excerpts, see http://www.afnews.info/wordpress/2014/04/08/gli-amanti-di-mantova-in-fumetto/, accessed on 26 February 2016.

is there any commentary about romantic love as a product of social, political, and economic changes that are far more recent in human history. In other words, archaeologists, artists, and the public do not regard the Valdaro embracers' love story as a tale of the Stone Age, but rather as one that transcends the ages.

4.4 Embraces Elsewhere: Out of Time, Divorced from Space

The Baader-Meinhof phenomenon, or frequency illusion, explains the occurrence of learning about an obscure word, concept, or event for the first time and thereafter encountering this information seemingly everywhere.[17] It is a handy concept for explaining the recent ubiquity of ancient embraces. The phenomenon also underscores how events surrounding the Valdaro burial are not idiosyncratic but representative. Since the Valdaro discovery (and well before it as a matter of fact), archaeologists have unearthed myriad examples of double burials with loving, opposite-sex embracers. I selected the cases in this section for two reasons. First, they received wide—World Wide Web—coverage that preceded or overshadowed concurrent, peer-reviewed publications. Indeed, in some instances, formal scholarly works have yet to see print. Second, despite coming from disparate cultural contexts and temporal periods, these cases bear a strikingly similar to the Lovers of Valdaro. Rather than coincidence, I believe they are suggestive of how a dominant bodyscape is produced and perpetuated in mediascapes.

Eight months after the Lovers of Valdaro's discovery, archaeologists working in the south-eastern province of Diyarbakir, Turkey, some 2100 miles to the west of Mantua, announced that they had found the earliest evidence of a romantically entangled duo at Hakemi Use. Within two days of its discovery, information about the burial had circulated far and worldwide. An online *National Geographic News* account led with the headline "Oldest Embracing Lovers Found in Turkey?"[18] From beneath the floor of an ancient house, the secondhand report summarized, excavators had unearthed two individuals dating to 6100 B.C. They were identified as a 30-year-old man and a 20-year-old woman. "The way they were buried signifies that they were lovers," [team leader Halil] Tekin was quoted as saying by the state-run Anatolia news agency." A comparison was made with the double burial from Valdaro. An embedded image showed two individuals adjacent, tightly flexed,

[17]Led by Andreas Baader and Ulrike Meinhof, the Baader-Meinhof gang was an urban guerilla group (or left-wing terrorist group depending on where your sympathies lay), which was operative in West Germany started in the late-1960s. The group was later known as the Red Army Faction. According to internet lore, a weblog commentator named the phenomenon in the mid-1990s after hearing about the Baader-Meinhof group twice within less than 24 hours.

[18]http://news.nationalgeographic.com/news/2007/10/071017-turkey-lovers.html, accessed 12 January 2015.

and on their sides. The decedents were not facing each other. Rather, one body had been laid in front of the other.[19] Archaeologists unconnected to the discovery expressed doubts that decedents were embracing, though their comments appeared at the end of news items.

Online sources also neglected to mention that long-term work at the site has reconstructed a bigger, more regionally interrelated picture of the past, which researchers have discussed in peer-reviewed publications (e.g., Tekin 2005, 2007, 2011). The small mound settlement, excavators determined, was occupied from the sixth to the first millennium BC. No less than 95 Neolithic individuals comprised Hakemi Use's mortuary sample (ca. 6100–5950 B.C.) (Erdal 2013; Erdal and Erdal 2012: 80). Most decedents had been buried in flexed positions with at least a few grave goods—ceramic vessels, obsidian items, ear plugs, labrets, stone beads, iron oxide, and spindle whorls, amongst other things (Erdal 2013; Tekin 2005, 2011). Burials were associated with buildings. But, bioarchaeologist Yilmaz Erdal (2013: 125–216) has remarked on the difficulty of determining when interments occurred. Were they coeval with occupation or did they postdate Hakemi Use's abandonment? And, what of the youthful and embracing Romeo and Juliet? Formal analysis of the double burial, a simple pit grave labeled M 215, revealed that the decedents were a 55-year-old female and 50-year-old male (Erdal 2013). This information, however, has yet to circulate in popular media sources. Perhaps news outlets believe that geriatric love would not be as big a turn-on for their readers. Rather, the Romeo and Juliet syndrome remains the dominant narrative in mediascapes.

In October 2011, archaeologists working in Modena, about 45 miles to the south of Mantua, excavated a Roman period burial comprised of a male and female holding hands (ca. A.D. 400–500). "Final embrace," captioned the photograph in one news article (Pisa 2011). As in the Valdaro case, excavators could not help but be moved by the skeletons' juxtaposition. "It was a very touching and beautiful sight to see," bioarchaeologist Vania Milani commented. Future studies, another account explained, would determine decedents' age, cause of death, and relationship to each other (Lorenzi 2011). Yet, proclamations by researchers about their eternal love and matrimonial status—the female may have worn a bronze ring—indicated that they had already drawn several key conclusions. The similarities between the news coverage of the Modena and Valdaro discoveries was not lost on one reader. In the *Daily Mail*'s comment board, Sara remarked: "Must be a slow news day DM. You posted this exact article years ago." My research has indicated that scholarly publications have yet to appear in English or Italian.

[19] *Today's Zaman* on-line 8 October 2007 (http://www.todayszaman.com/newsDetail_getNewsById.action;jsessionid=B96C97478262B7595A4C09FDB7730C90?pageNo=2827&category=100&dt=0&newsId=124094&columnistId=0, accessed 4 May 2013). In its own words, this online news website is "the most-circulating English-language newspaper in Turkey." See also *The Times of India* online 10 October 2007. (http://articles.timesofindia.indiatimes.com/2007-10-10/europe/27983494_1_tomb-archaeologists-excavation-work, accessed 4 May 2013).

Two years after the Modena find, Romania in the springtime was the backdrop for a couple "seemingly bound in a [sic] endless embrace of love."[20] Excavators working in Cluj-Napoca had unearthed "a strange case, a sort of Romeo and Juliet" in the words of lead archaeologist Adrian Rusu.[21] The discovery came just two weeks shy of William Shakespeare's 449th birthday.[22] Rusu aged the individuals, who faced each other and clasped hands, at around 30 years old. Similar to the Valdaro case, journalists deemed the couple "young" and the double burial "rare.[23]" Their grave was associated with a medieval monastery and cemetery (ca. A.D. 1450 and 1550). Some news articles commented briefly that an infant and the lower leg bones of a fourth individual were also found in the grave, but this information was presented as incidental and went unexplained. Again, I identified no scholarly discussions of this double burial during the course of my research.

As 2013 drew to a close, there was news from Siberia of more ancient hand holders. The *Siberian Times'*s headline trumpeted: "Modern Science to Unlock the Secrets of Couples Holding Each Other in Loving Embrace for 3500 years" (Liesowska 2013). In Staryi Tartas, a village some 3800 miles to the northeast of Mantua, archaeologists had excavated not one but dozens of Bronze Age "embraces." The earliest of the burials dated between the seventeenth and fourteenth centuries B.C. Decedents were identified as males and females; no discussion of analytical techniques followed. Photographs showed interments comprised of paired adults and children. As a consequence of the latter's presence, a follow-up news report conveyed skepticism about initial interpretations: "Is It Really Eternal Love Or Just A Crowded Grave? Embracing Skeletons Face DNA Testing To Reveal Relationships" (Miller 2014). Did the burials signal the emergence of the nuclear family unit? First came love and then marriage? Ancient DNA testing promised to reveal the truth about gender relations and familial connections (see Chap. 7).

Yet, in these same news reports, the primary excavator Vyacheslav Molodin did not substantiate or deny that decedents embraced lovingly. His position contrasts markedly with those who excavated the burials at Valdaro. In scholarly publications, he has instead discussed morphological typologies and reconstruction of cultural chronologies (e.g., Molodin et al. 2002, 2012, 2014).[24] And in more

[20]http://www.huffingtonpost.com/2013/04/22/romania-skeletons-holding-hands-cluj-napoca_n_3133860.html, accessed 19 January 2015.

[21]http://adevarul.ro/locale/cluj-napoca/romeo-julieta-cluj-arheologii-gasit-acelasi-sicriu-doua-schelete-intr-o-pozitie-ciudata-1_516fce0c053c7dd83f1f4a13/index.html and http://www.romania-insider.com/romanian-archeologists-uncover-romeo-juliet-medieval-couple-buried-together-with-hands-clasped/96379/, accessed 19 January 2015.

[22]http://www.scienceworldreport.com/articles/6455/20130425/romeo-juliet-skeletons-hands-clasped-discovered-romanian-archaeologists.htm, accessed 19 January 2015.

[23]http://www.counselheal.com/articles/5110/20130425/archaeologists-discover-remains-romanian-romeo-juliet-buried -together-holding-hands.htm, accessed 19 January 2015..

[24]The publications cited here are English-language ones. Molodin, the principal excavator, has also published extensively in Russian, scholarly venues that appear to be peer-reviewed.

popular outlets, he has emphasized the ongoing nature of his archaeological work, the complexity of the mortuary assemblage, and the gaps in researchers' knowledge. "So it is more complicated than 'They loved each other and died in one day'," he stresses in one account (Liesowska 2013). Nevertheless, news reports often counterpoise his statements with theories decidedly heteronormative in their tenor. In mediascapes, both appear to carry equal intellectual weight.

Finally, one day short of Valentine's Day 2015, journalists reported on a discovery made two years prior at Alepotrypa Cave located above Diros Bay in southern Greece. Bioarchaeologist Anastassia Papathanassiou confirmed that a grave contained the bodies of a man and woman, both around 20 years of age, who "most likely died holding each other."[25] At 5800 years old, the Neolithic burial was of greater antiquity than the young Lovers of Valdaro. The Greek Ministry of Culture trumpeted the find's singularity: "Double burials in embrace are extremely rare…The skeletons of Diros represent one of the oldest, if not the oldest, found to this date."[26] To determine decedents' sex, researchers had used ancient DNA analysis. While they may have erred on the side of caution before announcing the find publicly, information about this burial has only been circulated via journalistic mediascapes. The reasons for disseminating in this manner as opposed to peer-reviewed venues where investigators' past scholarly work has appeared are not clear. Nor were the scholarly publications in which bioarchaeologists describe cultural and historical attributes specific to the Greek Neolithic—demographic profiles, paleodiets, disease, trauma, habitual activities, and mortuary variability—mentioned in news reports (e.g., Papathanasiou 2005, 2009; Papathanasiou et al. 2000).

As exemplified by these cases, ancient "lovers" share several common attributes. In general, press releases containing quotations from authoritative archaeologists—and not scholarly, peer-reviewed publications—are the first to disseminate information about double burials. At the time of reporting, human remains may still be in situ, thereby hindering extensive, formal skeletal analysis. The paired individuals interred within are identified as a young male and female, even though they might not be. The attributes or techniques used to determine age or sex (or gender), may not be specified. As a consequence the leap from biological difference to social identity is a short one. That is, male/female is to Romeo/Juliet, husband/wife, primary interment/sacrificial inclusion, etc. Regardless of the degree or type of proximity, posthumous intimacy is described as an embrace. And this body position is cited as evidence for drawing inferences about the couple's romantic and/or conjugal relationship.

Additionally, those who write about double burials are selective with the information they emphasize or pare down. Excavators' emotional reactions to the

[25]http://www.telegraph.co.uk/news/worldnews/europe/greece/11412836/Valentines-Day-Greek-discovery-of-couple-locked-in-six-millennia-old-hug.html, accessed 24 March 2015.

[26]http://news.discovery.com/history/archaeology/skeletons-locked-in-6000-year-old-embrace-found-in-cave-150213.htm, accessed 24 March 2015.

dead are usually highlighted. Archaeologists quoted in news stories may make definitive statements about age, gender, social relationship, and sexual intimacy, but skeptical statements about definitive conclusions are played down. Double burials are described as ancient regardless of the time period from which they come. They are also described as rare. When their body positions are frozen in photographs, decedents come to take on one-dimension. And it is these images and ideas that go viral on mediascapes. The regional mortuary corpus is not discussed so there is no baseline for comparison. Taphonomic processes that affected burials postmortem also go unmentioned. Writers may recount information about the larger spatial context, but coeval or adjacent burials generate abbreviated attention.

Collectively, these examples illustrate that mediascapes are powerful and often subtle tools for communicating ideas about sex, gender, and sexuality. And, in their representations of archaeological bodies, they convey much about our current conceptions of bodyscapes—their idealized and heteronormative understandings of socio-sexual lives—but little about those at work in past cultural systems.

4.5 Nuclear Family Found

Archaeological authorities' and supposedly objective journalists' presentations of embraces do suggest something more troubling. The pragmatics of news publication may not be the reason for excision of information about spatial contexts and conflation of burials regardless of their dates and locations. Rather, at issue for all who disseminate ideas about past socio-sexual relations may be common sense about what comes naturally to humans. The popular appropriation of a Late Neolithic grave from Eulau, central Germany suggests as much.

In 2005, Wolfgang Haak and colleagues uncovered a Neolithic burial site comprised of four graves (ca. 2700–2400 B.C.). The 13 decedents contained within were around 4600 years old. Archaeologists presented their finds in the peer-reviewed and prestigious *Proceedings of the National Academy of Science* (Haak et al. 2008). Other publications followed (e.g., De Jong et al. 2010; Haak et al. 2010; Meyer et al. 2009). As detailed in the *PNAS* publication:

> …grave 99 contained a female (35-50 years), a male (40-60 years), and two children of 4 to 5 and 8 to 9 years; grave 98 contained a female (30-38 years) and three children of 0.5 to 1, 4 to 5, and 7 to 9 years of age. Grave 93 held three bodies: a male (25-40 years) and two children of 4 to 5 and 5 to 6 years of age. Grave 90 contained the remains of two people: a female of 25 to 35 years and a child of 4 to 5 years of age at death. (Haak et al. 2008: 18226)

According to investigators, each grave involved one phase of construction, suggesting simultaneity of decedents' interment and not reentry. Researchers concluded that given their contemporaneity, careful mortuary attention, and perimortem trauma, decedents were killed during or died after a violent and lethal raid. The bodies of several paired interments were flexed with their heads adjacent

and limbs intertwined. Analysts were able to extract ancient DNA from the remains of those well-preserved individuals. Mitochondrial DNA, which is inherited along the maternal line, indicated that two of the three children in grave 98 were genetically related to each other. The associated adult female had no biological relationship to the children with whom she had been interred; researchers speculated that she was an "aunt" or "step-mother" (Haak et al. 2008: 18226). In the case of grave 99, the female belonged to the same haplogroup (K1b) as the children, while the male shared a Y chromosome haplogroup (R1a) with them.

Taken alone, this information about halplogroups' subclades simply tells us that these individuals were part of the same interbreeding social group. But, when wedded with body positions, molecular data are suggestive of a parent–child link between decedents. Hence, in excavators' words, grave 99 offered evidence of a "classic nuclear family" (Haak et al. 2008: 18229). Haak and colleagues do not go as far to argue that the nuclear family is universal. Nor do they identify it as the most ancient human institution. There is after all a sizeable ethnographic corpus that documents diverse arrangements—polyandrous, polygynous, extended, and nuclear. They do not, however, gloss over the heteronormative implications of unearthing a 4600-year-old nuclear family. There were interpretive consequences as their research moved outside of the academy.

News stories about Eulau's grave 99 zoned in on its occupants' shared embrace, ancient date, and nuclear family arrangement. *TIME* magazine voted the "First Family" amongst 2008's top ten scientific discoveries, no less significant than inauguration of the Large Hadron Collider and exploration of Mars's North Pole.[27] News articles' headlines ranged in tone from serious to cheeky:

- The World's First Known Human Family (*Discovery News*)[28]
- Earliest Known Nuclear Family Found; Died in Massacre? (*National Geographic*)[29]
- World's Earliest Nuclear Family Found (*Science Daily*)[30]
- Buried in each Other's Arms: Scientists Discover Remains of World's Most Ancient Nuclear Family (*Daily Mail*)[31]
- Discovered in a tender embrace, the first known nuclear family (UK's *Independent*)[32]

[27]http://content.time.com/time/specials/packages/article/0,28804,1855948_1863947_1863934,00.html, accessed 3 February 2015.

[28]http://blogs.discovery.com/news_animal/2008/11/the-worlds-firs.html, accessed 6 May 2013.

[29]http://news.nationalgeographic.com/news/2008/11/081117-stone-age-family.html, accessed 4 February 2015.

[30]http://www.sciencedaily.com/releases/2008/11/081117192915.htm, accessed 6 May 2013.

[31]http://www.dailymail.co.uk/sciencetech/article-1086703/Buried-arms-Scientists-discover-remains-worlds-ancient-nuclear-family.html, accessed 6 May 2013.

[32]http://www.independent.co.uk/news/science/discovered-in-a-tender-embrace-the-first-known-nuclear-family-1023106.html, accessed 1 February 2015.

- Earliest Nuclear Family Found—Embracing (*Science + Religion Today*)[33]
- DNA Reveals Stone Age Family Took Nuclear Option (*Irish Times*)[34]
- Prehistoric Family Values (*Science*)[35]
- Stone-Age Site Earliest Evidence of Family (*CBS News*)[36]
- The Flintsteins? Germans Find Stone Age Family (*MSNBC*)[37]
- Ancient grave reveals 'Flintstone' nuclear family (*New Scientist*)[38]
- All in the Family: The First Nuclear-Family Grave (*Newsweek*)[39]

The mortuary variability, which scholars documented in peer-reviewed sources, was tangential or ignored altogether in news coverage and blog commentary. Thus, the larger lay audience had little opportunity to learn of assorted kinship arrangements in Neolithic Germany. There was, for instance, minimal musing about grave 93's possible single dad. Researchers' emotional responses to the bioarchaeological find, however, was detailed in popular accounts. In one German-language news story, for instance, Saxony-Anhalt's state archaeologist Harald Meller was quoted as saying, "This is a very touching discovery, we want the people to learn of it today. We have many research results, which are now valid, to reappraise in a story."[40]

After researchers finished their analyses, three of the four graves were placed on permanent display at the Landesmuseum für Vorgeschichte in Halle, Germany (Fig. 4.1). The familiengräber von Eulau, or family graves of Eulau, form a vertical triptych; grave 99 is flanked on the left and right by graves 98 and 90. The skeletons appear in situ and are accompanied by an artist's reconstructions. They look as if sleeping. The renderings of their naked bodies, with genitalia covered demurely, bear none of the violence that immediately preceded their deaths. Though the museum capitalizes on the notion that nuclear families are ancient, questions remain about what qualifies as such in the third millennium B.C.

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[33]http://www.scienceandreligiontoday.com/2008/11/20/earliest-nuclear-family-found%E2%80%94embracing/, accessed 4 February 2015.

[34]http://www.irishtimes.com/newspaper/breaking/2008/1118/breaking29.htm, accessed 6 May 2013.

[35]http://news.sciencemag.org/paleontology/2008/11/prehistoric-family-values/, accessed 4 February 2015.

[36]http://www.cbsnews.com/stories/2008/11/18/tech/main4614701.shtml?source=RSSattr=SciTech_4614701, accessed 6 May 2013.

[37]http://www.msnbc.msn.com/id/27770938/?gt1=43001, accessed 6 May 2013.

[38]http://www.newscientist.com/article/dn16054-ancient-grave-reveals-flintstone-nuclear-family.html#.VNJ8Mi7EiSo, accessed 4 February 2015.

[39]http://www.newsweek.com/all-family-first-nuclear-family-grave-221416, accessed 4 February 2015.

[40]From the news website *Mitteldeutsche Zeitung*: "Das ist ein sehr anrührender Fund, wir wollen diesen den Menschen heute nahe bringen. Wir haben viele Forschungsergebnisse, die es nun gilt, in einer Story aufzuarbeiten" (http://www.mz-web.de/kultur/fernsehen–tatort-eulau-,20642198,17973918.html, accessed 3 February 2015).

Fig. 4.1 Installation of three family graves from Naumburg OT Eulau, district Burgenlandkreis, Corded Ware culture ca. 2659–2501 B.C. (14C-date) at the Landesmuseum für Vorgeschichte in Halle (Saale). (Reproduced with permission of Landesamt für Denkmalpflege und Archäologie Sachsen-Anhalt (State Office for Heritage Management and Archaeology Saxony-Anhalt). Photograph by Juraj Lipták, LDA)

If we accept body position and genetic data as sufficient evidence of kinship, a term that has as much if not more to convey about social organization, why is the arrangement unquestioningly nuclear? Neolithic nuclear families may have comprised two individuals of the opposite-sex and their two children, but how do we know grave 99 contained all family members? Perhaps, there were additional cohabitating kin, more suggestive of an extended family, who survived the community's attack. Or, it is equally feasible that the nuclear family concept had no applicability in the Central European Neolithic. It is after all an etic categorization, useful as a heuristic for contemporary researchers but also subject to conceptual revisions.

Anthropologists have redefined the nuclear family to reflect the sociopolitical times. Widely used undergraduate introductory textbooks reflect the term's dynamism. For instance, in *Cultural Anthropology: The Human Challenge*, a textbook now in its thirteenth edition, William Haviland and colleagues (2010: 228) define nuclear family as the following: "A group consisting of one or two parents and dependent offspring, which may include a stepparent, stepsibling, and adopted children. Until recently this term referred only to the father, mother, and the child (ren) unit." In the ninth edition of *Cultural Anthropology: An Applied Perspective*, Ferraro and Andreatta (2012: 227) have likewise modified the definition to circumvent heterosexism: "Consisting of husband and wife (or same-sex couple) and

their children, the nuclear family is a two-generation family formed around the marital union." Two of but many textbook examples. It is not just a matter of semantic shifts. Variability, many anthropologists stress, has characterized family structures and socio-sexual interactions through space and time.

Moreover, Haak and colleagues' assignment of social identities rests on the assumption that "the arrangement of the dead seems to mirror their relations in life" (2008: 18226). But, why presume that mortuary assemblages are a direct and/or uncomplicated reflection of interred individuals' social persona during their lives? This notion is central in early processual studies of mortuary remains, as first outlined by Saxe (1970) and Binford (1964, 1971).

Appropriating ideas from sociocultural anthropologist Goodenough (1966), Saxe and Binford argued that over the course of an individual's life, one acquired various social identities through ascription and/or interaction. Society's perception of an individual's identity, though not the individual's conception or presentation of self (an additional facet of Goodenough's theorizing), is reflected materially. According to the Saxe-Binford theoretical perspective, death required the display of select and appropriate social identities, which were contingent on "age, sex, social position, subgroup affiliation, cause of death, and location of death" (Binford 1971: 18). The resultant composite is known as a social persona. Generally, a decedent's social persona encompasses identities that were the most socially influential. Kings, for instance, are generally buried with royal trappings, whereas it may be less obvious from burial data that the king was also a father, brother, or amateur banjo player. Social personae, researchers maintained, shed light on social organization. Additionally, increasing mortuary variability signaled increasing social complexity and hierarchical ranking. As O'Shea (1984: 3) later synthesized, processual approaches to mortuary practices start with "the assumption that an individual's treatment following death bears some predictable relationship to the individual's state in life and to the organization of the society to which the individual belonged." With such a theoretical frame in place, Eulau's grave 99 likely contained a nuclear family at a very early juncture of humanity's social evolution.

And yet, it is assumptions about seemingly transparent social identities that subsequent archaeologists have found lacking. "Burial ritual is susceptible to ideological manipulation within the construction of social strategies," noted Pearson (1982: 99). We should not read the mortuary record as an unmediated episode of past events and identities. A decedent's role in life can guide mortuary practices. But, mortuary practices may also be informed by the circumstances of death, political strategizing on the part of the living, and beliefs about living bodies, corpses, the afterlife, ancestors, etc. As such, information gleaned from burials may mask rather than illuminate past social organization and identities.

In the case of grave 99, we then need question decedents' identification as members of a nuclear family. Yes, when taken together, body positions and biological data can be interpreted as a familial relationship beyond the simple (and sterile sounding) interbreeding social group. But mtDNA, for instance, tells us something about the relationship along one's maternal line not necessarily maternity. Grave 99's female could have just as easily been a maternal aunt or

grandmother. The possibility is certainly feasible seeing that she was 35–50 years at the time of death, a ripe old age by Neolithic standards. An alternative explanation may also be posited for grave 99's male. Testing for information about one's paternal line is no guarantee that paternity will be revealed. At 40–60 years old, this male may have acted as an elder, paternal uncle or grandfather to the children with whom he was interred. These possibilities invite deliberation about a community's or culture's ideological understanding of "family" and just what comes naturally.

Contained within the comments of *The Daily Mail*'s online news story "Buried in each other's arms: Scientists discover remains of world's most ancient nuclear family" was one verbose reaction to the discovery at Eulau.

> Fascinating stuff! This proves that humanity evolved into families naturally and is one in the eye for the Lieberal [sic] intelligentsia who would have us believe the traditional family is not the best, or only way to live and have done their best to destroy it and replace it with the virtual anarchy that you see around you.
>
> In other words, they would have mankind revert back to pre nuclear family days to polygamous matriarchal societies where males were transient sperm donors and hunter gatherers.
>
> They have been partly successful with the creation of welfare dependent "ghetto" cultures where paternity is often unknown and the transient male "hunter gatherers" forage for items in gangs. The proceeds are brought to women in exchange for sexual favours and the chance to pass on their genes.
>
> Primitive society recreated courtesy of Leftism!
>
> - John Smith, London UK, 20/11/2008 10:58[41]

Granted, John Smith is one lone and dogmatic voice on the comment board of a tabloid online newspaper. (And the double meaning of "virtual anarchy" seems to be lost on him). Yet, there is much, I would argue, that we may extrapolate from his statements about wider social attitudes—a backlash to feminism's gains, social welfare reforms, nonnormative family arrangements, proper grammar. His response is predicated on a belief that modern politics and culture have sabotaged human nature as it pertains to sex, gender, and sexuality. And in this sentiment, he is far from alone.

4.6 Human Nature

4.6.1 Paleoanthropologists' Portrayals

Heteronormative notions about human nature are often subtext in representations of Neolithic embraces. But, as some have proposed, what comes naturally to humans may predate this transformative period by many millennia. Scientific arguments for sociobiological positions on socio-sexual lives were first explicitly addressed in

[41] http://www.dailymail.co.uk/sciencetech/article-1086703/Buried-arms-Scientists-discover-remains-worlds-ancient-nuclear-family.html?ITO=1490, accessed on 4 December 2009.

anthropological discussions of "man the hunter" (e.g., Washburn and Lancaster 1968). See Chap. 5 for a discussion of researchers' presumptions about the sexual division of labor as defining humans' humanity. So the argument went, men's ability to hunt made humans' distinct from nonhuman primates. Women, on the other hand, remained in the background, dependent, subservient, and immobile as a result of childbearing and caring. They were along for the evolutionary ride (Fedigan 1986).

Paleoanthropologists contributed by discussing the development or origin of associated social behaviors, namely monogamy, heterosexual pair bonding, kinship organization, and division of labor (e.g., Alexander and Noonan 1979; Hill 1982; Isaac 1978; Lovejoy 1981). Isaac (1978), for instance, proposed that as early as two million years ago, males distinguished themselves as hunters and tool makers. Successful ones returned to "home bases" to share the meats of their labor with long-term female mates and offspring. He refers to this relationship as "marriage." For their part, females' subsistence responsibilities involved gathering plants, though he found their contribution far more challenging to document archaeologically. "What is certain," Isaac (1978: 102) stated, "is that at some time during the past several million years just such a division of labor came to be a standard kind of behavior among the ancestors of modern man [sic]." Feminist-inspired paleoanthropologists in turn effectively exposed the contemporary and latent sexism in these models, as well as the paucity of evidentiary support (e.g., Adovasio et al. 2007; Falk 1997; Fedigan 1986; Hager 1997; McBrearty and Moniz 1991; Taylor 2006; Zihlman 1995, 1997).

Despite longstanding critiques, however, some paleoanthropologists remain committed to heterosexist portrayals of our hominin ancestors. Monogamy, influential scholars have argued in quite prestigious academic journals, characterized *Australopithecus afarensis* (Larsen 2003; Reno et al. 2003). As a reproductive strategy, it would have entailed male provisioning for females and offspring (Reno et al. 2003: 9408). In summation, australopiths' socio-sexual arrangements were monogamous, heterosexual, and organized around a patriarchal, nuclear family. The appearance of this sex/gender system some three million years ago would suggest it is a facet of human nature. Yet, the evidence is thin for such sweeping statements about humankind. Paleoanthropologists' inferences are drawn from the fragmentary body parts of approximately 300 individual australopiths.

These interactions may have even characterized our nonhuman primate relatives. Using primate data to infer the evolutionary history of social systems, behavioral primatologists' accounts of pair-bonding, sexual division of labor, and kinship relations are also tied tightly to nuclear, conjugal, and heterosexual arrangements (e.g., Chapais 2009). And for many evolutionary anthropologists and psychologists who regard emotional attachment as imbricated with mating, the cultural contingency of romantic love is immaterial (e.g., Fisher 1992, 2004). Romantic love, like maternal love, neurobiologists Andreas Bartels and Semir Zeki tell us, are "linked to the perpetuation of the species and therefore have a closely linked biological function of crucial evolutionary importance" (2004: 1155; see also 2000). Implicit in these studies is the notion that romantic love occurs between two individuals of

the opposite-sex. At a universal and basic level, it would appear, we are all fanning peacocks and fawning peahens. Moreover, it appears altogether possible that oversimplified sociobiological research, which receives its equal share of sensationalized media coverage, may in turn offer the patina of scientific legitimacy to news stories about embracers from the Neolithic, or any prehistoric period for that matter. Thus, regardless of one's specialization within biological (or physical) anthropology, heteronormative ideas are pervasive, which suggests they may function as subdisciplinary received wisdom.

4.6.2 *Australopithecus in Action*

In popular presentations, the socio-sexual dimensions of our human nature are typified by widely circulated depictions of australopiths trekking across an otherwise empty landscape. There are multiple variations on this theme but in general a paired male and female are focal. Marrying art and science, museum dioramas incorporate two normative bodyscapes. As a consequence, they communicate some powerful, though far from original, messages about ideal bodily difference—aesthetically and anatomically, speaking—and social relations. One ubiquitous and easily recognizable example based on footprints from Laetoli, Tanzania is on permanent display at the American Museum of Natural History (AMNH).[42]

Uncovered by Mary Leaky and colleagues in the late 1970s, the Laetoli footprints were fossilized in volcanic ash some 3.6 million years old. The find was exciting and compelling. The preserved ash showed the repeated meanderings of various animals—hyenas, birds, giraffes, etc.—across the savannah as the dry season yielded to the rains (Leakey and Hay 1979). Most noteworthy were impressions left by three *Australopithecus* hominins in the wet ash.[43] One individual appeared to be walking alone. The other two traveled in succession (Leakey 1981); whether or not they did so together remains in question. One of the paired prints is larger in length, width, and length of pace. These bodily traces of something usually so ephemeral on a landscape have provided a rich dataset for inferences about human evolution and behaviors. As evidence of early bipedality, the

[42]For a widely circulated photograph of the diorama, centrally located in the Anne and Bernard Spitzer Hall of Human Origins, see http://archive.archaeology.org/image.php?page=0705/trenches/jpegs/amnh.jpg, accessed on 18 March 2016.

[43]Scholars of human evolution are a cantankerous bunch when it comes to matters of taxonomy, and the controversy over proper terms may be lost on the general public. For good reason, of course; it gets a bit tedious. But, to clarify, Wood and Richmond (2000) have distinguished between hominid and hominin. Hominid, they explain, is shorthand for the family Hominidae; it includes the common ancestor of the living African apes (i.e., genus Homo, Pan, and Gorilla) and all of its descendants. Hominin refers to humans' distinct evolutionary path and members of the tribe Hominini, which is inclusive of the subtribes Australopithecina and Hominina.

find is not especially controversial (though paleoanthropologists continue to quibble over the printmakers' species). The diorama and what it communicates about sex and gender, however, has long generated feminist ire (e.g., Haraway 1989; Zihlman 1997).

From 1993 to 2005, the Laetoli diorama was located in AMNH's Hall of Human Biology and Evolution. In the exhibit, a female australopith walked adjacent to her larger male counterpart. He casually draped his left arm over her shoulder. Their famous footprints trailed behind them, impressed into the ash while their volcanic source loomed in the background. Aside from the couple, the painted landscape is mostly empty. Compared to modern humans, both seem diminutive. But, at 4 feet 6 inches, the male cut a more imposing figure than his female companion with her 3 feet 5 inches frame.

Despite the diorama's presentation of the past, australopiths' sexual dimorphism and external appearance (hair distribution, skin color, nose form, etc.) are debatable, as feminist critics have noted (Hager 1997; Zihlman 1995, 1997: 107). The exhibit's creators, influential scholars in their own right, have also edited out key details. There is, for instance, no visual reference to a third individual. Physical anthropologist Adrienne Zihlman (1997) has also found it troublesome that the two bodies are positioned so as to suggest a specific power dynamic—a male that protects and/or comforts a female in need. Finally, the prehistoric couple is "freeze-framed…as though they do not belong on the savanna at all" (Zihlman 1997: 108). This decontextualization of the two australopiths from their larger social and ecological setting, according to her, calls to mind Old Testament narratives about Adam and Eve's expulsion from the Garden of Eden.

In 2005, the Hall of Human Biology and Evolution was closed for renovations. Two years later, on February 10, 2007, museum supporters gathered to celebrate its reopening. Today the newly christened Anne and Bernard Spitzer Hall of Human Origins features a revised "Family Tree" and the latest technological advances, as well as several dioramas from the previous hall. The Laetoli australopiths were repurposed and are now enclosed within a freestanding glass case that is central in the new exhibit. As a result, visitors are brought into closer contact with the couple. Otherwise, they remain unchanged in appearance or posture. The image of the "Drudge on the Hide," which Diane Gifford-Gonzalez (1993) took to task for its portrayal of females as passive and marginal, also makes an appearance in the diorama depicting a Neanderthal campsite (see Chap. 5).

Moser and Gamble's (1997: 210) insight from two decades ago is no less applicable now: "Despite the enormous growth of knowledge on human origins," they chide, "the basic explanatory themes have not changed." Riches of fossil data have yielded impoverished reconstructions, and innovative, critical theories about socio-sexual lives have made few inroads. Why the hall's cocurators, paleoanthropologist Ian Tattersall and geneticist Rob DeSalle, did not revise these stories, choosing instead to repurpose dioramas that feminist scholars have effectively debunked, remains unclear. It is possible that their scholarship may be sloppy or

their ignorance willful. Yet, it is also as likely that common sense exercises a powerful and unconscious hold, even on eminent intellectuals (see Chap. 3).

The exhibit's new dimensions also reveal how the contemporary, dominant bodyscape further fragments and essentializes the human body. Granted, genetic and isotopic studies have revolutionized and deepened our understanding of humans and their evolutionary trajectory. But, at the micro-level of analysis, we are nothing more than atoms and DNA molecules. As a consequence, the complexities and dynamism of socio-sexual identities often go unaddressed.

What museum visitors encounter in renovated exhibits are grand narratives about socio-sexual lives—ones that are biologically deterministic, empirically lacking, and heterosexist. The five million people who visited the museum in 2013 took these representations as aesthetically pleasing and authoritative statements about human nature. Clearly, AMNH's number of visitors exceeds readers of academic journals. Hence, such recreations are persuasive, educational tools for the public, as is their presentation in the mediascapes utilized by the museum. The former point is not a new one (Hager 1997: 15; Haraway 1989; Moser and Gamble 1997; Zihlman 1997). But, it does bear repeating loudly and often. The notion that the happy couple laid the groundwork for future human behaviors is not different from that which gets published in journals, but given its audience a much wider swath is cut.

4.7 Queer Arrangements

What would an alternative vision (or visions) of the hominin past look like? In the case of the Laetoli australopiths, museum curators certainly could have imagined other and equally legitimate identities and interactions. The different size of the footprints may have signaled siblings from discrete age cohorts or perhaps an adult–child pair. Given a debate surrounding the printmakers' taxonomic categorization, it is also possible that divergent species with observable morphological differences made the impressions. Hence, it appears that far more important than the printmakers' sex, which is often the emphasis, was their age and/or species. Time may also be a factor; australopiths perhaps traveled along the same path but at separate intervals.

As we have seen, mediascapes' representations of bodies do play a significant role in fossilizing and perpetuating heteronormative notions about sex, gender, and sexuality. But, they also offer a space for virtual anarchy. Of course, whether or not alternative narratives shed light on emic understandings of bodyscapes is debatable, a point to which I will return. When news of the Valdaro Lovers circulated, members of the blogging ranks weighed in. A few took the initial (and informal) sex determination at face value but suggested that the male–female pair were siblings. Far more frequently, however, commentators raised doubts about the decedents' sexes. One website, Freethought Forum, included the following dialogue between cappuccino and livius drusus:

> cappuccino: Won't it be ironic if both of the skeletons turned out to be male?
>
> livius drusus: I don't know about ironic, but it would be rather delicious. I suspect they know the genders [sic] just from looking at the shapes of the pelvises, though, so I doubt they'll be talking about the Neolithic Adam and Steve anytime soon.[44]

A writer for Queerty, a leading news website for LGBT issues, echoed these statements about the decedents' male sex.[45] In reply, one reader commented, "I bet if the archeologists found two obviously male skeletons in this position, the headline would be 'Warriors Struggle to Mutual Death'."

These exchanges raise several valid points about queer arrangements. While many initially presume, including specialists, that double burials comprise male–female pairs, the presence of two males embracing instead requires substantial proof. It also appears unlikely that either arrangement would generate widespread interest if the couples were portrayed as romantically involved. Rather, decedents' identities need to fit with contemporary social norms about kinship and masculinity. That is, incest is still a big no-no and the idea that males are naturally aggressive holds a certain cache. Otherwise, these interments may be expunged not just from the mediascape but also the bioarchaeological record. Such skepticism seems warranted in light of the controversy and question marks that have surrounded an Iron Age (ca. 700 B.C.–A.D 500) double burial from the Netherlands.[46] The burial was originally thought to contain decedents of the opposite-sex, but follow-up reassessment identified two male individuals.

While working one summer day in Bourtanger Moor, peat cutters accidentally uncovered the preserved bodies of two individuals. Glob (2004 [1965]), chronicler of Iron Age bog bodies from northern Europe, described the find:

> Two bodies together, a man's and a woman's, were recovered at the end of June in 1904 at Werdingerveen in the province of Drenthe, in Holland. They lay, naked and on their backs, rather more than eighteen inches down at the junction between the grey and the red peat. The woman rested on the man's outstretched right arm. Only his skin was preserved. He was five feet ten inches tall and in the region of the heart there was something that looked like a wound. The woman's hair was long and very fine and a shiny brown in color, as was her skin.

The protective pose and proximity, researchers and museum curators long maintained, was evidence of the decedents' heterosexual, conjugal union. The Weerdinge couple was christened Mr. and Mrs. Veenstra, "veen" being Dutch for bog (Lobell and Patel 2010). More familiarly, they were called Darby and Joan. Many could not help but describe them as Romeo and Juliet preserved in peat (Van der Sanden 2005: 680).

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[44] http://www.freethought-forum.com/forum/showthread.php?p=34832, accessed 28 January 2015.

[45] http://www.queerty.com/undying-love-proven-by-dead-lovers-20070207/, accessed 28 January 2015.

[46] More recently, researchers have used accelerated mass spectrometry (AMS) radiocarbon dating to determine that the individuals died between 115 B.C. and A.D. 50 (Van der Plicht et al. 2004).

As often occurs in northern Europe's bogs, skeletal materials had largely dissolved, while skin, hair, and internal organs had preserved. The exceptional preservation of parts that are often perishable is the complex and variable outcome of specific environmental circumstances—a wetlands that is cold in temperature, lacking in oxygen, acidic in pH, and comprised of sphagnum moss with its antimicrobial properties. In this setting, taphonomic processes often work to decalcify bones, while the body is essentially tanned like a hide. Hence, bog bodies may often retain their genitalia. It seems likely that researchers used Darby's preserved genitalia to determine sex, seeing that a recent study confirmed the presence of a shrunken penis and scrotum (Granite 2012). Analysts also noted the stab wound through which his intestines spilled out (Aufderheide 2003: 175). In contrast, Joan's overall preservation was inadequate; sex appears to have been based on shorter stature and flowing locks of hair.

Excavation of the bodies maintained their positioning. Still touching and one-dimensional, they are housed today at the Drents Museum in Assen. Their exhibition is artistic in its effect—"pressed flat and shadow-like, looking almost like photographic prints made in nature's own darkroom" (Sanders 2009: 107). Similar to the Lovers of Valdaro, they have played muse to creative types. In Sylvia Kantaris' 1989 poem "Couple, Probably Adulterous (Assen, Holland, circa Roman times)," the Weerdinge decedents' embrace was between adulterous, opposite-sex lovers (Sanders 2009: 107–110). A nonmonogamous sexual relationship certainly queers narratives about conjugal union. Nevertheless, the illicit nature of their affair, Kantaris poetized, could only result in silence and death.

In 2002, the Weerdinge bog bodies set off on an international tour as part of *The Mysterious Bog People* traveling exhibition. The couple was not the face of the exhibit, however, seeing that theirs had not preserved. That honor went to Yde Girl, a 16-year-old-girl also from the Netherlands who was strangled to death (O'Reilly 2005). But, the exhibition's organizers did update the Weerdinge decedents' story. Forensic reanalysis, which seems to have occurred at some unspecified date in the 1990s, revealed that Joan was in fact a John.[47] It is still not transparent what evidence was used to reassign sex. Genetic testing is unlikely seeing that researchers are still unable to recover DNA from their hair and nail samples (Bengtsson et al. 2012). Several researchers have also noted that the presence of skin made it difficult to assess the few preserved skeletal elements (Granite 2012; Van der Plicht et al. 2004). The observation indicates that like aforementioned

[47]Once Joan was sexed as a male the name was switched to John. The irony of this name switch should not be lost on those who are familiar with John Money's famous John/Joan case. Born a male, "John" (i.e., Bruce Reimer) was the victim of a botched circumcision, and Money, a prominent sexologist and psychologist, advised that his parents permit complete sex reassignment and raise the child as a girl, or Joan (i.e., Brenda Reimer). What was initially thought to be successful socialization process was used to justify Money's treatment of children with intersex conditions. Soon after puberty, however, Joan chose to live as a man. He later changed his name to David Reimer, but committed suicide at the age of 39 (Colapinto 2000).

ancient embraces, the bog bodies have never been fully fragmented for a thorough examination [cf. Bianucci et al.'s (2012) analysis of Zweeloo Woman].

Despite the gaps in their story, the inferences drawn about the Weerdinge decedents' socio-sexual relationship have been subject to revision. Whereas the double burial historically invited ruminations about eternal love, current inferences about its significance are overwhelmingly tied to violence, warfare, and/or ritual killing (e.g., Granite 2012). This narrative is in line with conclusions drawn about other bog bodies. For instance, in the case of an Iron Age double burial discovered in the Great Bog near Hunteburg, Germany, archaeologists have suggested that its two male decedents, who were sexed based on their preserved genitalia, were sacrificed to ensure military success (Veil 2005). That aggression and not nurturance or love characterized these males' relationships does fit with biologically deterministic notions about masculinity. But, others have argued that in the specific case of the Weerdinge males, if the two had been intimately involved, perhaps violation of moral codes provided plausible explanation for their violent deaths. In support, researchers cited Roman historian Tacitus (ca. A.D. 56–117) who claimed that drowning in the sanctified space of a bog was the punishment for such social deviance (Kehne 2005: 95–96; Van den Broeke and Hessing 2005; Williams 2003).

4.8 It is Complicated

4.8.1 Niankhkhnum and Khnumhotep

There is a reason why all of this matters. Critical assessment is crucial for it reveals which reconstructions of socio-sexual lives are celebrated and which ones are erased or revised. Evaluation also demonstrates the way that presentist and heteronormative ideas find their way into the inferences we draw about the past. As Dowson (2006) has recognized, questioning content about sex, gender, and sexuality is but one side of the coin. Production of knowledge about the past is tightly bound to the discipline's contemporary sociopolitics. That is, not just anyone is authorized to tell stories about the past. Mediascapes then can, but do not always, offer opportunities for queer departures. One such example is the case of Niankhkhnum and Khnumhotep, two royal manicurists living in Old Kingdom Egypt.

In 1964, archaeologists working in Saqqara's necropolis discovered the Fifth Dynasty (ca. 2380–2320 B.C.) tomb of Niankhkhnum and Khnumhotep (Moussa and Altenmüller 1977). In life, the two men had held prominent positions serving the king. They both held the titles of royal manicurist and inspector of manicurists of the Palace. In death, their double tomb ensured their shared afterlife for eternity. Investigators never did recover their human remains, but the tomb's iconography points to their postmortem cohabitation. Reliefs portray the two men embracing, holding hands, gazing into each others' eyes, and nose kissing. The men's wives and children also appear, though Khnumhotep's wife was intentionally erased in

one scene. None dispute the tomb's singularity. But, its significance and the nature of the men's relationship—the tomb's hieroglyphs are silent on the matter—have engendered heated debate.

Historically, archaeologists claimed that Niankhkhnum and Khnumhotep were brothers, perhaps even twins (Baines 1985; Moussa and Altenmüller 1977). More recently, queer scholars have argued that the men were involved in a same-sex relationship (Dowson 2006, 2008; Reeder 2000, 2008). Citing imagery from other tombs, Reeder (2000) has pointed out that it is the two men who appear intimate and conjugally bound, not the men and their wives. Many prominent Egyptologists, however, remain wedded to the idea that the men were kin. How can they be involved in a "gay" relationship, they counter, if the men had wives and children? (That never happens, does it?). And sometimes, heterosexist explanations fly in the face of reason and evidence. David O'Connor, for instance, has suggested that Niankhkhnum and Khnumhotep were conjoined twins despite the latter having died before the former (Dowson 2008; Reeder 2008).

This debate reached a head in December 2005 at the conference, "Sex and Gender in Ancient Egypt," which was sponsored by the University of Wales Swansea. Reporters covering the event then disseminated news of the controversial tomb to a wider audience. Though the source was reputable, the *New York Times* headline sounded sensational: "A Mystery, Locked in Timeless Embrace." In the article, John Baines from the University of Oxford cast further doubt on Niankhkhnum and Khnumhotep's intimate coupling. "The gay-couple idea is essentially derived from imposing modern preoccupations on ancient materials and not attending to the cultural context," he stated (Wilford 2005). Of course, Baines's statement also indicates that he has reflected little on the contemporary heteronormative attitudes that inform his own inferences about this ancient case study. As Dowson (2008) has pointed out, latent homophobia may be one compelling explanation for scholars' sustained commitment to inferences about Niankhkhnum and Khnumhotep's fraternal relationship.

Interestingly, Baines's comments challenge his earlier peer-reviewed statements about mortuary variability amongst members of the elite. "Sparse indications, notably in texts," he and Peter Lacovara (2002: 7) have written, "suggest that Egyptian culture was not unified in its perceptions of mortuary needs and destinies, and that attitudes to death and the dead were as contradictory as in many societies." Suffice to say, there is longstanding reticence on the part of most scholars to acknowledge or even entertain the possibility of a queer arrangement that was either accepted socially or transgressed ancient Egyptian socio-sexual norms. As to why, feminist philosopher of science Helen Longino (1989: 214) sheds some light. "Success requires that we present our work in a way that satisfies those standards," she has written, "and it is easier to do work that looks just like work know to satisfy them than to strike out in a new direction."

The case of Niankhkhnum and Khnumhotep and controversy surrounding its queering Dowson (2006: 98) has noted, indicate that one of two things must occur. If this ancient Egyptian couple were intimate, then who can participate in a conjugal union requires revision. Or, if the men are not intimate, then Egyptologists must

rethink the meaning of iconographic themes historically described as conjugal. Either way and despite the hard intellectual labor this will entail, overhauling understandings about sex, gender, and sexuality in ancient Egypt seems to be exactly what is needed.

4.8.2 *The Gay Lay Public*

Baines, however, is not totally off the mark with his comment about contemporary sociopolitical preoccupations. Describing Niankhkhnum and Khnumhotep as "gay" or "homosexual," as many news stories have done, fails to recognize these categories of personhood for what they are—constructs formalized in the nineteenth century (see Chap. 2). As such, they are inadequate descriptors of ancient socio-sexual lives. Nevertheless, UK's *The Times* headline queried "Mwah … is this the first recorded gay kiss?" (Holland 2006). And, the *Weekly World News* blared, "World's Oldest Homosexual Tomb Found in Egypt." Clearly, the prestigious positions held by Niankhkhnum and Khnumhotep, the tabloid story noted, proved that the pharaoh was no homophobe. (Of course, the decedents' sexuality aside, the source's creditability may be in question since an adjacent story accounted for the 500,000 people who floated in midair that year).

Such news coverage, I would suggest, is the main reason that Niankhkhnum and Khnumhotep's tomb has captured the attention of so many outside of the academic community. It resonates with the LGBTQ community's contemporary sociopolitical agenda. The ancient tomb, for instance, is often included as a prefatory example in the LGBTQ's historical trajectory (e.g., Aldrich 2012; Chiasson and Sanlo 2013: 11). Thus, while academics have been reticent to embrace the idea that Niankhknum and Khnumhotep were involved in an intimate same-sex relationship, the gay lay public has not.

Amidst the academic controversy about Niankhkhnum and Khnumhotep's relationship, the double tomb went on to become a gay tourist destination (Holland 2006). More than a bucket list experience, these ancient socio-sexual lives offered a touchstone for present-day existences and intimate interactions. We can draw parallels between these ancient Egyptians and the Neolithic Lovers from Valdaro. That is, narratives about eternal love are presented as the impetus for heritage tourism. Yet, the contemporary significance of Niankhkhnum and Khnumhotep's tomb requires deliberation about the decedents' same-sex relationship and this archaeological site's geopolitical location. What, I wonder, in this particular instance, could happen as a result of bodyscapes intersecting with ethnoscapes and ideoscapes?

First, archaeological tourism to sites professing to feature ancient same-sex pairings or eroticism may risk reifying biologically deterministic understandings of sexuality. To do so runs quite counter to queer intellectual and political agendas that work to destabilize understandings of gender and sexuality as hardwired or immutable.

Visitation to Niankhkhnum and Khnumhotep's tomb may also "out" foreign tourists as gay. Given the Egyptian government's current stance on homosexuality, its illegality and punishability, visitation could endanger LGBT travelers. Like Italy, Egypt relies on tourists' dollars and euros and pounds, etc. Foreign tourism, though dramatically impacted following the political unrest of 2011, is a mainstay of Egypt's economy, accounting for about 12 % of the nation's total gross domestic product (World Travel and Tourism Council 2014). But, it may also be that not all types of tourists are welcome. Moreover, just as much at issue, is economic support for a nation's tourist industry where political, juridical, and military institutions work to violently eradicate the socio-sexual lives of local LGBTQ community members.

Finally, it is worth pointing out that a certain variety of gay tourist would likely frequent the tomb—a European or Euro-American (i.e., white), male tourist of sufficient economic means. Hiram Perez (2005: 178) has argued that such an individual often does not stop to reflect on "privileges of class, race, citizenship, and quite often also gender" (see also Puar 2002). Accordingly, their patronage, while liberating for them, can come at the expense of others. Certain spaces and bodies, specifically those belonging to people of color and/or precarious economic circumstances, become the focus of fantasized consumption and objectified desire. Heritage tourism then may have unanticipated, homonormative outcomes. In other words, gay leisure tourism to the Global South would work to reinforce socioeconomic inequalities and misperceptions about local or indigenous people as precivilized, primitive, and idyllic.

4.9 Conclusion

Double burials whose decedents have been characterized as embracing are informative, provocative, and misunderstood. Archaeologists' statements and popular accounts, in particular, have generated much heat though little light (an outcome we would imagine might facilitate erotic couplings). Rather, representations of ancient embraces have produced a bodyscape that envisions decedents' proximity as compulsory heterosexuality and/or conjugality. We should also inquire why the rush to make public pronouncements about such provocative finds, which in several instances occurred prior to vetting in peer-reviewed forums. At best, these actions could be read as enthusiasm, but at worst they appear scientifically unethical. Dissemination and consumption of such images and information often occurs with minimal consideration of cultural and temporal contexts. Subsequently, mediascapes generate narratives about the eternal nature of romantic love between a man and woman—the naturalization of the Romeo and Juliet Syndrome.

And yet, if anything, the examples discussed in this chapter demonstrate just how complicated it can be. Various nonspecialized publics—whether gay, straight, queer, etc.—often want to see their present-day experiences reflected in prehistory.

The media who produce narratives about the past may be incentivized to draw traffic to websites. The accuracy of their portrayals then can be an afterthought or irrelevant altogether. And specialists themselves represent a microcosm of the larger world in which we all live. Hence, some may contribute, intentionally or unwittingly, to commonsensical media narratives, while others may actively resist them. The question remains, how to remedy presentist and heteronormative portrayals of past socio-sexual lives in scholarly and popular forums?

For their part, bioarchaeologists should not discount their significant role in producing and disseminating knowledge. Publication in peer-reviewed, scholarly venues is crucial for countering a priori ideas about past socio-sexual lives, like those advanced in the case of ancient "embraces." Bioarchaeologists then need to develop more complex narratives about past sex/gender systems. Seeing that they are committed to first teasing out cultural specifics and historic circumstances, investigators need only build on this solid foundation. Erdal's reassessment of the double burial at Hakemi Use, for instance, demonstrates how effective these efforts can be and why they are necessary. Additionally, queering burials—all burials not just those that appear to include individuals of the same sex—provides a springboard for documenting the diversity that likely characterized past peoples social arrangements and intimate interactions.

Granted, such work can proceed at a far slower and more careful pace, and findings may not generate the same popular interest. Specialists then should work to disseminate their research beyond the confines of the academy. There are different strategies bioarchaeologists can adopt for doing so. They can, for instance, actively seek out and collaborate with journalists. They should exercise extreme caution when making statements in media that are mass marketed and disseminated globally. They may also take it upon themselves to write for popular audiences about past socio-sexual lives, as well as contest—repeatedly with evidence, authority tempered by humility, and transparency—representations that are sexist, homophobic, racist, presentist, or just plain incorrect. In this manner, scholars can use mediascapes to debunk the idea that heteronormativity is timeless and universal.

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Chapter 5
Labor Codes

5.1 Fundamentals

The first year in our graduate studies at the University of Pennsylvania, the members of my cohort were assigned selected chapters from the groundbreaking *Engendering Archaeology* (Conkey and Gero 1991). The edited volume delivered on Conkey and Spector's (1984) initial prompt to study gender with a critical feminist lens in place. Its inclusion on the Fundamentals of Archaeology's syllabus indicated that by the late 1990s archaeologists recognized, some more begrudgingly than others, that gender was a viable research concern.

Considerations of labor organization were threaded throughout the volume. In many cases, women were performing in (stereo)typical capacities—as weavers, cooks, potters, etc. Gero's (1991) account of Formative Perú did make a case for their involvement in lithic production. As for gathering, Watson and Kennedy (1991) interrogated the idea that women did so by default of their passivity and reproductive disadvantage. Instead, they argued that the task was far more indicative of their innovation and agency. In eastern North America, females' rich botanical knowledge engendered agriculture's development around 7000 years ago. Ethnographic and ethnohistoric information were cited in support. Their argument, many of my cohort concurred, was an effective counter to archaeology's androcentrism as usual. Yet, for me, Watson and Kennedy's discussion of the New World's Neolithic Revolution raised some concerns about human nature. Its foundational claims appeared to be the same ones evoked by scholars who several decades prior had advanced the Man-the-Hunter model (e.g., Washburn and Lancaster 1968). In their words,

> For biological reasons relating to gestation and lactation, adult women are primarily responsible for nourishing and socializing infants and small children…For biological reasons relating to greater strength and hormone levels, adult men are charged with the primary responsibility for safeguarding the social units in which children are born and reared, and—in general—with tasks that require sudden bursts of energy, such as running after game… Because of the biological constraints on men and women, groups tend to divide labor

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> between the sexes so that women are responsible for activities that do not interfere with childcare and that can be performed near the habitation—cooking and "domestic activities"—as well as the collecting of stationary resources such as plants and firewood. Men are responsible for exploiting mobile resources, primarily the hunting of game, as well as for defense, and a variety of other such tasks. (Watson and Kennedy 1991: 259)

Watson and Kennedy may have debunked women's passivity. Yet, their conception of gendered activities remained inflexible, dichotomized, and biologically deterministic. I struggled, however, to articulate my misgivings aloud. At that juncture in graduate school, my encounters with feminism were nascent and engagement with queer studies had not yet begun. De Beauvoir's (2014 [1949]) statement that biology was not destiny was one with which I was still grappling. I had yet to read pointed criticisms about universalizing structuralist frames and monolithic treatments of Man and Woman that elided age, sexuality, race, class, etc. (e.g., Butler 1999 [1990]; Di Leonardo 1991; Errington 1990; Moore 1988). For fear of sounding ill-informed, contrary, or impolite, I tempered my responses during class discussion. (I, of course, allow for the possibility that friends in my graduate cohort remember the tenor of our debates or my outspokenness quite differently). Instead, I took to writing bolded and capitalized marginalia in my book: "But W&K are just perpetuating long held assumptions." Cathartic in a minor way, but certainly in need of intellectual grounding.

Though almost two decades have passed, I continue to see the specter of biological determinism haunting studies of the sexual division of labor. Paleoanthropologists have been especially instrumental in presuming and then publicly presenting this type of organization as primordial. That is, the sexual division of labor undergirded by a notion that Man produces and Woman reproduces is an inherent facet of the species. As such, it is what makes humans human. These presumptions are the philosophical bedrock in many bioarchaeological studies.

Here I build on Chap. 4's analysis of ancient embraces and inferences about romantic love by identifying and challenging the heteronormative assumptions embedded in the gender coding of labor activities. As I discuss, the ideology of separate spheres—its universality, inevitability, and rigidity in the activities ascribed to males and females—has historical roots in the eighteenth century. By the end of the nineteenth century, this framework found a revered and unexamined place in Western scholarship. The question remains, do researchers' studies of archaeologically contextualized human remains continue to presume that the sexual division of labor is timeless and universal, and in so doing naturalize the cultural? They do, a review of the literature indicates. My constructive criticisms in this chapter are not meant to suggest that the issues I have are with a few studies or the scholars who conducted them. Rather, these studies are *representative* of bioarchaeological research about labor more generally. Uncritical citation of early twentieth century ethnographic sources is one reason the ideology of separate spheres persists, I argue. Another is dismissal of potential complications as *notable exceptions* to the rule—that, for instance, females can hunt, not all game are big, and activities can

have many phases. Feminist critiques and empirical evidence to the contrary have done little to dissuade the committed.

Engendering Archaeology continues to hold a vaunted position in my personal library, its battered cover and broken binding a testament to my abusive love. Thumbing through its pages, I not too long ago revisited several evocative queries posed by Conkey (1991: 69):

> If we know that divisions of labor exist and that differentiations along the lines of sex and age are most likely, how do we know that a *sexual* division of labor existed? What archaeological data would indicate this? Must we try to differentiate between a well-defined distribution of labor tasks based on sex and more flexible arrangements that may divide labor, since no one does everything, but do not carry gender-laden meanings?

Writing about southwestern Europe during the Magdalenian period (12,000–17,000 years ago), Conkey proposed that archaeologists move beyond the restrictive and dearly held idea that labor was sexually divided. The inferences she drew from material remains involved productive processes not reducible to Man-the-Hunter, -Toolmaker, -Protector, -Provisioner, or -Producer. Age and natural ability mattered, as did flexible childcare commitments and dynamic interactions between community members. An activity like hunting or gathering or potting or farming or fishing involved multiple, cooperative tasks and different technologies. If Watson and Kennedy had offered feminist ideas first articulated in the 1970s, Conkey's attention to ambiguity was presenting a departure with queer intellectual implications.

With Conkey's ideas in mind, I offer examples from my own and others' bioarchaeological research that speak to ambiguity and strategic divergences from norms (see also Gero 2007). In doing so, I wish to endorse the radical idea that the sexual division of labor as a frame for conceptualizing socioeconomic organization is no longer useful to think with. As such, it should not be a starting point in anthropologists' studies of subsistence and labor. Or, at the very least, if researchers insist on the sexual division of labor's suitability as an analytical etic frame, they should be very clear about why they do. In some cultural–historical cases, it helps bioarchaeologists establish patterns from which they then may isolate particulars. The result is a complex and far more interesting narrative of the socio-sexual lives that comprised past cultures.

5.2 Keeping up with the Neanderthals

5.2.1 On Display

Center stage at the American Museum of Natural History's Hall of Human Origins, the Laetoli couple treks across an empty African savannah. Their proximity, as I discussed in the previous chapter, is suggestive of a heterosexist intimacy as old as our australopithecine ancestors. To the right of the Laetoli pair and tucked into the

exhibit's back wall, the Neanderthals are housed within a life-sized diorama.[1] Despite the millions of years that separate these two distinct hominin groups, their depictions communicate comparable messages about socio-sexual interactions and identities. The resemblances are worth reflecting on.

Quite by accident, fossilized remains of Neanderthals were first discovered in 1856 at Feldhofer Cave, Germany. The site, situated in the Neander Valley, readily lent its name to the then-enigmatic specimens. In the intervening years, these hominin relatives have been historically maligned and misunderstood. Based on Neanderthals' distinctive morphology, popular presentations cultivated a caveman stereotype, which continues to have currency though little empirical support (Moser 1992). Academics, on the other hand, have long regard fossilized evidence of the species (or subspecies depending on whom you ask) as pivotal for understanding the complexities of human evolution.

Long before the Hall of Human Origins, AMNH's Hall of the Age of Man had the distinction of having the world's first major permanent exhibit on human evolution (Moser 2003: 5). From its opening in 1921 until 1966, the exhibit featured Man as a hunter of mastodons and giant sloths. Neanderthals, or rather casts of the type specimen from Germany and a second individual from Chapelle-aux-Saints in France, were included in the collection. With the opening of the Hall of Human Evolution and Biology in 1993, descriptive language was more gender inclusive and the Neanderthals' presence made more conspicuous by a commissioned diorama. The gallery's changes did not mean, however, that the messages communicated were any less androcentric.

A family of three reposed before their rockshelter, performing mundane activities. A male Neanderthal, situated farthest from the cave, stood with spear and sharpening stone in hand. A fur was draped over one shoulder, partially covering his naked frame. Adjacent to him though closer to the entrance of the cave, a female was seated. She, too, was naked with animal fur arranged demurely. The traces of a linea nigra appear to bisect her stomach, suggesting that she was well into her second trimester or had already given birth. One end of a raw animal hide was clenched between her teeth. With her left hand, she grasped the skin's other end. Her right hand held a stone scraper that she dragged across the hide's taut surface. She faced a third individual, an elderly female Neanderthal gesturing in instruction. She sat amidst the shadows in front of the cave's interior. The sexual division of labor, so the mural suggested, emerged at a very early juncture in hominin evolution —at least 50,000 years ago.

In contrast to the "arbitrary decisions" made about certain features—curator Tattersall (1992: 84) recounts agonizing over eyebrows—the choice to display Neanderthals as a family replete with sexual division of labor was done with greater confidence. In his words:

[1]For a photograph of the diorama see http://www.amnh.org/education/resources/rfl/web/hhoguide/popup.php? img=neanderthal_lg.jpg&caption=Neanderthal%20Campsite%20%C2%A9AMNH/Roderick%20Mickens, accessed on 18 March 2016.

> [It] was the easiest because archaeologists have learned a fair amount about how Neanderthals lived. For example, the characteristic wear on their stone tools tells us that Neanderthals used flints to cut wood and scrape hides. We settled on showing a male sharpening a wooden spear while a young female scraped a hide and an older female offered advice. Because Neanderthal front teeth are usually very heavily worn, we felt safe showing the young woman with one end of the hide held in her teeth. (Tattersall 1992: 83)

Archaeological discoveries, Tattersall stresses, indicate "what" Neanderthals were doing. Yet, determinations about "who" was doing "what" go unclarified.

Feminist analysis of the diorama has shed light, namely on the gender tropes that are represented. "Man-the-Hunter," "Man-the-Toolmaker," "Madonna-with-Child," and the "Drudge-on-the-Hide" all find fellowship within the confines of the glass-enclosed scene (Gifford-Gonzalez 1993; Zihlman 1997). The problem, feminists recognize, is that these socio-sexual identities are presentist and unsubstantiated. As Linda Fedigan (1986) pointed out even prior to the diorama's creation, the Man-the-Hunter model developed from a long tradition of ethnocentric and androcentric scholarship. Man's ability to hunt, scholars presumed, drove evolutionary changes. Woman remained in the background—dependent, subservient, and immobile as a result of childbearing and caring.

To give Tattersall and his cocurator Willard Whitson the benefit of the doubt, at the time of the diorama's creation, archaeologists had just began to engage with critical feminism. The implications of interrogating knowledge production about sex, gender, and sexuality were not yet clear. It is more challenging, however, to explain why Tattersall and cocurator Rob DeSalle remained wedded to these original representations when they repurposed the diorama for the new Hall of Human Origins in 2007. Certainly, we now know much more about Neanderthals and human evolution. Most scholars agree on two things: (1) Neanderthal fossils are restricted to Europe and western Asia; and (2) an observable accretion of features dates to the second half of the Middle Pleistocene, or circa 400,000–125,000 years ago (Hublin 2009). Other conclusions remain debated with unfailing (and at times aggravated) enthusiasm.

For instance, and germane to the AMNH's diorama, paleoanthropologists generally fall into two camps when explaining the origin of modern humans, the regional (or multiregional) continuity model and the "out of Africa" (or single origins) model. According to the former hypothesis, *Homo erectus* left the African continent almost two million years ago. Dispersed populations (or subspecies) evolved—via natural selection and some gene flow that prevented speciation—within their regionally specific environments. In this model, Neanderthals are taxonomically known as *Homo sapiens neanderthalensis.* Proponents of the "out of Africa" hypothesis, one of whom is Tattersall (2009), also maintain that *Homo erectus* left Africa almost two million years ago and regional hominin populations resulted. But, these populations were isolated and eventually *Homo sapiens*, who had evolved from groups remaining in Africa during the first wave of migration, replaced them. In this model, Neanderthals are a separate and now extinct species, *Homo neanderthalensis*.

Both models have generated additional queries. What circumstances orchestrated *Homo neanderthalensis*'s extinction some 30,000 years ago, proponents of the single origins model have inquired? Were intrusive *Homo sapiens* from the African continent responsible? Did Neanderthals have carnal knowledge of their more evolutionarily advanced kin? Or, alternatively, for those adherents of the regional continuity model, are *Homo sapiens neanderthalensis* simply precursors to early modern Eurasians? These questions about origins, extinction, and interbreeding are sustained by taxonomic and existential concerns. What exactly makes us human? Yet, they do not appear to have been the inspiration for AMNH's Neanderthal diorama. Rather, according to the museum's website, the life-sized tableau presents the species "in its habitat, demonstrating the behaviors and capabilities that scientists think it had."[2] Neanderthals' daily socio-sexual lives, defined by a sexual division of labor and based on presumptions not empirical evidence, are what get portrayed about humanness.

The updated exhibit afforded an excellent opportunity to address earlier critiques about unconscious schema (or stereotypes) in human evolutionary narratives. It is possible that the complexities and finances of production may have provided an impediment. More likely, as Moser (1992, 2003) has argued, the professionals who create natural historic dioramas, like the lay viewers who visit museums, are unconsciously influenced by contemporary common sense about sex, gender, and sexuality. Nor are these powerful and problematic messages limited to socio-sexual identities and interactions. Representations of evolutionary progression, scholars have found, involve species' whitening and racial hierarchy (Graves 1991; Haraway 1989; Scott 2007).

Despite these critical assessments, the changes made to all of AMNH's dioramas were minor and cosmetic rather than substantive. Perhaps, the necessary, alternative visions—"telling new stories," in Moser's (2003: 14) words—will have to wait for future renovations to the hall. In the meantime, most visitors to the museum are untroubled by, or blissfully unaware of, the life-sized tableaux's conceptual shortcomings. "Visitors are most comfortable," Scott (2007: 46–47) notes, "with images to which they are accustomed." She cites the museum's Neanderthal diorama as emblematic. Yet, one's level of comfort with Neanderthals' appearance, gender roles, and family dynamic comes at a pedagogical cost. In reiterating conventional wisdom, the diorama's depiction of a nuclear family and sexual division of labor mistakes a heteronormative tale of recent origin for human nature.

[2]"Featuring four life-sized tableaux of *Homo ergaster, Homo erectus,* Neanderthals, and Cro-Magnons, the Spitzer Hall of Human Origins shows each species in its habitat, demonstrating the behaviors and capabilities that scientists think it had" (http://www.amnh.org/exhibitions/permanent-exhibitions/human-origins-and-cultural-halls/anne-and-bernard-spitzer-hall-of-human-origins, accessed 18 March 2015).

5.2.2 Paleoanthropological Studies

In contrast to museum displays, paleoanthropologists may have revised the narrative slightly, but they continue to legitimate the innateness of labor's sexual division. For example, the difference between Neanderthals and *Homo sapiens*, Kuhn and Stiner (2006) argue, was the former's narrow range of subsistence activities, which presaged their demise (see also Hockett 2012). So while they do not see a sexual division of labor as originating with australopiths, Kuhn and Stiner do emphasize that the sexual division of labor for *Homo sapiens* in the Upper Paleolithic signaled their humanity and complexity. The simultaneous participation of male and female Neanderthals in big game hunting was an evolutionary dead end. Henry et al. (2014) have disputed some of these claims by drawing attention to Neanderthals' plant consumption. But, their inferences about a more diverse subsistence base still espouse familiar ideas. Exploitation of plants would have necessitated development of a specific tool kit and, of course, the sexual division of labor.

As for evidentiary support, researchers often base their sweeping statements about human nature on ethnographic data, problematic for reasons discussed later. If researchers do draw inferences from fossil evidence, which is scant, sample sizes are small, incomplete, and/or variable. For example, in their analysis of Neanderthals' activity-related dental wear, Estalrrich and Rosas (2015) examined 19 individuals from three different sites—El Sidrón cave in Spain (n = 11), l'Hortus in France (n = 6), and Spy cave in Belgium (n = 2). Twelve individuals could be sexed with varying degrees of certainty. Genetic testing proved the most informative, particularly in the case of three adolescents from El Sidrón who had yet to develop sexually dimorphic morphology. But, using ancient DNA testing to sex adolescents, which then grounds inferences about social behaviors, should raise concerns about the geneticization of gender (see Chap. 7).

In Estalrrich and Rosas' study, they find only one sexual difference that is statistically significant —"that adult females have longer striations than adult males" (2015: 59). This generalization is called into dispute by their data, however. The individuals who actually displayed the longest striations are an adolescent male, female, young adult female, and young adult of "unknown gender" (Estalrrich and Rosas 2015: 56). Their use of gender goes unqualified, and ethnographic data from contemporary hunter-gatherers is cited in support. Nevertheless, Estalrrich and Rosas (2015: 51) conclude that "the differences detected on the overall activity-related dental wear pattern denote a difference or a division of labor by age and sex in Neandertals [sic] while using the mouth as a third hand." Hence, Neanderthals may have differed from *Homo sapiens* in many regards, but the social organization of labor activities is strikingly similar.

5.3 Separation Ideology

Rather than a natural facet of the *Homo* condition, as paleoanthropologists propose, the sexual division of labor is an example of culture's naturalization. As we will see, its origin point only tracks as far back as the Enlightenment. When eighteenth-century physicians remade sex—when their observations about the immutability and duality of biological differences gained traction, which I outlined in Chap. 2—they created an empirical foundation on which significant social, economic, and political developments were then erected (Laqueur 1990: 11). Neither cause nor effect, we may think of these developments as inextricable from one another.

Industrial capitalism, emergent in Europe at the end of the eighteenth century, took full advantage of physicians' vision of sexual division. New ways to labor reinforced males' and females' differences in spaces made mundane through their everyday use. Men were employed in and moved through public domains, while women were constrained to the home. As Laslett and Brenner (1989) argue, these effects were felt the most profoundly amongst the families of wealthy entrepreneurs and a white, middle class; in particular, the latter's financial gains shifted consumptive practices, spatial associations, and family responsibilities. For groups that were impoverished and/or racially (or ethnically) marginalized, women continued to work but in positions characterized by drudgery, low pay, and little chance for social mobility. They were not exempt from ideological expectations about their reproductive and instinctual, maternal bonds, however (Laslett and Brenner 1989: 391). All women's labors were ones presumably done out of love; they remained child bearers and caretakers regardless of class, race, ethnicity, or geographic location. And these notions about women's natural inclinations for nurturance and morality were cultivated on Christian pulpits throughout Europe (Hall 2013) and the United States (Cott 1977; Welter 1966).

In the United Kingdom and the United States, expansion of the middle-class emboldened some women, those with economic means, to seek legislative redress and vocal public roles. "But, addressing my sex in a firmer tone," proclaimed British writer Wollstonecraft (1995 [1792]: 76), "I pay particular attention to those in the middle class, because they appear to be in the most *natural state*" (emphasis added). Quite possibly the first recognized feminist treatise, Wollstonecraft's *Vindication of the Rights of Women* grounded the movement in bourgeois privilege that subsequent thinkers and activists have worked stridently to challenge. In it we see a host of contradictions—a call for an emancipation of sorts but a commitment to inherent sex differences. Troublesome to Wollstonecraft was women's immorality, infantilization, and excessive concern with beauty and pleasure. "I speak of the improvement and emancipation of the whole sex," she (1995 [1792]: 272) decried. To this end, she called for a national commitment to females' education and revolution in their manners. Yet, Wollstonecraft neither questioned women's natural roles as wives and mothers, nor took issue with their place in the domestic domain. The ideology was

invisible. Her words and the reactions they aroused then served to further consolidate the sexual division of labor and social disadvantage.

By the mid-nineteenth century, American feminists proposed a more radical attack on the ideology of separate spheres. Attendees at the 1848 Seneca Falls Convention in New York added to a larger national debate about "the social, civil, and religious condition and rights of woman" (Stanton 1848). The outcome, the powerful *Declaration of Sentiments and Resolutions*, advocated broadly for women's equality. Given many attendees' abolitionist advocacy, the declaration also alluded to racial equality: "That the equality of human rights results necessarily from the fact of the identity of the race in capabilities and responsibilities" (Stanton 1848). Some signers did balk at the resolution pertaining to women's elective franchise, however. Fredrick Douglass, one of the 32 male signatories, orated in favor of suffrage, helping to swing enough votes for the resolution's passage (McMillen 2008: 93–94). Not at issue was the final, twelfth resolution proposed by convention co-convener Lucretia Mott. Convention goers unanimously agreed to secure "woman an equal participation with men in the various trades, professions, and commerce." The success of the women's movement was dependent on economic autonomy and access to public spheres, Mott rationalized.

Such political activism challenged idealized notions of femininity that called for women's deference, religious piety, sexual purity, nurturance, and domestic preoccupation (Welter 1966). In so doing, it generated no uncertain amount of social angst for both men and women. Granted, some women as a consequence of their age, race, ethnicity, sexuality, and/or, geographic location inadvertently digressed from or actively resisted the dominant ideology (e.g., Perdue 1994; Mullenix 2000; Romero 1997). But, for society's better sorts—white, heterosexual, middle- and upper class Christians—there was considerably less wiggle room for fear of being socially outcast and economically destitute. Many found the Cult of Domesticity's Kool-Aid quite palatable (and still do). Even for those women who sought to expand their duties into the public sphere—as physicians, scientists, ministers—their inherent feminine nature was not disputed. "They debated where the division between sex roles should be made but not whether there should be a division in the first place" (Rosenberg 1975: 142).

For their part, scientists provided the public with incontrovertible proof of males' and females' innate differences. "A succession of studies appeared in the 1860s, demonstrating that the subordination of women to men was a hallmark of civilization; whilst primitive societies enjoyed near equality between the sexes, evolutionary advanced societies experienced increasing sexual divergence" (Erskine 1995: 103). Indeed, several scientists foundational to four-field anthropology naturalized cultural beliefs that identified males as producers and reduced females to reproducers. The circularity of their conclusions, for their scientific statements were unconsciously undergirded by the ideology of separate spheres, went unrecognized for decades to come.

For example, in *On the Origins of Species* (1859), Charles Darwin began with division. Evolution by natural selection, he explained, required a "physiological division of labor;" that is, males and females had separate reproductive roles. In

contrast, sexual selection "depends, not on a struggle for existence, but on a struggle between the males for possession of the females; the result is not death to the unsuccessful competitor, but few or no offspring" (Darwin 1859: 88). The theory explains how and why females choose male mates. The short answer is the former selects strength and/or beauty and the latter competes for access. Size often matters for males, as do competitive courtship rituals. Female gorillas will opt for male silverbacks large in size and dominant in behavior, for example. Or, peahens select those peacocks whose tail feathers are the most shimmering, iridescent, and eye-catching. And to be clear, he is not talking about humans' selection of mates.

Yet, how to explain the diversity of sexual behaviors and forms not easily reducible to dichotomy, male competition, and female choice? Evolutionary biologist Roughgarden (2004), the most vocal critic of sexual selection, has detailed myriad nonhuman species' that are neither sexually dimorphic nor fixed throughout a life course (see also Bagemihl 1999). She also outlines reproductive strategies that include same-sex coupling and asexual parthenogenesis, as well as procreative interactions between males and females that do not then lead to partnering or familial arrangements. Certainly, Darwin and colleagues were not ignorant of such variation given the former's comprehensive study of barnacles (see Chap. 3).

As an alternative to sexual selection, Roughgarden posits the idea of social selection. While she does problematically anthropomorphize animal species with her use of terms like gender, divorce, and homosexuality—here we can see the culturalization of nature at work—her empirical evidence is quite effective in its challenge to Darwinian sexual selection. Her kicking of so sacred a cow has engendered no uncertain amount of objection and vitriol amongst colleagues. Some 40 scientists responded (Dall et al. 2006) to a follow-up review article in *Science* in which she and coauthors argue for cooperation in lieu of choice and competition (Roughgarden et al. 2006). Additionally, some scholars have declared that a personal and political agenda biases her position (Gewin 2003). In so doing, however, they seem to discount the impact that Victorian common sense and industrial capitalism had on Darwin's own theorizing about evolution.

Not until *The Descent of Man, and Selection in Relation to Sex* (1871) did Darwin elaborate on the implications of sexual selection for human evolution. The heavily revised second edition (1874) bears the imprint of his sociohistorical conditions quite clearly. Man's larger size and intellectual superiority, according to Darwin (1874: 557), was analogous to the peacock's fanning tail feathers.

> Man is more courageous, pugnacious, and energetic than woman, and has a more inventive genius. His brain is absolutely larger, but whether relatively to the larger size of his body, in comparison with that of woman, has not, I believe been fully ascertained.

Yet, dissimilar from other animals, the civilized man selected his woman (Darwin 1874: 573, 597). Thus, Darwin had stripped women of the right to choose (and many would say they still do). Rather than agency, women's natural predispositions included maternity, nurturance, reclusiveness, and altruism. "Woman seems to differ from man in mental disposition, chiefly in her greater tenderness and less selfishness; and this holds good even with savages" (Darwin 1874: 563). The state

of gendered affairs was not fixed, however. Women's equality, Darwin (1874: 565–566) proposed, could be ensured by her marriageability and subsequent birthing of many children.

> All women, however, could not be thus raised, unless during many generations those who excelled in the above robust virtues were married, and produced offspring in larger numbers than other women. As before remarked of bodily strength, although men do not now fight for their wives, and this form of selection has passed away, yet during manhood, they generally undergo a severe struggle in order to maintain themselves and their families; and this will tend to keep up or even increase their mental powers, and, as a consequence, the present inequality between the sexes.

Hence, the sexual division of labor was mutable inasmuch as symmetrical valuation of males' and females' inherent differences might eventually replace hierarchical organization. The tweaking of human evolution's tale indicates that even the celebrated thinker was not impervious to the seduction of separate spheres.

Darwin was not just communicating something about gender differences. His statements about bodies and brains also made claims about racial differences. The females of savage groups, he (1874: 599) explained, were not as passive as their civilized counterparts, and they fully exercised their ability to choose sexual and/or marriage partners. The savages of Darwin's day—those native peoples subjugated or decimated by Europeans and Euro-Americans during colonial encounters—functioned as living fossils. It is to them he looked for information about earlier periods of humans' evolution. In support, Darwin cited anthropological writings authored by his contemporaries. Understandings of civilization's progression from a state of savagery, like those articulated by Lewis Morgan and Herbert Spencer, were obviously grounded in Darwinian evolution. The footnotes in both volumes of Spencer's (1866, 1867) *Principles of Biology*, for instance, were effusive in their gratitude. But, in the same regard, the revisions Darwin made to his two canonical works indicate that nineteenth-century Western intellects engaged in a vibrant and mutually beneficial dialogue. Indeed, at the urging of Alfred Russel Wallace, Darwin overcame his distaste for Spencer and included his coinage "survival of the fittest" in *On the Origin of Species*' (1869) fifth edition (Paul 1988).

By the end of the nineteenth century, an ideology of separate spheres had found a revered, though yet to be empirically substantiated place, in Western scholarship. Emile Durkheim, for instance, would concentrate on the division of labor in his 1893 doctoral dissertation. "Its true function," he (2014: 46) wrote, "is to create in two or more persons a feeling of solidarity." Of the types of solidarity Durkheim distinguished (e.g., mechanical, organic, industrial, contractual), conjugal solidarity resulted from the sexual division of labor. But, again cooperation and conjugality should not be mistaken for equality between the sexes.

> The woman had long withdrawn from warfare and public affairs, and had centered her existence entirely on the family…among civilized peoples the woman leads an existence entirely different from the man's. It might be said that the two great functions of psychological life had become as if dissociated from each other, one sex having taken over the affective, the other the intellectual function. (Durkheim 2014: 48–49)

According to the sociologist, these functional (i.e., gendered) differences—women's weakness, their domesticity, and gentleness—translated into observable morphological ones. In support, he cited natural historians' craniometric studies (see Chap. 2). The capacity of females' smaller skulls suggested arrested physiological development and inferior intelligence, thereby explaining their lowly place in cultural evolutionary schemas.

Interestingly, and contra to aforementioned representations of hominins, Durkheim did not see the sexual division of labor and its concomitant social, psychological, and physical differences as ancient in origin. His theorizing speaks not of human nature but of the improvability, the malleability of the species. Or, at least the male half of the species. "The further we go back into the past," he (2014: 46) explained, "the more we see that the division of labor between the sexes is reduced to very little." Durkheim (2014: 47) continued,

> If one accepts that the development of the individual reproduces in abridged form that of the species, we may justifiably conjecture that the same homogeneity was to be found at the beginnings of human evolution, and see in the female form a close image of what was originally that single, common type from which the male sex has gradually become distinct.

If savages were living fossils, then the female was a deep-sea coelacanth. According to Durkheim, increasing distinction (or dimorphism) inevitably situated the civilized, white adult male in a more evolutionary and socially advantageous position. Picking up where Spencer left off, he argued that civilization engendered male superiority and female subordination, marital pair bonding, and compulsory heterosexuality. In contrast, savagery was characterized by sexual promiscuity, conjugal instability, and females' productivity and political involvement—social facts with decided disadvantages according to Durkheim. Counterintuitively (and unconvincingly from a feminist standpoint), he regarded separate and unequal as beneficial for civilized women inasmuch as they avoided the hardships of their savage counterparts.

Ideas about marriage were more deeply explored by Malinowski (1913) in *The Family among the Australian Aborigines*, a literature review that anticipated his later ethnographic work. Despite a primitive nature and proclivity for sexually promiscuity, Australian aborigines' family unit was nuclear in its organization. In explanation, Malinowski argued that universally the family functioned to nurture children. To this end, it had three attributes: (1) social boundaries within and between; (2) physical location; and (3) affection and intimacy (Collier et al. 1982). Boundaries distinguished permissible from prohibited sexual partners, thereby constituting an incest taboo. And boundary marking ensured that children could identify their fathers, which he defined as social paternity. That is, biological maternity was obvious though promiscuity made males' biological relatedness more difficult to confirm. Later anthropologists would retain Malinowski's three-pronged definition but the issue of paternity again came under fire. Emphasis was instead placed on the mother–infant bond as a core component of the nuclear family (e.g., Gough 1975; Slocum 1975). The framing is no less heteronormative or biologically deterministic, I would add.

5.4 Analogical Inferences

When nineteenth-century scholars commenced turning history into human nature, their lack of empirical support made for tenuous claims about rigidity and universality. Perhaps, this is the reason that George Murdock's ethnological work has since proven so influential. In early efforts, he compiled a cross-cultural dataset on the sexual division of labor in 224 societies—mostly "primitives" but a "few higher civilizations" in his words (Murdock 1937). His 1967 publication *Ethnographic Atlas* expanded these efforts; the number of societies he tabulated totaled 862. Murdock also fine-tuned his study, coding for economic activities related to subsistence and occupation, religious beliefs, practices like rites of passage, and social interactions defined by birth and marriage. Follow-up work augmented the database and revised some codes (e.g., Murdock and White 1969; Murdock 1981). In its final version, the database included information from 1167 societies.

Returning to the atlas to concentrate on the sexual division of labor, Murdock and Provost (1973: 203) began with certain presumptions—some explicitly stated and others more subtle.

> A division of labor between the sexes has long been recognized by economists, sociologists, and other behavioral scientist as (1) the original and most basic form of economic specialization and exchange, and as (2) the most fundamental basis of marriage and the family and hence the ultimate source of all forms of kinship organization.

Did their review of 185 societies provide sufficient empirical evidence to support the hoary and heteronormative notions they advanced? Interestingly, Murdock and Provost categorized activities along a range—strictly feminine and masculine, quasi-feminine and masculine, and swing participation. They collected data about gendered responsibilities with attention to ambiguity, although they do not recognize it as such. Moreover, of the 50 technological activities coded, none are exclusively female and only two are exclusively male, hunting of large aquatic fauna and ore smelting (Murdock and Provost 1973: 207). Males and females to varying degrees participate in *all* other activities. Yet, despite examples of ambiguity within and diversity between cultures, Murdock and Provost still characterize the sexual division of labor in terms of absolutes and heteronormativity. How then did they explain evidence to the contrary?

Socio-sexual identities, they suggest, are an outcome of biological differences between males and females. In their words,

> Males tend in general to be endowed with greater physical strength than females and probably also a superior capacity for mobilizing it in brief bursts of excessive energy, whereas females tend to be more closely attached to the home by the burdens of pregnancy and infant care and to this extent suffer a disadvantage in undertaking tasks which must be performed at a distance from the household. These relative masculine advantages clearly characterize most of the activities classed above as strictly masculine or quasi-masculine and are therefore presumably a factor favoring the widespread assignment of these tasks to males. (Murdock and Provost 1973: 211)

It is difficult to reconcile this passage with a subsequent statement that none of the technological activities they document "seems inherently better suited to the capacities of either sex" (1973: 211). Rather, females' taken-for-granted and universal physiological processes trump explanation of women's involvement in predominantly masculine activities. Childbirth, lactation, and menstruation dictate how and the extent to which all women labor. This understanding is one that builds on earlier work by Judith Brown (1970). Woman's work was significant, she argued, when tied to a home base, monotonous, not dangerous, and easily interrupted and resumed.

For well over four decades now, feminist anthropologists have found significant shortcomings with these influential studies. Most glaring, the primary ethnographic sources they mined were inherently androcentric. Male ethnographers interacted mainly with male informants who provided information about male activities (Moore 1988). Accordingly, certain socio-sexual identities were celebrated, while others were overlooked. The elision of certain medicoritual roles like the midwife, who I treat in-depth in Chap. 6, is one example of this neglect.

More pertinent to the socioeconomic activities of concern in this chapter are ethnographies about hunters and gatherers. In the case of Murdock and Provost's coding of these sources, Owen (2005: 15) identifies a subtle bias against gathering. Concurrently, male hunters' subsistence contributions are overinflated. Androcentric bias also informs definitions of hunting, while altogether disregarding cases of female hunters [e.g., Agta of Philippines (Estioko-Griffin and Griffin 1981; Goodman et al. 1985); North American Chipewya (Brumbach and Jarvenpa 1997)]. For instance, in the case of the Ache, a foraging community living in eastern Paraguay, Hurtado et al. (1985) documented how women spotted animals for men, as well as carried, gutted, cleaned, prepared, and packed game. The ethnographers, however, never qualify these activities as hunting. Rather, with an evolutionary framework and Brown (1970) as foundations, they perpetuate the idea that men hunted and women were constrained by childcare and domestic responsibilities. We may, of course, propose an alternative interpretation from the observations documented by Hurtado and colleagues. Hunting for the Ache was a subsistence activity that involved multiple stages, cooperation between different genders, intersectional identities within communities, and diversity between them (for other discussions by archaeologists of labor activities as complex see Bolger 2013; Frink 2009; Owen 2005).

Nevertheless, the sexual division of labor was and continues to be regarded as a given in bioarchaeological studies. When Murdock and Provost's publication first appeared, this presumption was not entirely unsurprising. Anthropologists' initial engagement with feminism was coincident with their statements. Indeed, it was during this time that feminist anthropologists first brought women's gathering to the fore in ethnographic studies (e.g., Dahlberg 1981; Lee 1968, 1980; Linton 1971; Slocum 1975; Tanner and Zihlman 1976). But, many archaeologists continue to cite writings by Murdock and Provost and Brown with little if any critical reflection (e.g., Balme and Bowdler 2006; Bird and O'Connell 2006; Elston and Zeanah 2002; Waguespack 2005; Wrangham 2009). In so doing, they reify the sexual

division of labor as the "original and most basic" form of economic organization. Rightly so, Roberta Gilchrist (1999: 39) has remarked that "ethnographic and historical sources are used to predict or explain the sexual division of labor with little or no consideration of the circle of inference that has been employed." The ethnographic present is presumed to have ancient precursors, and inferences about the past are informed by present-day and Western-centric biases.

When feminism first found a toehold in archaeology, Alison Wylie (1992) stressed the importance of evaluating the sources from which one's inferences were drawn. They place evidential constraints on archaeologists' descriptions of past cultural system. The (hetero)sexist assumptions intrinsic to aforementioned ethnographic studies of labor are what she had in mind. Yet, Wylie (1992: 27) also stressed that "a change in background knowledge about the sources, as much as in what archaeologists find in the record can decisively challenge these interpretive claims." A feminist critique, for example, makes visible the inadequacies, simplifications, androcentrism of traditional studies. This awareness in turn allows for examination of the variability inherent in archaeological data. Nothing about, say, a spear point naturally precluded females' manufacture and use of this artifact type. Said object could have been associated with myriad activities and actors. An individual may have used a sharpened stone point to disembowel a deer, slash a plant stem, or shave a hairy leg. Nor should we presume a universal symbolic significance.

To extend the example, hunting implements are not unquestioningly masculine or exclusively violent. The pathway from archaeological data to functional use, social identity, or symbolism need not be a straightforward one. Cultural contextualization is a key as is bringing together multiple lines of evidence, a "body of evidence" appropriately enough (Wylie 1992: 28). Triangulation is particularly compelling when it includes "knowledge of this physical, chemical, bioecological sort," independent of each other though linked by the hypothesis at hand. Thus, it would seem that bioarchaeology is at an advantage. Does it make good on its potential? Do researchers' studies of archaeologically contextualized human remains presume that the sexual division of labor is timeless and universal, and in so doing naturalize the ideology of separate spheres? Or, do inferences drawn from bioarchaeological data indicate biocultural synergism, individuals' shared experiences, and strategic departures from socioeconomic norms?

5.5 Throwing like a Girl

Bioarchaeologists' claims about the sexual division of labor are often based on a paucity of skeletal data. This inattention is not an oversight but a consequence of poor preservation. Yet, it remains to be seen that such evidence will generate conclusions about labor's organization that deviate from the divisible. Recent studies that examine sex differences in conjunction with behavioral markers or pathology offer cases in point. In particular, bone deposition or hypertrophy at entheses, the insertion sites of tendons or ligaments, can result from continuous or

repetitive activities. Thus, whether you label them enthesopathies, musculoskeletal stress markers (MSM), enthesial (or enthesial) remodeling, or skeletal markers of occupational stress (MOS), their bioarchaeological analysis can testify to past peoples' daily pursuits.

There is, however, robust debate about the methodological feasibility of studying these markers. Jurmain (1999), for instance, has maintained that only extreme or traumatic events indelibly alter bone. Hence, while we may gain insight into an individual's life experiences, we are unlikely to reconstruct community-wide cultural practices. Other analysts have suggested that habitual activity markers may inform understanding about a population's behaviors in a general sense, but it is less likely that individuals' specific activities or occupations —i.e., weaver, potter, farmer—can be isolated (Cardoso 2008). Even the optimistic recognize that the etiology of enthesial remodeling can be multiple and complex. Known confounders include age (Cardoso 2008; Pfeiffer 1980; Stirland 1993), disease (Cunha 2006: 338–339), and the interactions or singular impact of genetics, hormones, and/or ontogeny (Weiss 2003; Weiss and Jurmain 2007). Interestingly, while body size within a sample is recognized as a potential confounder (Wilczak 1998), sexual dimorphism—male robusticity and female gracility—is rarely if ever disputed. Variation is seen as being sex-specific within a sample rather than along a continuum that includes overlap between the sexes. Hence, while studies of entheses' remodeling has generated skepticism for a host of reasons, reiteration of contemporary common sense about bodies' rigid, dichotomous differences is not one of them.

In a recent study, for instance, Sébastien Villotte et al. (2010) assessed the presence/absence of enthesopathies in Upper Paleolithic and Mesolithic Europe. They focused on the upper limbs of 37 individuals. These 16 females and 21 males lived over a period of time that roughly spanned 12,000 years. Their findings:

> Males have a higher frequency of lesions than females but the difference is not significant. Concerning the locations of the lesions, the predominance of the right side is observed in both sexes. These findings indicate that, even in case of a sexual division of labor during the Upper Paleolithic and Mesolithic, the global amounts of physical stress generated by the sex-specific tasks of males and females were not markedly different. (Villotte et al. 2010: 40)

In other words, life was rough and required much physical labor for everyone. In the face of such evidence, why then do these investigators insinuate that the sexual division of labor is human nature? For four of the sample's males, analysts identified enthesopathies on the medial epicondyles. This area on the distal right humerus is the insertion site for the common flexor tendon. Villotte and colleagues suggest that such osseous changes were due to spear throwing. Based on this evidence, they then claim that males hunted—not just these four males, but all males in Europe throughout the Upper Paleolithic. Even the ones whose medial epicondyles remain unchanged wielded spears, presumably though not explicitly stated, with the intent of bringing down big game. "A sexual division of tasks concerning hunting seems most likely," they (2010: 41) conclude. A fairly

sweeping statement for a decidedly small sample size over an expansive period of time.

Their claims that labor is sexually divided, I believe, discount the possibility of social differences within a community due to natural ability or kinship tie. Indeed, their certainty about Man-the-Hunter does not even allow for the possibility of Woman-the-Gatherer let alone female hunters. Rather, they are silent on the subject of females' activities. Females display enthesopathies at insertion sites elsewhere on the upper limbs, but Villotte and colleagues do not then discuss the causes of these modifications. Females' only notable differences are the ones on their pelves that mark their reproductive abilities. Males' and females' biological differences—physical strength and procreative positions—provide the essence of their socio-sexual identities.

Interestingly, in a slightly later study of enthesopathies by Villotte and Knüsel (2014: 168), the coauthors instead "interrogate the question of sexual division of labor" in European prehistory. Their citation of a few feminist publications is perhaps one reason why they do not presume its inevitability and rigidity. Yet, they do not then deliberate about the androcentric and heteronormative biases in the cited ethnographic sources. Analogic inferences are drawn from Murdock and Provost's publication. But, dissimilar from the study of Upper Paleolithic Europe undertaken by Owen (2005), Villotte and Knüsel do not cull information about variable bodies and physiological processes. Rather, they abide by the law of averages and discount overlap. On average males are stronger, taller, and bigger than females. Accordingly, from their analysis of medial epicondylosis, or "thrower's elbow," they argue for males as hunters and warriors. Why females in the sample display these enthesopathies goes unexplained. Villotte and Knüsel (2014: 172) conclude, "An ability to throw with accuracy and at increasing distance may represent one of the fundamental structuring factors in past human societies, with both biological and social implications." In other words, throwing like a girl is universal, evident as early as the Upper Paleolithic, and evolutionarily maladaptive.

Articulating the idea that bodily comportments or techniques are natural would be less disquieting had scholars not already debunked such biological determinism (Bourdieu 1990; Mauss 1979 [1934]; Young 1980). Notably, and over three decades ago, Iris Marion Young (1980) dismantled the inevitability and ubiquity of throwing like a girl. "The situation of women within a *given socio-historical set of circumstances*," the feminist philosopher noted, "despite the individual variation in each woman's experience, opportunities, and possibilities, has a unity that can be described and made intelligible" (1980: 139, emphasis added).

In a 2005 publication, Young would revisit this influential essay to acknowledge that she disregarded intersectionality (see Chap. 3). Despite her earlier essentialization of female existence, several of her original insights remain valid. Physical differences are less the issue than women's perceptions about their capabilities when it comes to purposeful or task-driven movements, she argues. The reason girls throw (or run or climb or walk or jump) as they do is socialization that produces an inhibited intentionality. From a young age, women internalize societal expectations about gender norms. The restrictions placed on mobility and spatiality are

multitude: "She is told that she must be careful not to get hurt, not to get dirty, not to tear her clothes, that the things she desires to do are dangerous for her" (Young 1980: 153). A feminine existence is defined in terms of "I cannot" rather than the "I can" of masculinity, which is an effect of "contemporary advanced industrial, urban, and commercial society" (Young 1980: 139–140). That is, rather than emergent early in human prehistory, body techniques are tied to specific socioeconomic moments.

While throwing is less of an issue come the Neolithic, bioarchaeological studies are far from revolutionary in their narratives about labor. Domestication's inception brings expected and uniform social outcomes, i.e., the rigid, sexual division of labor [e.g., Levant (Eshed et al. 2004); Italy (Marchi et al. 2006); Anatolia (Molleson 2007); Sweden (Molnar 2006)]. For example, Marchi et al. (2006) assess robusticity in upper and lower limbs. Their sample is from western Liguria, Italy and dates to the Paleolithic–Neolithic transition. It is small in size—16 individuals, eight males and eight females, who lived from 6000 to 5500 BP. They (2006: 448) begin:

> Given the known ethnographic documentation of sexual division of labor, we expect a differing involvement of the sexes in those activities, with males more involved in pastoral activities, and females in more sedentary agricultural tasks. If this hypothesis is correct, we should find: 1) increased sexual dimorphism in lower limb robusticity, 2) maintenance of a high level of locomotory stress in males, and 3) decreased upper limb asymmetry in robusticity in males, resulting from the decreased use of hunting-related throwing technologies.

The ethnographic sources to which they refer are those compiled by Murdock and Provost. In another study, Eshed et al. (2004: 303) suggest that both Natufian hunter-gatherers and Neolithic agriculturalists living in the Levant had "a gender-based division of labor." Musculoskeletal stress markers indicate sexual dimorphism, and in explanation they cite statements by Judith Brown about women's work as safe and monotonous, conducted near home, and easily interrupted. Accordingly, Eshed et al. argue that the labor activities of Neolithic females were constrained to domestic spheres and maternal functions.

In some studies of the Neolithic, researchers dismiss social construction altogether. "The impact of dietary change on women's oral health," Lukacs (2008: 901) argues, "was intensified by increased demands on women's reproductive systems, including the increase in fertility, that accompanied the rise of agriculture and that these factors contribute to the observed *gender* differential in dental caries" (emphasis added). While other scholars may take issue with the easy connections that he forges between the introduction of agricultural subsistence, population growth, and increased sedentism, my focus is on Lukacs's statements about sex, gender, and sexuality. Semantic selection of gender aside, he reduces all women to their physiological processes and responses. Perhaps, his confusion of the biological for the social is a consequence of the intellectual frames he cites. In calling for a firmer theoretical grounding, evolutionary and behavioral ecological models not feminist ideas are the ones to which he turns.

Lukacs's review of living populations does identify a documented link between oral health and those physiological and hormonal processes tied to puberty's outset and pregnancy. In citing fertility as the primary culprit for Neolithic females' elevated rates of dental caries, however, Lukacs discounts human variation—between and throughout the life courses of individuals. "Female life-history factors," he (2008: 910) writes, "include higher estrogen levels during the full course of preadolescent development, as well as during puberty, menstrual cycling, and pregnancy." Yet, estrogen levels and reproductive capacities vary between individuals. Females' infertility was as real of a phenomenon in the past as it is today. Moreover, many females' life courses included physiological processes related to aging and the cessation of menstruation (e.g., peri- or postmenopause). Granted, researchers debate when and the degree to which prehistoric females' estrogen production decreased, but they nevertheless realize that this biological fact makes it a worthy intellectual consideration (e.g., Agarwal 2012; Gosman et al. 2011; Roksandic and Armstrong 2011; Weaver 1998). Ultimately, in reducing the etiology of cariogenesis to biological factors, complex though they may be, Lukacs regards Woman as a deterministic and monolithic category, Female-the-Reproducer.

Accordingly, females' socio-sexual identities and activities appear quite limited. Identification of reproductive parts—whether bony pelvis, estrogen level, or chromosomal composition—encapsulates their existence in a way that does not follow from determinations of maleness. These narratives about past lives are reaffirmed when pelvic differences are examined in conjunction with behavioral markers (e.g., osteoarthritis, long bone dimensions and strengths) or pathology (i.e., dental caries) (though for notable exceptions see Bridges 1991; Hollimon 1997; Sofaer Derevenski 2000). The implicit message conveyed is that the labor of female child bearers is circumscribed to the menstrual (or birth) hut or family home. Rather than examine the complexities of activities tied to reproduction, which I do more fully in the next chapter, this representation of separate spheres hierarchizes tasks—men's work is essential and creative while the parameters of women's socio-sexual lives are inevitable, inhibited, and ultimately detrimental to their health. Conversely, males are greater in size and range farther and wider regardless of what they are doing or where it occurs or what behavioral markers are assessed. In the Paleolithic and Neolithic periods, they were hunters and agriculturists, respectively. And in more recent times, they traded, warred, herded, fished, kayaked, harpooned, deep-sea dove, etc. [e.g., Spain (al-Oumaoui et al. 2004); Yucatan, Mexico (Maggiano et al. 2008; Wanner et al. 2007); Argentina (Mazza 2015); American Southwest (Ruff 1987); Central Europe (Sládek et al. 2007); Chile (Standen et al. 1997)].

5.5.1 A Case Study: The Maya Sex/Gender System

In the case of the pre-Columbian Maya, bioarchaeological studies concerned with labor and gender are few in number. The idea that males universally produce and

females reproduce is the general consensus (e.g., Cucina and Tiesler 2003; Danforth 1997; Maggiano et al. 2008; Storey 1998; Wanner et al. 2007). In one study of well-preserved skeletal remains from Xcambó (Yucatan, Mexico), for instance, Wanner et al. (2007) examined the geometric properties of long bones' diaphyses for information about sex differences and diachronic changes. Looking at bilateral symmetry and dimorphism, they found that females' and males' activity-related remodeling differed. Additionally, while the patterns of males changed from the Early Classic to Late Classic (AD 350–750), the geometric properties of females' long bones remained relatively consistent.

Wanner and colleagues' study seems methodologically sound, and they do attend to nonactivity-related confounders. Age, nutritional status, pathology, they note, can impact the geometric properties of long bones. Yet, despite their intent "to provide new answers to questions concerning lifestyle, domestic labour division and subsistence strategies" (Wanner et al. 2007: 253), the researchers' interpretations about sex differences simply reiterate the ideology of separate spheres. For Wanner et al., the implications of their evidence are clear. At Classic period Xcambó, sex differences indicate a gendered division of labor, for the inferences they draw are decidedly about socioeconomic organization and not just biological variation. Late Classic men "lived a less physically demanding lifestyle than before" (Wanner et al 2007: 264). Conversely, for women, the data demonstrate continuity from the Early to the Late Classic, which suggests "women probably did not benefit from the improvements in lifestyle of their male counterparts" (ibid). That is, females' skeletal data testify to women's social disadvantage and confinement to domestic domains. Even if we were to accept the claim (which I do not) that women's socio-sexual lives were static, unequal, and homogeneous, Wanner et al.'s suggestion that Xcambó's females were unaffected by the Classic period's massive social, political, and economic transformations cannot go unchallenged. Their conclusions are evidence of a bioarchaeological study in need of deeper engagement with Maya scholarship *and* social theories pertaining to sex, gender, and sexuality.

Granted, Maya bioarchaeologists may be encumbered by inadequate skeletal preservation, though this was not the case at Xcambó. In contrast to their colleagues who study earlier time periods or less intensively researched cultures, however, they do have additional, robust resources to support their inferences—multiple lines of evidence, per Wylie's urging. Of course, when bioarchaeologists do not pull from the body of evidence available to them, the conclusions they draw are rarely new and should come as no surprise. In the case of the Maya, these source materials include ethnographic and ethnohistoric sources, an ever increasing number of epigraphic translations, art historic analyses of sculpture and paintings (albeit often unprovenienced), and a literary corpus that explorers and archaeologists have augmented now for some two centuries. It is also worth noting that scholarship explicitly concerned with Maya practices and beliefs related to sex, gender, and sexuality is now quite extensive (e.g., Ardren 2002; Blackmore 2011; Geller 2005, 2008; Gillespie and Joyce 1997; Gustafson and Trevelyan 2002; Hendon 1996, 1997; Hutson 2010; Joyce 2000a, b, 2001, 2008; Robin 2002; Stockett 2005).

Collectively, these datasets neither substantiate a longstanding and strict sexual division of labor, nor do they indicate a simplistic association between sex and gender.

Christianization and European colonialism, a point underscored in the next chapter's consideration of reproductive management, generated dramatic transformations to the Maya sex/gender system. With these cultural changes in mind, feminist-inspired archaeologists have documented pre-Columbian socioeconomic activities that involved collaboration, complementarity, and dissolution of a public–private divide (e.g., Hendon 1997; Morehart and Helmke 2008; Robin 2002), as well as religiopolitical performances defined by gender fluidity (e.g., Geller 2005; Hewitt 1999; Joyce 2000a; Looper 2002; Stockett 2005). These facets of Maya society do not negate the existence of inequality or female-bodied physiological processes (i.e., menstruation, pregnancy). But, thinking about the former demands that we also consider difference and ambiguity. And, attention to the latter, as I demonstrate in Chapter 6, avoids reification of a priori ideas by instead considering the cultural-historic specificity of material-discursive entanglements. An individual's age, class, natural ability, lineage, occupation, or regional birthplace mattered in the general scheme of Maya socio-sexual interactions and identity formations.

Nevertheless, individuals who cannot easily be slotted into the sexual division of labor's dichotomous categories continue to befuddle some researchers and those who report on them. "Maya Royal Tombs found with Rare Woman Ruler," a *National Geographic* online headline described a burial from Nakum in northeastern Guatemala.[3] "It's surprising to me—we were expecting a male," the tomb's excavator Wieslaw Koszkul remarked. He then went on to explain that "while other nearby cities had turned up some evidence of female rulers, Maya queens were uncommon compared to kings." The perception that female rulers are deviations from the sociopolitical norm is perhaps one reason *Archaeology* magazine included the tomb on its list of the year's top ten discoveries.[4] Sexual exceptions sell.

The similarities between this burial and the Neolithic embracers discussed in Chap. 4 are worth noting—their purported rarity, sensationalized representation in international news coverage, validation by scientists, limited treatment in peer-reviewed scholarship. In contrast to the Neolithic period, however, researchers have a far better grasp of pre-Columbian Maya culture given the varied source materials discussed above. In the specific case of Classic female rulers, iconography and material remains indicate that they were powerful and far from uncommon (e.g., Cucina and Tiesler 2006; Hewitt 1999; Looper 2002; Martin and Grube 2000; Miller and Martin 2004; Reese-Taylor et al. 2009).

Certain socio-sexual lives continue not to matter inasmuch as they are regarded as anomalous or erased altogether from traditional narratives about the past. That

[3]See http://news.nationalgeographic.com/news/2011/09/pictures/110922-rare-mayan-female-ruler-tomb-found-guatemala/, accessed on 1 August 2015.

[4]See http://archive.archaeology.org/1201/features/topten_guatemala.html, accessed on 1 August 2015.

they complicate commonsensical notions about labor, and in so doing offer us a richer, more holistic understanding of past cultural systems, are two reasons they require investigation. To this end, researchers can remain vigilant in their critical assessments of work, discerning biases and new intellectual queries. Such a strategy was discussed at this chapter's outset. Specifically, Watson and Kennedy's (1991) study of agricultural development in eastern North America highlighted female gatherers' initiative and importance, a pointed contrast to traditional scholarship. In the case of Maya queens, androcentrism has depicted these figures as passive objects by framing their significance in terms of women's "exchange" (per Levi-Strauss). A feminist approach to the topic would be useful for addressing the complexities of and women's agency in marital alliances, as well as gendered identities intersected by age or physiological life stage (i.e., fertile, post-menopausal), class, lineage ties or position, and regional affiliation. Clearly, when we talk about queens or female rulers, a small subset of Maya society—royalty with political and religious cache—is the focus. Analysis of intersectionality moves bioarchaeologists beyond essentialized or deterministic presentations of Woman, a shortcoming in Watson and Kennedy's earlier treatment. In so doing, we may make inferences about political interactions, violence and victimization, and the complex social identities within any given community that are informed by one's achieved or ascribed status and ethnic identity [e.g., Imperial Roman, Italy (Beauchesne and Agarwal 2014); Ancestral Pueblo, New Mexico (Martin et al. 2010); Spanish Colonial Florida (Stojanowski 2010)].

In revisiting ideas discussed at the chapter's beginning, we may also think about those far queerer inferences invoked by Conkey (1991) in her study of southwestern Europe during the Magdalenian period. Attention to persons defined by ambiguity highlight the inadequacy of conceptualizing labor in terms of sexual or gendered division, as do males who depart from the morphological norm or females who exhibit "male"-like characteristics. To extend the Maya case study, female-bodied individuals performing rulership also invite researchers to examine socio-sexual identities and interactions that defy easy categorization. Associated practices and beliefs may signal masculinity. Or, they may eschew dichotomy altogether, and speak to a culture's understanding of genders and sexes as three, four, five, etc. in number. Accordingly, we may disentangle biological sex from social constructions and get closer to a particular society's emic understanding of the bodyscape. The problem, as I see it, is a pervasive and persistent inability to contextualize and think creatively about the inferences we may draw from these complications—not just for the sake of doing so but because the bioarchaeological data demand it.

5.6 Deviations from Divisions

To be clear, I do not take issue with bioarchaeologists' technical ability to discern biological differences and then link observed data to social behaviors or activities. Joanna Sofaer Derevenski's (2000) study of skeletal remains from Ensay (United

Kingdom) is a good example of how researchers may effectively document and analyze the marks of activities that are gendered and habitually performed. She determines that females' vertebral bodies display marked osseous changes in contrast to males. Comparison of the sample with one from medieval Wharram Percy, where males and females display no statistically significant differences, indicates that degeneration and remodeling were activity related rather than a consequence of biological sex. The bioarchaeological data, she argues, are evidence of a gendered division of labor at Ensay. The use of load-bearing creels was likely the cause of women's bodily comportment. The interpretation is one that certainly moves beyond thinking about women only in terms of reproduction, and Sofaer Derevenski's analogical inferences are well supported with pertinent historic and ethnographic sources.

Seeing that it is bracketed by the sixteenth and nineteenth centuries, a span in which political economy shifted dramatically and the ideology of separate spheres emerged, this British case study generates additional queries about past socio-sexual lives. What social and concomitant corporeal changes were wrought by the rise of industrial capitalism in rural and/or urban settings, for instance? While Ensay's remoteness may have buffeted it from the more dramatic effects of industrial capitalism, I do see the topic as deserving of future bioarchaeological investigation. Here, however, I turn my attention to an intriguing aside in the essay. "Gender roles were divided according to biological sex," Sofaer Derevenski (2000: 335), writes, "with severe social penalties for transgression." The statement is important inasmuch as its affirmation of a sexual division of labor simultaneously calls this socioeconomic organization into question.

Policing social norms and punishment for their violation do not occur gratuitously, but arise to contend with individuals perceived as threats to or deviations from the status quo. As much as deviations, or deviants, from the norm are imagined or created, real people fail or choose not to conform given their socio-sexual identities or interactions. That is, individuals deemed socially deviant have a physicality, materiality, and spatiality. Early modern Britain was no exception. During this period, men cross-dressed as well as functioned as women, and vice versa (e.g., Barker and Chalus 1997; Cressy 2000). Many socio-sexual transgressions, historian David Cressy (2000) discusses, were tied to labor. Prostitution and military service, in particular, often involved female-bodied individuals' transgression of social norms defined by the divisible, straight (in the heterosexual sense), and narrow. "Women passed as men in order to better their circumstances, to obtain the privileges or work of the opposite sex," Cressy (2000: 110) relates.

The social deviance of fops, for instance, threatened normative constructions of eighteenth-century masculine identity, which informed the ideology of separate spheres (Carter 1997). Males' effeminate dress and mannerisms in public places tied to politics and commerce, like the coffeehouse, were worrisome. Fops—who were distinctive from mollies, sexually deviant males who sodomized other males—jeopardized the nascent socioeconomic system of industrial capitalism. Fops, mollies, prostitutes, soldiers, creel-bearers, farmers, factory workers, etc., are the socio-sexual lives that made up the panoply of the early modern Britain world.

Clearly, division of labor cannot capture the diversity of daily life. How might the analysis of bioarchaeological data contribute then to such a project?

Identifying and explaining deviations within the acknowledged patterns of a burial sample is one way to document diverse socio-sexual lives. This is not to say that deviations from etic categories are suggestive of culturally constructed deviance. To determine if such is the case, a researcher should deliberate about the links a culture makes (or does not) between the individual and society. For example, Elizabeth Perry attends to the individual–society dialectic in her extended study of labor in the Puebloan world of the American Southwest (Perry 2004; Perry and Joyce 2001; Perry and Potter 2006). For her doctoral work, Perry (2004) examined skeletal materials from Grasshopper Pueblo (Arizona) during the Pueblo IV period (ca. A.D. 1275–1600). Analysis of musculoskeletal stress markers revealed patterns suggestive of a sexual division of labor. Ethnographic observations of contemporary Puebloan communities formed the basis for analogical inferences about pre-Hispanic remains. Perry's list of labor activities included fishing, load carrying, weaving, pottery production, and hide working, amongst other tasks. Were her queries about labor's division to stop with skeletal verification of these ethnographic accounts, which are in need of critical feminist assessment, her research would have replicated the deficiencies of other studies—trivialization of age differences, communal involvement, multistaged activities, exceptions to the rule, etc. In subsequent publications, however, she also considers the gender performances of *lhamanas* (Perry and Joyce 2001; Perry and Potter 2006).

In early ethnographic accounts, Euro-American writers thought lhamanas were "transvestites" or *berdaches*. Perry and coauthors instead refer to these persons who defy dichotomous categories as "transgender" (Perry and Joyce 2001; Perry and Potter 2006). To clarify, and as I discussed in Chap. 1, I am reticent to use transgender as a descriptor of male-bodied individuals who performed women's work (or vice versa) given the concept's modern politicization. Driskill et al. (2011a, b: 11) have instead put forth Two-Spirit. In explanation: "As a critique of anthropological writing based in colonial and western notions of gender and sexuality, the category Two-Spirit creates a distinct link between histories of diversity and Indigenous GLBTQ$_2$ people today." Yet, far more preferable than either term is a group's locally bound linguistic designator (e.g., Chumash *'aqi*, Navajo *nádleehí*, Zuni *lhamana*). These underscore the heterogeneous nature of gender variance in North America.

In this vein, and despite their use of "transgender," Perry and Potter (2006) recognize that the lhamana must be understood within the context of the overarching sex/gender system, which was dualistic in the ancestral Pueblo worldview. "The male-female dichotomy is continually reproduced," Perry and Potter (2006: 121) write, "yet abjections of these representations leak from the system." But, seeing that their activities occurred in domestic and ceremonial settings, lhamanas were likely perceived as indispensable and not socially subversive or deviant. Though Perry's bioarchaeological data do not offer conclusive evidence of lhamanas, her spotlighting of the individual is nonetheless useful for model building about its material dimensions.

Sandra Hollimon's (1996, 1997, 2000) work on the *'aqi* in Chumash society is particularly effective in this regard. These persons were male-bodied individuals who labored as women, or possibly postmenopausal women. And Hollimon is able to identify their historical traces and bioarchaeological correlates, as well as the cultural processes tied to their shifting formation and dissolution.

An additional example of gender variance involves those of female body and masculine identity. These individuals have long been effaced from the official versions of Western history, an oversight that scholars have since worked to address (e.g., Edgerton 2000; Halberstam 1998; Mullenix 2000; Tsui 2006). For my part, I discuss biohistoric evidence of warrior women in the Samuel G. Morton Crania Collection.

To clarify, my focus is not on the presence of biological ambiguity in historic collections. Cultural alterations like castration or naturally occurring phenomena like intersex conditions are demonstrative (e.g., Belcastro et al. 2011; Eng et al. 2010; Wilson and Roehrborn 2000). Such identification, while difficult, is feasible and in need of expanded methodological and theoretical attention. Charles Merbs (2008), for example, has done the former in his biohistoric analysis of Casimir Pulaski's human remains. Merbs identified key data that call the famed Revolutionary War hero's male sex into question, or pointed to the intersex condition congenital adrenal hyperplasia (CAH). His skeletal analysis documented overall gracility and a short stature, about 5 feet and 3 inches. Pelvic markers were well within the female range (i.e., broad pubic element, wide and shallow sciatic notch, preauricular sulcus). Cranial features, however, were a mosaic of female and male traits—the absence of superciliary arches and pronounced mastoid processes, respectively. Historic documentation is similarly suggestive of ambiguity. Atypical for the times, Pulaski's Catholic baptism took place in the family's home, perhaps to draw public attention away from the infant's ambiguous genitalia. In explanation, baptismal records only noted "*ob debilitatis causam*." Additionally, he is always depicted with the allusion of breasts and a receding hairline (markers of CAH), as well as a prominent codpiece (perhaps suggestive of overcompensation). The question remains for future investigation, what might have Pulaski's biological ambiguity meant in eighteenth-century Europe, a period and place where the classical one-sex model was being supplanted by representations of the biomedical body as dichotomous (Laqueur 1990)?

5.7 Women Warriors

Rather than thinking about the bodily differences that defy dimorphism, and how such difference was understood at a specific cultural–historical juncture, my work with the Samuel G. Morton Crania Collection has concentrated on a culture's disentangling of biology from gender. Morton, a Philadelphia physician, is best known for his global collection of crania and the scientific racism engendered by its study (Fabian 2003, 2010; Geller 2015; Gould 1981). Prior to dying on May 15,

1851, he had amassed a total of 967 crania. As described in copious personal correspondences, Morton did so by soliciting colleagues, amateur paleontologists, U.S. Army surgeons, etc. The manners in which these individuals acquired skulls for him were more often than not iniquitous. Their work was facilitated by passage of the Indian Removal Act in 1830—the same year that Morton initiated formal collection. Under the guise of paternalism, Andrew Jackson's final solution set in motion violent clashes between U.S. troops, frontier settlers, and American Indians. Landscapes quickly became depopulated of their native inhabitants. Euro-American scientists met with little resistance when they desecrated Indians' bodies left strewn across battlefields or plundered their graves. In the name of science, they were then transported far from ancestral lands and final resting places (Fabian 2003, 2010; Geller 2015).

These processes served to erase certain socio-sexual lives, namely those individuals who deviated from the socio-sexual norms that dominated in the nineteenth century. A biohistoric approach, I have found, has served to recall information about their identities and interactions. In the case of the Morton Collection, which lacks postcranial remains, sex determination was made from analysis of cranial features (Buikstra and Ubelaker 1994). I do recognize the methodological tenuousness of such an assignment. Increased age, pathology, and activities can confound, and modern populations are often used as reference samples, resulting in certainty only 85–90 % of the time (Mays and Cox 2000: 119–120; Meindl et al. 1985; Walker 1995). The Morton Collection, however, has considerable archival and historic documentation to support sex determinations. These sources include pertinent correspondences, original research notes, and book marginalia amongst other things. Using this approach, I have identified three possible females who are also labeled warriors.[5] Two of these individuals are discussed here, one culturally identified as Ottawa and the other Sioux (Fig. 5.1).

In *The Catalogue of Skulls of Man and the Inferior Animals*, Morton described entry 1007 as an "Ottawa warrior" (Morton 1849:87).[6] On the decedent's left side, running parallel to the inferior temporal line is inked Dr. G.C. Leib. The moniker refers to George C. Leib. He and Morton were alumni at Penn's medical school and shared a predilection for natural history. In a letter dated June 28, 1841, Leib explains to Morton that he obtained the cranium along with three others from a "sepulcher" on the banks of the Ottawa River in northern Ohio. He detailed the location of the burial ground, grave construction, position of bodies, and associated mortuary objects. His exhumation of the crania and its gifting to Morton likely went unprotested by Ottawa kin. As Leib (1841) relates, "The tribe to which it belonged

[5]The third individual is culturally identified as Seminole (97-606-708). In a forthcoming manuscript titled *Your Obedient Servant*, which treats the Morton Collection as a direct outcome of necropolitical conditions, I expand on this decedent.

[6]Morton's original cataloguing of his collection has been amended over the years. In 1966, ANSP loaned it to Penn Museum and L-606 prefaced Morton's original designations. In 1997, Penn Museum changed the L- to 97- when the loan was formally gifted. Today, the Sioux and Ottawa decedents are labeled 97-606-605 and 97-606-1007, respectively.

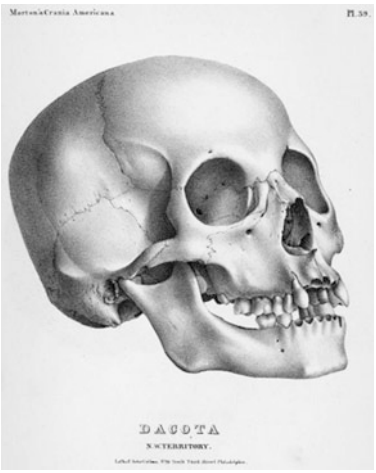

Fig. 5.1 Cranium in the Morton Collection labeled Sioux. Original lithograph drawn by John Collins. (General Research Division, The New York Public Library (1839). *Dacota, N.W. Territory.* Retrieved from http://digitalcollections.nypl.org/items/7cf9f2eb-2560-fae1-e040-e00a1806480b)

have departed, in common with most of their people, to the country assigned them by government west of the Mississippi River." With a postcolonial lens in place, however, one might argue that "departure" glosses over the rather insidious nature of many Ottawas' forced relocation to Kansas in 1837.

Neither Morton nor Leib noted the Ottawa decedent's sex and age. When I revisited the Morton Collection, my skeletal analysis of the decent indicated a possible female sex. The cranium displayed an overall gracility, and the only male-like feature was an intermediate to pronounced mastoid process. It is also possible that the skull's overall gracility and parietal bossing are a consequence of advanced age (Walker 1995). Dramatic antemortem tooth loss, an almost edentulous maxilla, and significant ectocranial suture closure on the sagittal and lambdoidal sutures suggested that the individual was 50+ years at the time of death. A healed fracture extended from the nasal region to the left side of the maxilla.

A second cranium in the Morton Collection, which Morton labeled 605, had belonged to a Sioux individual from Wisconsin. Sometime between 1800 and 1838, Dr. William Cox Poole sent the skull to Morton. As elaborated in *Crania Americana*, the decedent had been "a Sioux warrior of bad character…who was killed by some act of violence on the northwestern frontier" (Morton 1839: 198). Morton also identified the specimen as a man. Yet, in the *Academy of Natural Sciences Ledger*, the original document cataloguing ANSP's holdings, the skull was sexed as a young female. Cranial attributes support this reassignment of sex, and dental calcification and eruption suggest a young age at death, 17 ± 3 years old. It is of course feasible that the youth's characteristic male features were not as pronounced as they would have been in an older individual. Nevertheless, the historic confusion surrounding this decedent's sex and the possibility of gender variance are causes for deliberation.

Queer scholar Judith (Jack) Halberstam (1998: 52), who has written at length on female masculinity, stresses that investigators of cross-identification must consider

the historical context that is backdrop for their studies. Nor should one presume that female masculinity always indicates lesbianism (i.e., gender = sexuality). Her points are well taken when we consider any type of gender variance. I would add that we must take into account a culture's specific and shifting understanding of the connections between sex, gender, and sexuality (Blackwood 1984).

For Morton, it would have been difficult if not impossible to comprehend gender variance in an age of separate spheres. His dichotomous conception of gender—and sex, for they were one and the same in the nineteenth century—provided no frame of reference. A female-bodied individual wearing breeches, symbols of masculine power and autonomy, was seen as a socially subversive act (Mullenix 2000). And while biomedical practitioners had much to say about hysteria, they made few accommodations for young ladies who were rebellious, violent, and belligerent. As a pointed contrast to demure Euro-American ladies, women of color—Pocahontas (Green 1975) or the "Hottentot Venus" (Fausto-Sterling 1995), Native American and African examples, respectively—could be (hetero)sexually lustful and conquerable. Female masculinity was another matter, however.

Native Americans' gender variance, when acknowledged in Euro-Americans' accounts, was much maligned. As many scholars have remarked, Christian proselytizers and colonizers only understood Two-Spirits in terms of sexuality. Hence, they oversimplified a fairly complex category of personhood informed by same-sex intimacies, occupational specializations, spiritual sanction, gendered norms, and/or personal predilections (Driskill et al. 2011a, b; Jacobs et al. 1997; Morgensen 2011; Roscoe 1988, 1991, 1998). Female-bodied gender variance, for instance, could include queens, warrior women, women chiefs, and/or manly hearted women (Roscoe 1998). These individuals could have been female Two-Spirits, defined here as anatomical females involved in cross- or mixed-gender socioeconomic behavior, partial and/or occasional cross-dressing, and intimate same-sex relations (Roscoe 1998: 73). Or, they could have represented categories of personhood that exploded gender dichotomies altogether.

In the case of the Ottawa, historic accounts of labor make claims for its sexual division, but descriptions also reveal activities that are complex, cooperative, flexible, and communal (Cleland 1992: 44–49). Men and women held political positions of power, and some socio-sexual lives were defined by female masculinity (Ann Jameson 2011 [1838]; Roscoe 1998: 220). Ann Jameson (2011 [1838]: 77–78), a nineteenth-century adventurer and chronicler of the Chippewa and Ottawa recalled,

> During the last American war of 1813, the young widow of a chief who had been killed in battle, assumed his arms, ornaments, wampum, medal, and went out with several war parties, in which she distinguished herself by her exploits…Heroic women are nor rare among the Indians, women who can bravely suffer—bravely die; but Amazonian women, female amateur warriors are very extraordinary.

In this instance, masculinity or manliness—as evidenced by actions and accoutrements not biology—appears to be the foundation upon which military prowess was erected. But, for the Ottawa, the female-bodied warrior does not seem to represent a linguistically distinguished Two-Spirit, like the lhamana. Rather,

Jameson's example signals a socio-sexual life that was exceptional, situational, and dynamic—that is, contingent on social circumstances, historical context, and political events.

Similarly, Roscoe (1998: 76) suggests that Sioux women warriors' development was strategic. Moments of historical and cultural crises, like those that followed from the U.S. government's violent and forced relocation of American Indians, provided an impetus.

> One might argue that the careers of these Plains women reflect the tumultuous conditions of the nineteenth century, when their tribes were locked in a desperate armed struggle with the United States. As one male leader after another fell before the advancing wave of violence, women occasionally stepped in to fill the breach…Every aspect of Plains Indian life was changing in this period. It would be hard to say what was "normal" for any institution or social role.

The Sioux, however, did linguistically mark male-bodied and female-bodied Two-Spirits, which suggests more stable categories of personhood. The Lakota (or Teton) identified a male-bodied *wingkte* (or *winkte*), a "would-be woman," and a female-bodied *lila witkowin*, or "crazy woman" (Kenny 1988: 17; Roscoe 1998: 13–14, 216). And the Santee (or Eastern Dakota) and Western Dakota labeled the latter as *winox:tca' akitcita*, or "women police" (Roscoe 1998: 216). These female-bodied Two-Spirits also had an aversion to opposite-sex marriage and an affinity for same-sex desire (Roscoe 1998: 72). It is possible that the Sioux warrior described by Morton as having a bad character was such a "crazy woman." More certainly, this individual's short life had been a stressful one, as evidenced by active cribra orbitalia. Malnourishment, chronic infections, and substandard living conditions—all possible causes for cribra orbitalia (Walker et al. 2009)—suggest a type of structural violence that resoundingly and tragically characterized all native peoples' colonial experiences.

Given this history of heteronormativity and racism, the possibility of women warrior in the Morton Collection is important for several reasons. Certainly, they represent deviations from established patterns, and as a consequence highlight diversity and ambiguity in past cultures. Of their contemporary salience, making visible such persons works to decolonize knowledge about gender and sexuality (e.g., Driskill et al. 2011a, b; Jacobs et al. 1997; Roscoe 1988). Colonialism engendered intolerance within native communities; stigma came to surround those individuals whose socio-sexual identities were antithetical to Western heteropatriarchy and Christian beliefs (Finley 2011; Gilley 2006; Kenny 1988; Smith 2011). Indigenous individuals who identify as Two-Spirits describe these contradictions and their personal experiences quite eloquently.

For example, Michael Red Earth (1997), whose family resides on the Sisseton-Wahpeton reservation making him a descendant of the decedent Morton labeled 605, has recounted his conflicted identification as *winkte*. Tribal members who maintained more traditionalist views about gender and sexuality accepted his identity, while those who articulated assimilationist beliefs responded with homophobia. About his coming out, he (1997: 216) writes, "The difficulty of my family

came when they tried to incorporate their indoctrinated feelings from assimilation with our cultural legacy." Hence, queer indigenous scholars and activists read homophobia and heteronormativity in present-day Indigenous communities as the maintenance of colonial oppression. In this regard, biohistoric evidence of warrior women offer a powerful response to Western society's heteropatriarchical sex/gender system—far more "normalizing" (naturalizing) and narrow in its conception of difference. Warrior women are queer because they serve as a reminder—despite efforts to erase them from the landscape of the body politic—that the U.S. nation state includes those bodies deemed undesirable. Political activists might argue that they offer the foundation for decolonization and the remaking of the nation state.

5.8 Conclusion

The Industrial Revolution has two important lessons to impart that are pertinent to this book's main concerns. First, the reorganization of labor significantly restructures a culture's sex/gender system. Second, new types of labor impress themselves on bodies in profound and/or pathological ways. That is, the marks of foraging are often distinct from those of farming and factory work, and labor undertaken by free folk is often less brutalizing than those performed by those who are enslaved. Yet, regardless of the revolutionary period—Human, Neolithic, or Industrial—bioarchaeological researchers are often challenged to imagine any type of socioeconomic organization in which female physiological processes do not constrain women's activities. Technological innovation, whether stone tool or threshing machine, created new opportunities for males, but females are primarily the hand that rocks the cradle.

I do not mean to imply that the Feminist Revolution's impact on the human condition has been imperceptible. Rather, social progress has been slow and hard won. Exposing the historic machinations that gave form to the ideology of separate spheres has helped in these efforts. Its formalization in the nineteenth century is a consequence of social, political, economic, and religious factors. Canonical figures in anthropology scientifically then validated males as producers and females as reproducers. Darwin ascribed biological attributes to labor's division, Spencer was instrumental in framing such organization in cultural evolutionary terms, and Durkheim and Malinowski initiated a concern with its heteronormative functions. Bioarchaeological studies of labor's sexual division continue to reiterate these historic ideas, which now seem like human nature.

To counter presentations of sexual division of labor as longstanding and ubiquitous, a queer critique brings the complexity of identities to the fore, as well as acknowledges and explains ambiguity, i.e., the quasi-activities identified by Murdock and Provost. In so doing, we can move beyond thinking about labor only in terms of dichotomy and determinism.

Hence, bioarchaeological identification of socio-sexual identities and interactions that defy biological determinism and easy categorization has the potential to

address how hegemonic structures are reproduced and subverted. They also call into question the absoluteness of the sexual division of labor. Evidence of female-bodied warriors is especially effective in this regard. In the case of nineteenth-century Native America, such gender variance does not appear to have been homogeneous across tribal groups. In some native communities, it was a longstanding category of personhood. It predated European conquest but became stigmatized during colonialism and Christianization. In other cases, sociopolitical circumstances connected to U.S. nation-building provided a catalyst for indigenous peoples' responses. These served as a survival strategy, not a social norm or transgression, in the face of extreme structural and interpersonal violence.

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Chapter 6
"She Gives Birth"

6.1 Introduction: Period

"Where have all the menstrual huts gone?" I asked undergraduates in my Principles of Archaeology course. It was near the end of the semester and I was lecturing on household archaeology. One of my intents was to underscore how space shapes social organization and how the social can turn space into place, the difference being that people give meaning to places but spaces just are. Menstrual huts are particularly illustrative in both regards. These spaces—their locations and forms—impact users' embodied experiences, while socioreligious beliefs about bodies, gender, and sexuality explain who and why certain individuals can occupy such places or are prohibited from doing so.

The query about menstrual huts, which was originally posed by Patricia Galloway (1997), engendered an interesting array of reactions from my students. No one appeared scandalized. But, some looked uncomfortable, and others laughed. A few stared blankly at me, which may or may not have had to do with my question. In the discussion that followed, most did not see the relevance of menstrual huts to the topic at hand or archaeology more generally. Their reactions served to nicely reiterate one of Galloway's more important points, namely, that suffering, taboo, and pollution inform contemporary responses to menstruation—its accouterments, sites, and by-products. Archaeologists' reticence to pursue the topic in depth then should come as no surprise since they, too, are members of a culture that does not celebrate monthly cycles. We should find the implicit sexism that produces such silences disquieting, however.

Researchers have been cognizant of menstrual huts. Yet, perduring architectural evidence for menstruation has not proven sufficient investigative enticement (though see Beausang 2000; Galloway 1997; Marucci 1999). For example, in a 1966 publication, Frank Eddy documented the presence of menstrual huts in New Mexico's Navajo Reservoir District. But, he seemed to waver about the features' functions. One eighteenth century structure at Tse Ni Village (A.D. 1700–1775), he

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noted, had a "basin-shaped floor…[and was] either a sweat lodge or menstrual hut" (Eddy 1966: 89). His statements suggest that buildings with distinct purposes linked with physiological processes (i.e., sweating and bleeding) would be difficult to distinguish. Nevertheless, he then goes on to state that the sweat lodge was a more likely explanation since twentieth-century Navajo beliefs required menstrual huts to be built on communities' outskirts (Eddy 1966: 90–91). Less significant for him is the absence of archaeological evidence like heat-cracked rocks, to support his supposition that these features are sweat lodges.

A critical feminist perspective would highlight two additional shortcomings with Eddy's interpretations. In using contemporary culture as a direct historic analogy, he does not broach the degree to which the Navajo sex/gender system changed in the wake of contact with other southwestern groups and/or European colonialism. Nor does he acknowledge the implicit asymmetry connoted by designating one structure a lodge and the other a hut. Rather than being fixed or embedded, a hut evokes images of poor construction, marginal location, and structural impermanence (Galloway 1997). Who would willingly spend time in such a space? And why then bother to investigate a feature that left such an ephemeral trace on the landscape?

As I discuss in this chapter, the reasons why menstruation or any female-bodied physiological process requires study are multiple. Contingent on the time and place, female-bodied processes may have led to temporary banishment. But, in other cases, one's stay in a female-identified place may have provided reprieve and acted as ritual necessity for those who sheltered within. These places then should not be reduced to biological happenstance, women, and/or their socio-sexual avoidance. Contextualized study of places, persons, and practices associated with female bodies can communicate much about spatial organization of communities, medico-religious beliefs and practices, persons' agency and social significance, and socio-sexual relations intersected by age, gender, and/or status. Accordingly, we can begin to tease out a culture's historically contingent, emic understanding of the bodyscape.

To this end, I consider reproductive management, which Barbara Voss (2008: 320) has defined as "the prevention and the promotion of conception as well as measures taken to interrupt or support the development of the embryo or fetus and to care for the birthing mother and infant before, during, and after delivery." Reproductive management may impart an individual with control over her own fertility as is the case in contemporary Western society, debated and politicized though it may be. Alternatively, and in a societal setting when individualism is not an ideological foundation, reproductive management may have involved a collective effort, the responsibility not of an individual but a larger community. In this sense, it is necessary to think about persons as relational and interdependent. Reproduction as communitas (or framed another way, the literal reproduction of communitas) is just one reason that we need discuss its management in contexts removed from the biomedicalized ones that are Western in origin.

As discussed more fully in Chap. 7, Karen Barad has attended to biomedical practitioners' use of technoscientific apparatuses, like ultrasonography, to instigate a

process of becoming. Specifically, the creation of a fetal image simultaneously endows matter with life and socio-sexual identity. Yet, it is equally important to not see the ubiquity of these material-discursive practices, which produce biocultural bodies and contour shared embodied experiences, as inevitability. Rather, they are the outcome of complex, historic processes. To this end, and in keeping with Foucault's genealogical agenda, I track a prehistory of present conditions within a non-Western case study. Here I concentrate on reproductive management in Maya society, proceeding from the pre-Columbian period up to the age of modern medicalization. Special attention is paid to the midwife, a figure that bridges the traditional and modern, mundane and supernatural, and individual and community. "Midwifery," Laurie Wilkie (2003: 147) has recognized, "cannot be seen as separated from other aspects of reproductive strategies." To this end, I consider the spaces in which the midwife operated, the practices that fell under her purview, and the socioreligious significance of her position. Data are culled from archaeological materials, bioarchaeological remains, historic accounts, and ethnographic observations.

My aim in this chapter is twofold. First, I do not simply reference contemporary sources to inform inferences about past places, persons, and practices. To do so may inadvertently yield presentist inferences. Rather, as Elizabeth Brumfiel (2006) recognized in her comparative historical study of Mesoamerican weavers, ancient remains provide a starting point for tracking how cultural continuity and change surface in other types of evidence. The case study in this chapter then serves to highlight the importance of including materiality in analyses that seek to debunk common sense about sex, gender, and sexuality. Additionally, while women's reproduction may not be a queer matter per se, the complex case study presented here serves to further underscore the shortcomings with an oversimplified and universal representation of female reproducer, as treated in the previous chapter.

6.2 Life, Death, Rebirth

Obvious evidence of reproductive management in pre-Columbian Mesoamerica is rare, which makes the few known examples all the more informative. Ceramic sculpture and painted image are especially evocative of the supernatural and they visually reiterate the practical aspects of childbirth and postpartum care. One beautifully rendered example is a polychrome vessel from Boston's Museum of Fine Arts. Two separate though related scenes appear on the vase (Fig. 6.1).[1] A Moon Goddess assumes a squatting position and gives birth to a rabbit; she is identifiable by her elaborate hairstyle, large earspools and bracelets, perky and

[1]This vessel is designated K559 in the Maya Vase Data Base, an archive of rollout photographs created by Justin Kerr. Images of it can be found at http://www.famsi.org/research/kerr/index.html. While it is unprovenienced, its decorative style suggests it was created in the Classic period (ca. A.D. 550–850).

Fig. 6.1 Maya polychrome of the Moon Goddess giving birth (Photograph K559 © Justin Kerr)

exposed breasts, and body paint.[2] An umbilical cord connects goddess to rabbit, and in the background blood flows forth from the former. In the second scene, Goddess O—signaled by sagging breasts, lines ringing her eyes and mouth, and the knotted fabric on her head—sits cross-legged atop a throne, a monochrome skirt covering the lower half of her body.[3] Painted designs adorn her upper arms and chest. She teaches a kneeling Moon Goddess how to properly nurse the newborn rabbit (Miller and Martin 2004: 97). In this Moon Goddess's left hand, she holds up the front of her fringed skirt. The markings on her face and body are distinct from the deity's designs in the birthing scene, as are her skirt's details and hairstyle. The differences suggest the existence of multiple Moon Goddesses, or two facets of the same deity.

A second example of reproductive management colloquially known as the Birth Vase is comprised of four flat sides (Fig. 6.2).[4] Though the vessel's rectangular shape creates the impression of separate and static scenes, I would like to suggest that it presents dynamic, interconnected, and cyclically occurring events. In his analysis of the vessel's hieroglyphs and iconography, Karl Taube (1994) argues that the vase's shape symbolizes a house writ small. The importance of Maya houses as places actively involved in birthing new lives and rebirthing the recently deceased cannot be understated. As displayed on the Birth Vase's first panel, a house lends structural support to a young birthing goddess (Fig.6.2a). Her frontal position indicates that she

[2]In the Kerr Database, additional examples include K796, K5166, K2733, and K3462.

[3]In the Kerr Database, an additional example is the figurine labeled K5778.

[4]Images of this vessel can be found at http://www.famsi.org/research/kerr/index.html. The Maya Vase Database is an archive of rollout photographs created by Justin Kerr. In this data base the Birth Vessel is catalogued as K5113. While not a singular example, rectangular shaped vases are not common; most vases were cylindrical.

Fig. 6.2 The four sides of the Birth Vase. From left to right are panel 1 (**a**), panel 2 (**b**), panel 3 (**c**), and panel 4 (**d**). (Photograph K5113 © Justin Kerr)

is the scene's central actor. She stands, holding unto a rope intertwined through the building's roof beams. The significance of her non-supine position is one to which I will return. The arms of an elderly deified female, Goddess O as suggested by certain iconographic details, circle her waist. Though her face is hidden from view, the attendant's emblematic knotted headband and cotton spindle peek from behind the birthing deity's back. She appears to be applying fundal pressure to the upper region of the uterus (the fundus). When directed down to the birth canal, this kind of manipulation can shorten labor and ease delivery. A sash tied beneath the birthing female's bare breasts may also serve a similar function. A second elderly female, another representation of Goddess O, stands adjacent to the pair with dish in hand and breasts exposed. She too wears a knotted, serpent headscarf that has a cotton spindle tucked into it. All of these deities, according to Taube (1994), stand atop a sacred mountain, which is situated above the cave-like underworld.

On the vase's second panel, three elderly women appear (Fig. 6.2b). Their age, actions, and iconographic details signal that they too are midwives. According to Taube (1994), this scene depicts the birth of a supernatural figure. From the mouth of a serpent, a standing midwife receives an infant with the visage of an old man. She has feline paws and wears a jaguar patterned skirt or pelt. Jaguar imagery symbolized strength and power, as well as the sacrificial and supernatural (Saunders 1994). The two other versions of Goddess O are seated holding basins. Taube has suggested that the deities used the vessels for bathing purposes, though their shape also resembles those used as sacrificial caches. The deity at the bottom of the frame has a jaguar ear. Just above and facing this individual is the third midwife. Similar to the standing midwife, with whom she converses, her skirt and ear have a jaguar pattern.

The vase's third scene shows at least two midwives (Fig. 6.2c). One is seated cross-legged with a large basin or offering bowl in her lap; she wears a jaguar printed skirt. A second midwife faces a serpent with jaguar patterned skin and mouth agape. Poor preservation has obscured her body position.

The vase's fourth panel, which includes two distinct scenes arranged vertically, makes reference to human sacrifice and death (Fig.6.2d). In the bottom half, three old gods surround a burning censer; its serpent visage is reminiscent of the supernatural creatures depicted on the two previous panels. Atop this vessel, a bowl containing cut wood and an obsidian blade eccentric has been set. Two of these deities appear to be connected to the censer by umbilical cords, while the third holds a basin or cache vessel with another obsidian blade. In the top register an old god Pauahtun is seated across from and confers with a second individual. Both are cross-legged and between them is situated a basin containing a blood-tipped blade. Based on dress and hairstyle, Taube (1994: 667) identifies the second individual as a woman, possibly the birthing deity from the vase's first panel. I believe, however, that the individual is not the birthing deity and biological sex is not so straightforward. In contrast to the vase's other three panels—replete with bodies displaying exposed breasts and symbols of birth—this individual's torso is exposed but no obvious breasts appear. Additionally, death and sacrifice are the pervasive messages communicated by iconography. Taken together, these attributes may mark this individual as having an alternative sex (i.e., non-female) or masculine gender.

Regarding the latter, this individual's adornment—a necklace strung with beads, human molars, and a pendant, which possibly depicts an ahau symbol (Freidel and Schele 1988)—signify governance and militaristic success. Contrary to Taube's reading, then, this individual may represent something far queerer, a powerful person that bent gender and/or complicated bodily difference.

It is arguable that all of the deities painted on these vessels embody aspects of life and death, natural and supernatural, past and present. But, it is the figure of Goddess O who expressly mediates the dialectic between these oppositional realms. Paul Schellhas (1904: 38), one of the first researchers to identify Goddess O in his study of the Maya Postclassic pantheon, originally described her as an old woman with facial wrinkles and few if any teeth. Naturalistic Jaina-style figurines bear out his description (Fig. 6.3). Schellhas had little else to say about Goddess O, though he did distinguish her from Goddess I (Schellhas 1904: 31–32). This deity was similarly advanced in years. She wore a skirt with crossed long bones, a knotted serpent headband, and "tiger claws." Goddess I, Schellhas also noted, often held an overturned jar from which water poured. Since his original study, these two elderly goddesses have generated much analytical confusion. It is plausible that instead of

Fig. 6.3 Jaina-style figurine of Goddess O (Photograph K5778 © Justin Kerr)

two different deities, Schellhas documented two manifestations of Goddess O. The deities represented on the Birth Vase lend weight to such an argument.

Subsequent clarification and expansion of Schellhas's work have identified Goddess O as Chak Chel, or Red (or Great) Rainbow (Miller and Martin 2004: 95; Taube 1994). To avoid confusion, I continue to use Goddess O throughout this chapter. Rather than a catchall for the feminine, she is a deity with complex and seemingly contradictory attributes as the vessels' images indicate. On the one hand, she was the patron and postmenopausal goddess of healing, childbirth, and divination (Thompson 1939, 1970; Miller and Martin 2004; Miller and Taube 1993: 46; Taube 1994). These dimensions of reproductive management engendered and protected life. Yet, Goddess O also portends disease, destructive flooding, and death. This dual nature is perhaps why Schellhas initially distinguished between Goddess O and Goddess I; he was unable to comprehend that a single deity could manifest positions that appear quite contradictory. Her link to the rainbow (or *chel*), for instance, was particularly dreadful, as it signified "the flatulence of the demons" (Redfield and Rojas 1934: 206; Taube 1992: 99). Additionally, her crossed long bones when paired with skulls may mark ancestors and their conferral of privileges on subsequent generations (McAnany 1995: 46).

How did the Maya reconcile these aspects of the human condition, which seem quite antithetical in a Western framework? In answer, we might look to Robert Carlsen and Martin Prechtel's (1991) discussion of the Tzutujil concept *Jaloj-K'exoj*, which they argue is a core and quite ancient paradigm for the Maya. The term is comprised of two roots, *jal* and *k'ex*.

> Jal is the change manifested in the transition to life through birth, through youth and old age, and finally back into death…By contrast, k'ex occurs at the 'seed', and refers to generational change…it relates to what might best be described as a form of reincarnation, an integral aspect of Maya religion…Together jal and k'ex form a concentric system of change within change, a single system of transformation and renewal. (Carlsen and Prechtel 1991: 26)

In support of the paradigm's antiquity, Carlsen and Prechtel (1991) identify mythological narratives about life-death-rebirth threaded through the sixteenth century *Popol Vuh* and etched into Classic period sculpture. More recent analyses of Late Preclassic (ca. 400 B.C.–A.D. 200) murals from San Bartolo, Guatemala identify early painted variations on this theme of life cycle and generational changes (Saturno et al. 2005). Bioarchaeological remains, I believe present an additional though underutilized class of data from which we can draw inferences about *Jaloj-K'exoj* and the concept's salience to reproductive management.

6.3 Practice Makes Person

The Classic Maya altered bodies to transform individuals' socio-sexual identities as they moved from cradle to grave to beyond. Human remains bear the traces of antemortem modification and postmortem processing. But, what can the remains

of the dead tell us about beliefs and ritualized practices associated with the birthing of new lives? As I discuss here, and based on my own bioarchaeological study of burials from northwestern Belize, shaped crania offer direct evidence of midwives' postpartum activities.

The ancient Maya bound individuals' heads in infancy. There is an obvious pragmatic reason for doing so at this early juncture in human development. That is, the bones that make up an infant's cranium have yet to fuse. As a consequence, the skull is still malleable. It is, however, not infinitely plastic. Seminal research on cranial shaping identified two general types, tabular and annular (or orbicular), which were contingent upon the technique or apparatus used (Dembo and Imbelloni 1938; Dingwall 1931). These two types were subdivided into erect (vertical) and oblique (tilted backward). Tabular shaping involved placing tablets anteriorly and/or posteriorly with the intent of flattening the skull. To produce the annular type, bands were wound around an infant's head. The result was a narrow and elongated cranium, which appeared cone-shaped.

The earliest, preserved skeletal evidence for cranial modification dates to the Preclassic period, around 900–600 B.C. (e.g., Saul and Saul 1997). The Maya continued to shape infants' heads well into the early colonial period. In the minds of Iberian friars, however, the practice's persistance was an obvious marker of their failed efforts to proselytize. Accordingly, they strove to eradicate this and other types of body modification. Yet, missionaries also recognized that understanding these ostensibly egregious activities would help them to efficiently dismantle natives' socioreligious structures. Thus, ethnohistoric documentation illumines some reasons why Maya peoples may have shaped their infants' heads. Juan de Torquemada's account, for instance, characterized modification as ennobling and functional:

> When the children are very young, their heads are soft and can be molded in the shape that you see ours to be, by using two pieces of wood hollowed out in the middle. This custom, given to our ancestors by the gods, gives us a noble air, and our heads are thus better adapted to carry loads. (in Tozzer 1941: 88, ft. 372)

In contrast, in *Relación de las cosas de Yucatán*, a sixteenth century source concerned with the colonial Maya, its putative author Franciscan bishop Diego de Landa remarked upon the newborn's resultant pain and potential death. The text also discussed cranial shaping's link to early rites of passage. After a mother bound her infant's head, Landa noted, parents and child visited a priest who performed a naming ceremony (in Tozzer 1941: 129). Despite these insights, and as a consequence of chroniclers' socioreligious agendas, there is much about the emic significance of cranial modification that has been lost over the centuries.

To materialize some of the pre-Columbian motivations for modifying heads, I have used a life-course approach to assess a burial sample from the geographically defined study area now known as the Three Rivers Region (Geller 2004, 2006, 2011).[5] This sample is comprised of roughly 130 individuals excavated from house

[5]In past publications, this sample has been referred to as the Río Bravo region sample and the PfBAP sample.

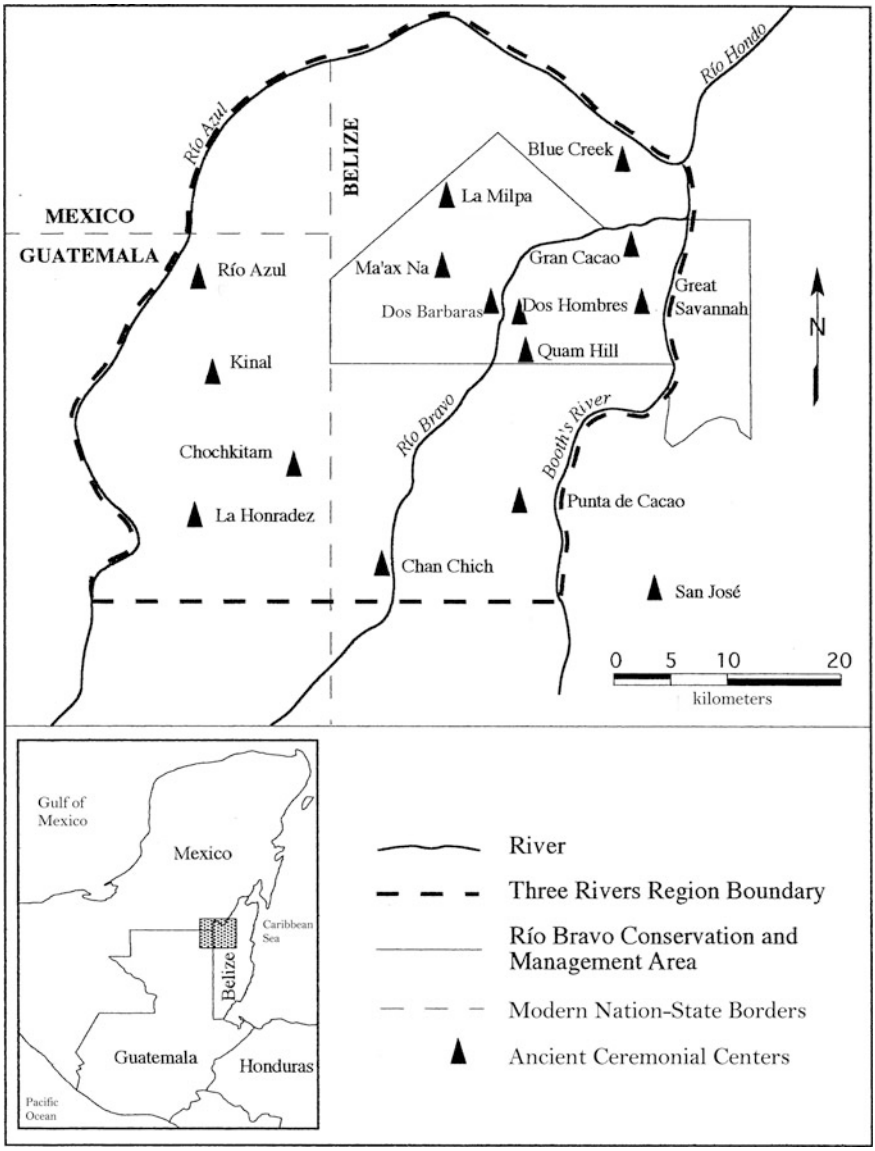

Fig. 6.4 Map of the Three Rivers Region, northwestern Belize (Adapted from Houk 1996)

ruins, minor centers, and major centers. The diversity in sites' sizes signals a socioeconomic cross-section of Maya society (Fig. 6.4). As a consequence of preservation, only 25 individuals, all of whom lived and died during the Classic period (ca. A.D. 250–900), could be analyzed for the presence or absence of in vivo modification (Table 6.1). Four of the 25 individuals did not exhibit any cranial shaping, while five individuals displayed the marks of inadvertent modification

Table 6.1 Occurrence of shaped crania in the Three Rivers Region, northwestern Belize

Type of cranial shaping	Total (N = 25)	% of total
Absent	4	16.0
Present		
Unintentional occipital flattening	4	16.0
Unintentional postcoronal depression	1	4.0
Tabular erect	5	20.0
Possible tabular erect	1	4.0
Tabular oblique	2	8.0
Possible tabular oblique	0	0.0
Possible tabular	5	20.0
Possible cranial shaping	3	12.0

from habitual activities, like the use of cradleboards or tumplines. One of these five individuals also had an intentionally modified cranium. Of the 13 individuals (52 %) who conclusively had shaped crania, all were tabular in style. This percentage is not as high as other places in the Maya lowlands. In her survey of records from the coastal/inland territories of Yucatán and northern Petén, for instance, Vera Tiesler (2014: 195–200) has found that 80 and 94.5 % of individuals, respectively, displayed "artificially" modified crania. Along the Yucatán peninsula's coast and interiorly, tabular erect predominated, but in the Petén region both tabular oblique and erect styles appeared.

As correlated with the Three River Region sample's other classes of data, both sexes displayed cranial modification, as did individuals from noble and commoner settings. These findings are in line with Tiesler's (2014) sweeping analysis of samples throughout the Maya world; her sample size numbers almost 2,000 crania and extended from the Middle Preclassic to the postcolonial period (ca. 1000 B.C.—A.D. 1900). Additionally, molding infants' crania did not necessarily precede modification of their permanent dentition later in life. With information about age, sex, socioeconomic status, and other types of body modifications in mind, what inferences might we draw from the Three Rivers Region sample? Physically and indelibly shaping infants' crania, I believe, transformed them into viable community members. That is, this type of modification represented a material-discursive practice. It instigated a process of becoming and belonging—getting a head start in life, as the case may be. Just what individuals with shaped heads became, however, remains debated.

Tiesler (2011: 127) has argued that a predilection for certain modification types was "passed on through family traditions to make ethnic and possibly clanic statements." But, connecting community or ethnic identity to cranial modification is tenuous because researchers are still fleshing out the degree of ethnic differentiation among the Classic Maya. As Sharer and Traxler (2006: 93–94) have remarked, "Maya civilization comprises a multitude of ethnic and linguistic groups [but]… Maya states were not organized to incorporate conquered territory and

populations." Such political organization then may have made boundary maintenance unnecessary. Furthermore, if ethnic reinforcement is at issue, we would expect to see widespread and homogeneous cranial modification in a community.

But, what are we to make of those individuals in any given burial sample—10 to 20 % in the case of Tiesler's (2011: 129) sizeable skeletal series—without shaped skulls? She suggests that ill health may have been the reason that cranial modification was halted or not initiated. Yet, her explanation contradicts her arguments for why cranial shaping occurred in the first place—to safeguard infants during a spiritually and developmentally dangerous period (see also Duncan 2009; Duncan and Hofling 2011; Tiesler 2014). As a consequence of potential perils, infants "were deemed frail and spiritually vulnerable" (Tiesler 2011: 119). Cranial modification, according Tiesler (2011: 120), acted as "a preventive, protective measure against loss of spiritual energy or heat…and a positive reinforcement." Duncan's (2009) explanation that cranial shaping was but one way to become and belong in a community is perhaps more plausible. Individuals without shaped crania, he suggests, would still have been fully embodied and important members of their community.

Elsewhere, I have argued that the presence of both shaped and unshaped skulls in the Three Rivers Region sample may have signaled an individual's position as the firstborn in a family, as well as his or her ascribed occupation (Geller 2011). Here I would like to suggest that the tabular variety documented throughout this locally bound burial sample invites further consideration of occupation as it pertains to gender. To clarify, I do not mean that cranial shaping set in motion gender socialization. Seeing that both males and females had shaped crania, there is little to suggest that modification is tied to the formation of gender identity. Nor, should we presume that the Maya easily and directly tied sex differences to notions about personhood. Rather, to bring gender to the fore, it is necessary to shift the focus from those who are modified and could not consent to those agents who are performing modifications within a community.

Other scholars have suggested that midwives actively shaped the crania of infants they helped usher into the world (Duncan and Hofling 2011; Tiesler 2011, 2014). Though their archaeological evidence is scant, they do cite ethnographic analogues and ethnohistoric accounts in support. Not just anyone could become a midwife, I believe. As aforementioned iconography indicates, this category of personhood was contingent on distinct socio-sexual attributes of identity, namely feminine gender, elderly age, and supernatural connections. Within a community, and contingent on its size, active and respected midwives would have been few in number. Like other occupational specializations (i.e., writing, weaving, ceramic production), midwives would have handed down technical skills and sacred knowledge to apprentices. Accordingly, we would expect preferred styles to change little over time. Typological uniformity in the Three Rivers Region sample then may signal interpersonal connections between midwives, as well as generational maintenance of the tabular variety. Hence, in the case of cranial modification, a reduction in scale—from the region to the level of the community, family, and individual—is especially constructive for thinking about midwives and the

specialized services they provided. Homogeneity and stability in type may indicate those few midwives that worked at local and interrelated communities, while at large centers comprised of migrants from many distant points of origin, we would expect to see greater diversity in style produced by many practitioners from more far flung locations.

As a category of personhood, the midwife would have been a vital and highly valued member of any ancient Maya community. Accordingly, after her death, mourners may have ritually transformed her corpse, ensuring she became a socially powerful and venerated ancestor. Interment beneath the residential structures that her kin continued to occupy would have been essential for catalyzing this transformation. The midwife's connection to the domestic is one that I have glossed over up until this point. In the next section, I explore it more fully.

6.4 Her Domestic Domain

In general, domestic residences in ancient Maya communities were comprised of one to five buildings that sat atop a low rectangular platform. William Bullard (1960) was one of the first archaeologists to describe this spatial layout based on work he conducted in northeastern Petén, Guatemala. Researchers since this time have identified regional variations on a larger cultural theme. At Tikal, for instance, Marshall Becker (1971, 1999) described a configuration of three residential buildings, or a "Plaza Plan 2" (PP2). In this arrangement, structures form a U around the central ambient space of a patio. A PP2's easternmost structure was a pyramid that often functioned as a household shrine (Welsh 1988). Hence, and as household archaeologists have documented, domestic buildings served mixed purposes. Strict dichotomization—ritual and economic, domestic and agricultural, private and public, women (and children) and men—is not a useful, analytical frame. Rather, as Robin (2002) has argued was the case for Late Classic farmsteads at Chan Nòohol, Belize, these places had less definable boundaries and situationally contingent functions, which in turn invite reconstruction of diverse socio-sexual lives and experiences.

As residential spaces, myriad mundane activities took place in houses—sleeping, eating, bathing, coupling, birthing, and dying. For matters related to reproductive management, ancient Maya figurines are one class of data that point to midwives' dominion over the domestic. According to Christina Halperin, evidence for Goddess O, the aforementioned deity whose dual nature bespeaks birth and death, is largely absent from public venues during the Classic period (Halperin 2014: 136–137). Rather, material remains such as figurines situate her within less accessible, residential spaces. House groups' sweat baths, in particular, were the separate but *shared* features utilized for prenatal and postpartum activities (Alcina Franch et al. 1980: 122). This was not their only function; the Maya also conducted hygienic, therapeutic, and religious (or ceremonial) pursuits in these spaces. But, reproductive-oriented practices occurred with the greatest frequency. Archaeologists have documented sweat bath's

structural presence in residential settings that date to the Preclassic period. These features are small in size, often rectangular in shape, and include a firebox that could be either internal or external to the structure (Alcina Franch et al. 1980; Hammond and Bauer 2001). Sweat baths far grander in scale and perhaps with symbolic and not utilitarian functions have been identified at the ceremonial centers of major Maya cities, such as Piedras Negras and Palenque (Alcina Franch et al. 1980; Child 2007).

Persons and places—midwives and sweat baths—indicate how the pragmatic requirements of reproductive management were entangled with the ritual and supernatural. But, the domestic realm was not just an arena for life's onset. Bioarchaeological remains also attest to the space of the Maya house as one in which corpse processing and ancestral rebirths occurred. After a community member's death, cosmological beliefs guided occupants in the transformation of bodies and buildings. Construction of mortuary features, for instance, replicated sacred landscape features that provided conduits between the terrestrial realm and the supernatural worlds (e.g., Ashmore and Geller 2005; Geller 2004, 2006, 2012, 2014; Gillespie 2000). Within or beneath houses, the Maya interred decedents, and their entombing architecture and subterranean grave spaces acted as metaphoric mountains and caves, respectively (Chase and Chase 1998; Geller 2004, 2006, 2012; McAnany 1995; Robin and Hammond 1991). These practices and beliefs were widespread throughout the Classic Maya world. Royal members of society were situated in association with monumental architecture, which Coe (1988: 235) referred to as "house-sepulchers writ large." The majority of Maya mortuary interment, however, occurred in residential buildings considerably smaller in size (Geller 2004). Regardless of spatial scale, mortuary processing and ritual interment facilitated decedents' rebirth as socially powerful ancestors. Proximity ensured that interactions between living and dead members of Maya society were ongoing—what McAnany (1995) has referred to as living with the ancestors. Architectural renovations to buildings, like the addition of benches that functioned as household altars, allowed residents to appease, petition, and venerate their ancestors (Deal 1987; Gillespie 2000). Pre-Columbian burials then materialized the core and culturally continuous paradigm of *Jaloj-K'exoj* that I discussed earlier.

Not just any body was slotted for interment in residential settings and achievement of ancestral status, however. Landa's sixteenth-century chronicling offers a clue for identifying those individuals who were selected. According to him, the death of medico-ritual specialists set in motion their ritualized mortuary processing. Beneath residential structures, mourners situated these decedents' remains with toolkits in hand (in Tozzer 1941: 130). Seeing that the midwife's patron deity was associated with birth and death, the house would have been an especially fitting final resting place for her.

Though it is difficult with any certainty to identify midwives in the bioarchaeological record, Individual 102, a burial I excavated at the Bajo Hill Site in the Three Rivers Region, may have provided reproductive services to her kin and larger community. In contrast to the population perspective applied to discuss cranial shaping, here I rely on an osteobiographic approach. As explained in prior publications (Geller 2012, 2014), my approach to osteobiography builds on the forensic

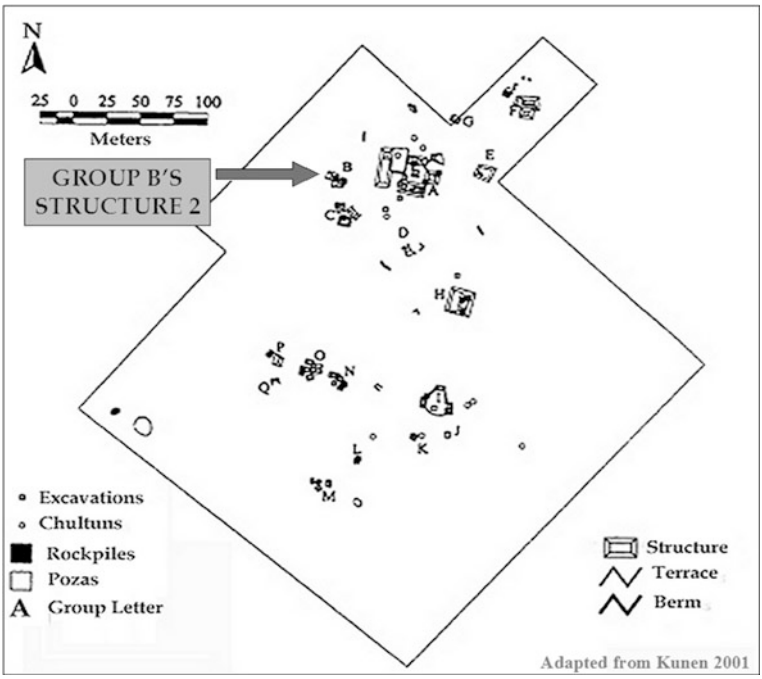

Fig. 6.5 Map of the Bajo Hill Site, Northwestern Belize (Adapted from Kunen 2001)

methodology of Frank Saul (1972; Frank Saul and Saul 1989) and theories about the archaeological body's connection to time outlined by John Robb (2002). As a consequence, I examine life histories in terms of broader cultural practices and beliefs—beyond personal experience or particular circumstances. I also attend to death histories, or those practices and beliefs that signal a community's ongoing engagement with decedents' bodies.

By the time I disturbed the grave of Individual 102, this ancestor's remains were exceedingly fragmentary and incomplete; most notably the pelvis had not preserved. Slight dental attrition indicates that Individual 102 died between 20 and 34 years of age (Saul and Saul in Kunen 2004: 147). The occipital and long bones were documented as quite robust. The attribute, however, is an unreliable marker of sex in this case. Rather, robusticity indicates the intense physical activity that characterized the lifestyle of all Maya commoners. Hence, the reason it is so important to contextualize often poorly preserved skeletal remains; without spatial, cultural, and historic information, they offer the most meager of insights.

Individual 102 was buried at and presumably lived in the vicinity of the Bajo Hill Site. This Maya community is located on the western edge of La Milpa, the largest ceremonial center in the Three Rivers Region (Fig. 6.5). According to its excavator, Julie Kunen (2001, 2004), inhabitants of this commoner farming community thrived in a seasonally inundated wetland environment from roughly A.D.

250–850. In its final form, the Bajo Hill Site had 17 distinct clusters of structures. Group B was one of these clusters. This group was comprised of two residential structures, which its occupants had renovated at least three times. The death of a presumed kin member, Individual 102, was the impetus for one of these architectural renovations. Sometime after A.D. 750, mourners interred this decedent beneath the northeastern section of Structure 2's platform. To do so, grave builders excavated a shallow pit approximately 60 cm wide and 10 cm deep. The pit extended down through Structure 2's plaster floor and into subfloor fill. Bedrock, located just beneath this construction fill, had been modified in order to accommodate the decedent's body.

Those who handled the corpse placed Individual 102 into a tightly flexed position. The body was oriented north–south with the head at the grave's south end, facing west. This flexed position suggests that funerary attendants bundled the corpse with perishable materials prior to its interment. The practice was a widespread one throughout the Maya world (Reese-Taylor et al. 2006). In the larger sample from the Three Rivers Region, tightly flexed burials accounted for 15.2 % of individuals' body positions.

A roughly hewn vertical headstone, which was 36 cm in height and about 30 cm at its widest points, was then placed above Individual 102's head, and the grave was filled with a cement-like substance. Finally, Individual 102's kin resurfaced the plaster floor to seal over the grave space. Atop this area, they constructed a plaster bench. Taken together, the grave and bench offer evidence of ancestral transformation and veneration. The former, I have argued, replicated a natural cave that acted to bridge the terrestrial realm and the supernatural underworld (Geller 2004, 2006), and with liminal corpse effectively changed to socially agentive ancestor, the bench acted as a shrine where the living could sustain dialogue with the biologically dead.

In contrast to pan-Maya mortuary features, Individual 102's assortment of grave goods was unique within the sample. Adjacent to the decedent's bent knees, mourners had placed a miniature ceramic jar. Three hematite disks—black shot through with red streaks—ran parallel to Individual 102's thighs, an arrangement that suggests they were wedged between the flexed thighs and upper torso during corpse preparation (Fig. 6.6). The disks were highly polished and carved on one side; the largest one was about the size of a quarter. Mourners had also placed an obsidian blade into the grave.

While not rich in terms of quality or quantity, these grave goods nonetheless are tantalizing for what they can communicate about Individual 102's life history. Read with a critical eye, Landa's description of a festival held in the month *Zip* is an informative place to begin:

> On the following day the physicians and the sorcerers assembled in one of their houses with their wives, and the priests drove away the evil spirit. Which being done, they opened the bundles of their medicine, in which they kept many trifles and, each having his own, little idols of the goddess of medicine, whom they called Ix Chel. And so they called this festival Ihcil Ix Chel, as well as some small stones, called *am*, of the kind which they used for casting lots. And with great devotion, they invoked with prayers the gods of medicine whom they said were Itzamna, Cit Bolon Tun and Ahau Chamahes, and the priests giving them the

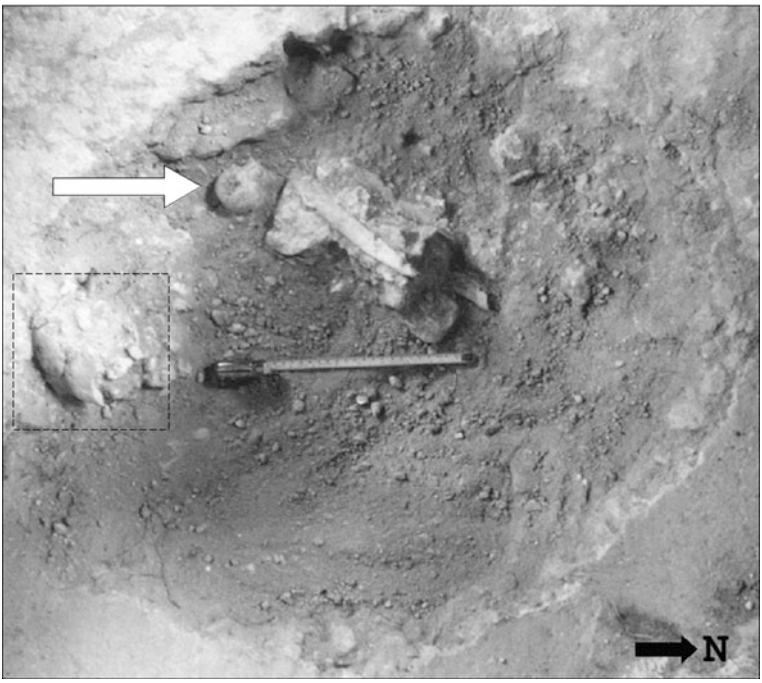

Fig. 6.6 Individual 102 and associated grave goods (Photograph taken by author)

> incense, they burned it in the brazier of the new fire and meanwhile the *Chacs* smeared the idols and the small stones with another blue bitumen like that of the priests' books. This being done each wrapped up each of the things which belonged to his office and taking the bundles on their backs, all danced a dance called *Chan Tuniah*. The dance ended, the men sat down by themselves and the women by themselves. (in Tozzer 1941: 154)

Individual 102's hematite disks and obsidian blade then may have counted amongst those bundled trifles used to divine and heal. In her analysis of artifacts' types and spatial locations, Linda Brown (2000) makes a convincing case that Structure 12 at Joya de Cerén, a Classic period site in El Salvador, contained diverse portable objects used for divination: obsidian blades, crystals, a greenstone disk, a miniature frog effigy pot, amongst other items. Obsidian blades, in particular, were often used in ritual contexts and were likely used by curers during auto-sacrifice or surgical procedures. Knowledge about miniature jars, however, is more limited seeing that the vast majority of known vessels have no contextual information.

Modern antiquities collectors have prized miniature jars, and many excellent, though unprovenienced, specimens can currently be found within private collections and museums.[6] Consequently, determining their date, use, and meaning has

[6]Antiquities galleries list the price of these vessels as high as $7,500 (e.g., www.barakatgallery.com and www.edgarlowen.com, accessed 9 March 2015). Maya miniature vessels or flasks from

been challenging. At other sites in the Maya lowlands, miniature jars have been recovered from burials and structures that date from the end of the Early to the Terminal Classic period (ca. A.D. 250–900) (Smith 1955: 93, 103). Colloquially, they are referred to as “poison bottles” or “perfume or scent bottles,” though empirical support is lacking for this functional designation. Some archaeologists have argued that miniature vessels were children’s toys (Satterthwaite et al. 2006 [1935]: 105). Based on the red paint that adhered to the interiors of cache examples, other scholars have suggested that they held scribes’ pigments (Reents-Budet 1994: 68, n. 2; Smith 1955: 103, 138).

As an alternative function, iconographic details depicted on miniature vessels’ surfaces perhaps point to their use as containers for curative or therapeutic substances. Some miniature vessels appear to have been painted with glyphs, while others are mold-made with images of animal and human bodies. A repeated theme seen on mold-made vessels are the deities God K (or Kawil), and God L (Reents-Budet 1994: 215). The latter is often depicted with tobacco leaf in hand, and it is possible that miniature vessels bearing his image contained snuff processed from this plant (Kerr and Kerr 2005).

From pre-Columbian times onward, tobacco snuff has figured prominently in the ritual and medicinal practices of the Maya (Orellana 1987: 81–82). The ancient Maya used tobacco to conjure visions and dialogue with the gods (Sharer 1994: 542). In contemporary communities, Roys (1931: 259) documented the widespread use of green tobacco to remedy ailments such as asthma, fevers, convulsions, insect bites, skin diseases, sore eyes, and bowel complaints (see also Orellana 1987: 31, 221–223; Osado 1979: 114, 205). In a modern Tzotzil community, Groark (1997: 61) documented a steam bath treatment for infants suffering from stinging caterpillar illness, a diarrheal condition that involved the application of a tobacco poultice. Given the patient and location, we may surmise that this therapy was an aspect of midwives’ postnatal care. In the future, the recovery of these vessels in situ might allow for archaeobotanical analysis by which to better discern vessels’ contents. While residue analysis was not conducted on Individual 102’s small jar, it may have held substances key for curing. It is plausible then that Individual 102’s unique funerary assemblage of disks, blade, and jar represent the personalized toolkit of a medico-religious specialist who acted as the community’s midwife.

(Footnote 6 continued)

Guatemala, Honduras, Mexico, El Salvador, and Belize are subject to US importation restrictions. The actions and reactions signal a connection between financescapes, ethnoscapes, and activities surrounding the black market trade in antiquities that deserves extended consideration.

6.5 Change and Continuity

Healing as performed within residential arenas requires deliberation about the degree to which Maya practices and beliefs are longstanding or the result of more recent cultural changes, whether they be externally imposed or internally developed. The spatial organization and vernacular architecture of Maya houses, for instance, exhibit striking continuity from the ancient past well into the present (Wauchope 1938). This occurrence might be as much a function of pragmatics and ecology as it is the longstanding maintenance of socioreligious beliefs tied to *Jaloj-K'exoj*. Christianization in the sixteenth century, however, significantly impacted corporeal practices, eradicating some like cranial shaping and morphing others like mortuary processing. During the colonial period, the Maya began to bury the dead beneath churches and their exterior courtyards. Excavators working at Tipu, Belize (A.D. 1544–1638), for instance, uncovered almost 600 interments associated with the site's colonial period mission church (Jacobi 2000). Anthropologists would document the persistence of house burial into the early twentieth century, but only as an aberration from the norm in certain locales. During their 1925 trek through Chiapas, Mexico, for instance, Frans Blom and Oliver LaFarge witnessed members of a Tzeltal Maya community interring decedents beneath their residential structures. The house, they noted (1927: 362), was "abandoned after the number of burials came to be 'too much for them'."

The enmeshment of indigenous peoples in European social systems and Christian doctrine should similarly give us pause about cultural change and continuity as reflected in Maya society's sex/gender system. As acknowledged in Chap. 5, major shifts in economic organization during colonialism folded and forced native peoples into a global economy. Such a dramatic restructuring produced changes in division of labor, legitimating certain identities and activities while devaluing others. With regard to kinship and reproduction, the Church's denouncement of polygamous marriage, noncontractual relationships, and gender integration, common practices throughout pre-Columbian Mesoamerica, established the parameters of socially and morally appropriate behaviors (Fancourt 1854: 165). These prohibitions acted to shift indigenous peoples' gender relations and sexual couplings. Nevertheless, as we will see, certain aspects of reproductive management persisted. To access this dialectic between change and continuity, ethnohistoric accounts from the sixteenth to the eighteenth century are revealing. We first need to attend to their inherent biases, however (Gillespie 1989; Greenblatt 1991; Todorov 1984).

The authors of ethnohistoric document, who for the most part were European men, sought to accrue material wealth, create mercantile opportunities, dismantle indigenous structures, convert the evangelically inclined, acquire political appointments and land grants, and assert loyalty to the Crown—amongst other things. In order to expedite these plans, chroniclers often misrepresented some topics or remained silent about others. Columbus's (1960) description of native people as naked, innocent, and peaceful was but one example with dramatic

repercussions, conceptual and material. The Spanish crown, in turn, used his claims to grant them the legal and experiential status of children. Iberian justification of ownership and validation of empire were couched in terms of caretaking (Pagden 1990). In the case of reproductive management, chroniclers' intended audience, agendas, and chosen genre are not the only confounding variables to take into consideration. We must also make transparent their hegemonic bodyscape and access to certain places and persons.

The Franciscan friar Bernardino de Sahagún's accounts of Nahua midwifery borders on the verbose. His intent, we may presume, went beyond intellectual curiosity. He arrived in central Mexico in 1529, just eight years after conquest, with missionary zeal and righteous intent. Initially, his investigation and documentation of Nahua language, history, and customs provided a means for instilling the Aztec with Christian religious beliefs and morals. We can understand his examination of midwifery, then, as instructive about indigenous conceptions of life's onset and sexual relations. In *General History of the Things of New Spain*, or more familiarly the Florentine Codex (FC), Sahagún's description of the midwife presents a category of personhood that was socioreligiously significant and intellectually complex.[7] According to the missionary, the midwife, or *ticitl*, was an old woman—"the one who brought about birth, the one delivered, the one in charge of birth." Her knowledge was sourced from the divine, and her patron deity was the powerful Yoalticitl, simultaneously the Mother of the Gods and the Midwife of Darkness (FC VI, 153). The midwife's technical skill lay in massage, surgery, and postpartum care, and her management of reproduction took place in the house and its adjoining sweat bath, or *xochicalli*.

But, Sahagún also notes that the midwife's activities were not limited to birthing new lives. They used their knowledge of herbal remedies, manual manipulation, and surgical techniques to deal with their cessation, as well. He was particularly impressed by midwives' ability to perform embryotomies:

> Here also let something rather marvelous be told. When the baby adhered there within the mother, if the baby had died, the midwife inserted an obsidian knife within the woman. There she dismembered the baby; she drew it forth piece by piece. Thus the parent was yet relieved. (FC VI, 157)

With this passage in mind, it is plausible to suggest that midwives might also have performed this technique at earlier junctures in a woman's pregnancy. The same can be said for the ingestion of natural concoctions used to expel the fetus. Sahagún (FC VI, 159) identifies two drinks consumed to hasten birth. One was concocted from two fingers of ground up opossum's tail in water. The second drink was an infusion of *ciupatili* root, or *Montanoa tomentosa* (Dibble and Anderson 1974), which modern medical practitioners have found produces uterine contractions and dilates the cervix (Landgren et al. 1979). While Nahua elders exerted significant pressure

[7]The Florentine Codex is comprised of 12 books that are now bound into three volumes. In citations, roman numerals represent book numbers followed by the page number. High-resolution scans of all volumes can be found at http://www.wdl.org/en/item/10096/view/1/1/.

to dissuade pregnant women from aborting fetuses, it was widely maintained that life did not begin until "the droplet of a baby is already 3 [or] 4 months [formed] (FC VI, 141 and 152). This belief echoes a theological one that Sahagún would have understood.

The Roman Catholic Church debated for centuries about the onset of human life: When did a fetus become human and require the church's protection? The writings of Plato and Aristotle provided theological reference points. According to them, the female fetus formed 80 days after conception and the male 40 days. This understanding provided the early Christian church a foundation for their "doctrine of ensoulment." Ensoulment addressed the moment at which the soul entered the fetal body, thereby making it human (Sanger 2004). European midwives in the Middle Ages linked ensoulment with "quickening," the fetus's first detectable movements (Schiebinger 2004: 246). As such, we may regard it as a historically situated type of material-discursive intra-action that brought a body into being, that instigated ontological awareness. Quickening usually occurred around the fourth or fifth month of pregnancy. Prior to this point, early Christian doctrine did not identify the fetus as human, and consequently abortion was not sinful (Sanger 2004: 22). The laws of Europe in the Middle Ages reflected this view and were carried with those men who journeyed to the New World (Sanger 2004). As a Franciscan friar in the Roman Catholic Church, Sahagún would have been well versed in this theological discussion.

Sahagún did not opine overtly on the midwife's dual nature—mediating dialectics between life and death, nurturance and extermination. He did, however, take a more implicit stance. His overview is included in Book VI's "Rhetoric and Moral Philosophy." But, given the church's position in the sixteenth century, it is plausible that he found midwives' abortive abilities and surgical skills less problematic than the power it conferred on them. Feminine power was a threat to the colonized New World's nascent patriarchal social system. Midwives' ability to heal and the herbal remedies they administered had the potential to disrupt colonizers' socioreligious agendas, political efforts, and economic interactions. As a consequence, inquisitorial forces in colonial Mexico often misconstrued these female practitioners as performing sexual witchcraft (Behar 1989: 219–220).

In comparison to discourses about the Aztec, chroniclers of the colonial Maya, reveal far less about reproductive management. There is little to suggest, however, that missionaries situated in Maya communities would have taken a different tack from those working with the Aztecs. As Nancy Farriss (1984: 137, 189) argues, Europeans' colonial records were primarily constrained to elements of Maya culture that conflicted with Roman Catholicism's positions on marriage and sexual morality. Accordingly, Spanish colonial writers would not have overlooked midwives and their practices, though their epistemological frame did produce silences on certain subjects and distortions of others.

For instance, authored some two centuries after Sahagún's text, the Yucatec Maya dictionary compiled by Dominican friar Pedro Beltrán de Santa Rosa includes phrases and terms of special salience: *zayomal* [uterus (Sp. matriz) or where the mother conceived (Sp. madre donde se concibe)]; *ilmah* [menstruation or menses]; and *alanzah* [midwife (Sp. partera or comadrona)] (in Pío Pérez 1898). Beltrán

also recorded the Yucatec term for offspring resultant from illicit couplings—*matanpixan*, or "adulterer por tener hijos" in Spanish. Translation of certain body parts or fluids, however, was more troublesome for Beltrán. For instance, the word *lul* or *lel* was "semen de mujer" or "semen mulieris" (woman's semen) in contrast to *koy* (also *lel* and *xex*), or "semen viri" (manly semen). For men, *ton* or *ach* was the "miembro viril," which I take to mean penis, while *pel* and *much* were Yucatec for "miembro de la mujer." Regarding this last phase, it is unclear if he is referring to the clitoris or vagina. Beltrán characterizes both miembros, however, as indecent "son vocablos indecentes," and he identified *u bacel* and *u xibil* as more modest descriptors for the manly member.

For the Dominican friar, conception of female attributes in male terms is in keeping with Europeans' dominant bodyscape at this time. Thomas Laqueur's conceptual analysis of sex, in which he tracks ideas circulating in Europe from the Classic to the Enlightenment period, is instructive (see also Chap. 2). "There was still in the sixteenth century, as there had been in classical antiquity, only one canonical body and that body was male" (Laqueur 1990: 63). Until the enlightenment, distinct terms for certain female (lady) parts did not exist. Or, if terms had been coined, they did not gain common currency until the nineteenth century. In canonical anatomy textbooks, for instance, Renaissance physicians represented vaginas as inverted penises. Hence, we can explain Beltrán's use of "miembros de la mujer." Yet, dissimilar from the European medical doctors who carved their "facts" from silent cadavers, Beltrán culled his information from living natives. Why did natives share? Perhaps, at this juncture in the eighteenth century, they did not see discussions about female bodies and their associated physiological processes as taboo. Or, given his view of the Maya as inferior (Christensen 2010), Beltrán may not have regarded a query about this subject matter as indecent.

Beltrán is not the only chronicler to misrepresent or prove evasive on the subjects of female-bodied physiology and reproductive management. Returning to Landa's overview of curers' annual festival, there are two, perhaps subtle details that stand out. First, he remarks on Ix Chel's prominent role in the celebration. While he identifies her in the passage as the goddess of medicine, elsewhere in his text, she is the "goddess of making children" (in Tozzer 1941: 129). As other scholars have recognized, by the colonial period, Goddess O and the moon goddess had merged, imparting Ix Chel with myriad roles and responsibilities (Ardren 2006: 29; Miller and Martin 2004: 95; Taube 1994). The deity's transformation in large part seemed driven from within, resultant from larger-scale cultural changes that ruptured Classic Maya traditions and yielded phenomena distinct to the Postclassic period.

Landa's statements about the curers' celebration also hint at cultural transformations catalyzed, or externally imposed, by European colonizers. To reiterate, he recounts how physicians and sorcerers assembled with their women (in Tozzer 1941: 154). Given his attention to details, it appears that he entered the residential spaces that provided the backdrop for these rituals. Yet, Landa does not elaborate on women's complementary and essential roles during curing rituals. Rather, he simply regards them as "the women" of male curers. In his text, physicians (medicos), priests (sacerdotes), and sorcerers (hechicero) are all accounted for, but

the category of midwife is absent altogether (Tozzer 1941: 112, ft. 512, 153). His oversimplified assessment may be a consequence of access, or lack thereof, to certain types of information, spaces, and events. His text, for instance, offers no overview about prenatal or postpartum care, topics that Sahagún discussed at great length. Nor does he make a concrete connection to reproductive management and sweat baths. Indeed, his knowledge of the latter is vague at best. He remarks,

> They took baths very often in cold water, like men, and they did not do it with excessive honesty, because it happened that they got undressed in the well where they went for water for this purpose. They were accustomed to, besides, bathing with hot water and fire and this was seldom, and more for health than for cleanliness. (in Tozzer 1941)[8]

Hence, Landa seems far less aware of or interested in the socio-sexual activities that occurred within domestic domains. But, perhaps this inattention is one reason that midwives have long sustained as a crucial category of personhood in contemporary Maya communities. Arguably, late-twentieth century medicalization has had far more corrosive an effect on practices and beliefs tied to reproduction than did Christianization and colonialism combined.

6.6 Making Midwives

DIVINER'S PRAYER FOR A PREGNANT WOMAN
Come here Earth. Come here Virgin Santa Ana
You are the one who guides midwives,
you give their strength.
And also, my child
Whose legs and arms are bound (who is pregnant)
you know when her day arrives.
Only ask for an hour or half hour of labor
until she gives light, she gives birth.[9]

There is much about Maya reproductive management that eluded ethnographers in the early-twentieth century. Like their colonial predecessors, access to certain spaces, persons, events, and information was at issue. Certainly, ethnographers recognized midwives as active within Maya communities. In Chan Kom, for instance, Yucatec informants explained to Robert Redfield and Alfonso Villa Rojas

[8]"Bañábanse muy a menudo con agua fría, como los hombres, y no lo hacían con sobrada honestidad porque acaecía desnudarse en cueros en el pozo donde iban por agua para ello. Acostumbraban, además, bañarse con agua caliente y fuego y de éste poco, y mas por causa de salud que por limpieza."

[9]This prayer comes from one recorded and translated by Tedlock's (1992: 244–245). In the original Quiche it reads as follows: Sa'j la Mundo. Sa'j la Virgen Santa Ana/ Lal c'amal quibe ri iyomab/ caya la ri quichuk'ab./ Y xukije, walcu'al/ ximixobic rakän uk'äb,/ lal etam la jampa xopanic ri uk'ij./ Xa ta' jun hora o media hora/ cuya ri luz, cuy ri sak. Wagley (1949: 22), however, remarked, "Midwives do not pray aloud, I was told, because their prayers are their secrets."

(1934: 72, n.2) that midwives were *x-hiikab*, "she who does massage," and *x-ilah-kohan*, "she who visits the sick woman." These two signifiers underscored her culturally continuous, specialized, and dual role in facilitating childbirth and remedying potential problems linked to reproduction. They also remarked upon laboring women's use of the squatting position and birthing rope, a practice that we now know has spanned millennia (Redfield and Rojas 1934: 181). But, ethnographers also acknowledged the gaps in their knowledge. A footnote in Redfield and Villa Rojas's text indicates why this was the case

> The presence of unessential persons during the delivery of a child is strongly discouraged in Chan Kom, and therefore neither of the authors has been present on such an occasion. The information presented was obtained from mothers and fathers—the midwife of the village at the time, was a very uncommunicative person. Miss Katheryn MacKay has generously allowed us to supplement these data with her much fuller information obtained in neighboring villages and towns. (Redfield and Rojas 1934: 181)

The afterthought suggests that Redfield and Villa Rojas may have been denied access because they were men. In contrast, MacKay, a female nurse on staff with the Carnegie Institution's Chichen Itzá Project found midwives quite communicative. As an accidental anthropologist and over the course of several years, she was able to document rich details about their practices (Shattuck 1933: 64). Indeed, MacKay, rather than Redfield and Villa Rojas, may have first recorded the Yucatec terms for midwife and women's preferred birthing position. One dimension of reproductive management that she did explicitly discuss was midwives' administration of abortifacients (in Redfield and Rojas 1934: 357). According to her informants, termination of pregnancy was rare and did not occur beyond the third month.

In addition to access, latent androcentrism may have inadvertently diminished the socioreligious importance of midwives, as it has long done with the menstrual huts mentioned at the chapter's beginning. Blom and LaFarge's (1927: 357–358) description of the honor paid to men of authority—chiefs, shamans, medicine men—in Tzeltal Maya communities is telling.

> When first coming into the presence of such men, or passing them on the road, an Indian will take off his hat, bowing deeply; the chief or shaman touches the Indian's forehead, and he goes on…Instances were observed of thus "giving the head" to certain elder women, but the reason could not be ascertained.

Later in their text, Blom and LaFarge discuss midwives (1927: 359–360). Yet, their head scratching in the above passage indicates that they did not recognize these women as deserving of community veneration. Subsequent ethnographers would remedy their oversight. Lois Paul and Benjamin Paul (1975) work with the Zutuhil-Maya community of San Pedro la Laguna, Guatemala spotlighted modern Maya midwives' revered position (see also Paul 1978). "Each time the midwife enters a dwelling," they (1975: 715) observed, "every member of the household kisses her hand, as do people who meet her on the streets." It is likely no coincidence that Paul and Paul's observations are published in the 1970s as the feminist movement gained momentum. The number of women anthropologists increased

and acceptable research concerns expanded. Since this time, anthropologists' knowledge of reproductive management and midwives has grown exponentially (e.g., Cosminsky 1976, 2001; Hurtado and Sáenz de Tejada 2001; Jordan 1993; Rogoff 2011; Tedlock 1992; Ward et al. 1992; Wilson 1995).

Midwives, scholars have found, are divinely elected through dreams or the discovery of objects that possess both symbolic and utilitarian value. A Zutuhil midwife, for example, recounted to Paul and Paul (1975) her discovery of a conch shell and penknife while out walking. During a prophetic dream, she was instructed by predecessors to collect these items. The shell symbolically represented her power while the knife would help her cut infants' umbilical cords. These objects vary in form and function, but most medico-ritual practitioners use them for divinatory purposes. They call to mind the unique assortment of grave goods interred with Individual 102 and the specialized toolkits of curers discussed by Landa.

For the most part, modern Maya midwives have been women. More specifically, midwives are women with an unlikely chance of becoming pregnant, either because they are postmenopausal (Fabrega and Silver 1973) or because they abstain from sex before and after each delivery (Paul and Paul 1975; Paul 1978). This is not to say, however, that midwives never become pregnant. Personal experiences foster an embodied empathy that creates a more intimate connection (Jordan 1993: 113). The shared experience of female-bodied physiological processes may explain the rarity of male midwives (Cosminsky 2001: 183). Those few men who functioned as midwives were their wives' assistants or other types of curers who then diversified their suite of activities.

Midwives' divine sanction and embodied experience are complemented by an extended education, or apprenticeship, in herbal lore, obstetric practices, and sacred knowledge (Paul and Paul 1975; Paul 1978). To verify a woman's pregnancy, midwives have recorded the phases of the moon. In the Quiche community of Momostenango, Guatemala:

> A midwife carefully notes the phase of the moon on which her client failed to menstruate, or see her "sign of the moon," but then counts by full moons and readjusts, at the end, for the phase first noted. After sowing, maize plants or babies vegetate or gestate for 9 months and (ideally) come to fruition on the same day number and name of the 260-day calendar as they were sown. (Tedlock 1992: 190)

From this account, we can see that the midwife reads both the woman's pregnant body and the moon's phases to establish a fetus's gestational cycle. Connections between agricultural fertility and human fertility are also implied; the fetus metaphorically represents planted maize kernels, which grow during the course of this cycle (see also Carlsen and Prechtel 1991: 28; Guiteras Holmes 1961: 108; Wilson 1995: 123–157). While Catholicism has framed indigenous peoples' conception of the divine since conquest, Tedlock's description is resonant with the Moon Goddess's and Goddess O's distinguishing characteristics. We see traces of the former as she encourages the fertility of living things, while the shepherding of the fetus through its gestational cycle to birth is evocative of the latter. To this end, modern midwives massage women throughout the duration of her pregnancy,

administer herbal remedies to hasten birth or alleviate pain, and oversee labor and delivery.

During labor, contemporary Maya women squat or kneel while "supported by a rope attached to a beam in the roof" (Cosminsky 2001: 191, 192; see also Reina 1966). In this non-supine position, gravity works with the laboring woman in contrast to the counterproductive (or more appropriately counter-reproductive) lithotomy position, introduced and enforced by twentieth-century biomedical practitioners. But beyond its practical advantages, the birthing rope has also retained socioreligious significance. Specifically, it acts as a symbolic conduit through which newborns' souls passed from the supernatural realm into their bodies (Paul and Paul 1975: 709). The Birth Vase's artful renderings point to the antiquity of these practices and beliefs.

Following delivery, the midwife cares for mother and child. Postpartum activities and rituals involve safeguarding their physical and spiritual well-being. The interment of bodily fragments in association with residential structures is essential. Whether or not this activity is pre-Columbian in origin or morphed from mortuary practices that involved the deposition of dead bodies beneath houses is unclear. In his ethnographic study of the Tzotzil, for instance, Charles Wagley (1949: 23) described the Tzotzil Maya practice of burying afterbirths beneath the floors of ancillary, residential spaces (see also Guiteras-Holmes 1961: 108; Paul 1978; Vogt 1969: 181). The Kaqchikel also have buried, or "planted," the umbilical cord to fix a newborn's unstable inner, personal soul (Fischer and Hendrickson 2003: 80).

Interment often occurred in a residence's sweat bath, postpartum ritual that underscores this place's sustained and significant role in reproductive management. The sweat bath functions as the place where midwives conduct prenatal visits, as well as administer to the reproductively challenged; sterility is attributed to a "cold womb" that can be remedied with sufficient heat (Cosminsky 1976: 110). Sweat baths also seem to be the place where termination of pregnancies takes place. According to Victoria Ward and colleagues (1992: 63), "the practice of taking a *temascal* [sweat] bath combined with strong massages and herbal drinks" seems to be especially effective. The Quiche, to whom they refer, resort to this method in certain circumstances, but they are not enthusiastic advocates of abortion.

Indeed, ethnographers have long found their informants reticent to discuss the role midwives have played in preventing or terminating pregnancies. In 1933, Redfield and Villa Rojas related that "abortion and contraception are abhorrent to Maya psychology" (in Shattuck 1933: 66). Psychological trauma aside, Nurse MacKay's concomitant account confirmed that Yucatec women did choose to terminate pregnancies. There are several reasons why they would have done so. In Chan Kom, premarital pregnancy and the resultant possibility of social stigma were cited as reasons (Redfield and Rojas 1934: 96), and more recent ethnographic accounts indicate that these reasons are still relevant (Ward et al. 1992). This motive may speak to cultural change, namely shifting indigenous beliefs about marriage, family, gender, and sexuality that catalyzed with the introduction of Catholicism. On the other hand, in the Huastec Maya community of Teenek Tsabaal, women's reasons for aborting a fetus are tied to beliefs about illness that may have

longstanding cultural salience (Alcorn 1984: 156–160). Alcorn relates how certain pregnant women are regarded with suspicion as their unborn children may cause the highly dangerous illness *haluk'laab*. A pregnant women will abort a fetus if the unborn infant is believed to be a *haluk'*, or a taker of one's spirit. Regardless of the reason, the use of abortifacients, which were administered by midwives, indicates that socio-sexual relationships are not always defined by heterosexual and conjugal unions. Kin or community members other than marital partners may have constrained women's reproductive decisions in profound ways.

Thus, abortion is but one part of the suite of activities comprising reproduction's management—activities that have for centuries been in the hands of pregnant women and their female midwives. The latter's knowledge of herbal remedies concocted from local and easily accessible plants makes them especially skilled at preventing conception or inducing miscarriage. To effectively deal with the insidious *haluk'*, for instance, Huastec midwives had women drink "a boiled preparation from the shoot apex of maguey and the roots of *k'oyol* (*Yucca cf. treculeana*)" (Alcorn 1984: 158–159). In a Tzeltal Maya community, the *yehk' eč múla* "is unanimously said to be used by women as a contraceptive, although its actual effectiveness is not known" (Berlin et al. 1974: 371). This comment about abortifacient's effectiveness may seem offhanded enough. And granted, certain remedies sound quite implausible; Alcorn (1984: 158) describes one that involves an eviscerated toad (which seems even less appetizing than opossum tail tea). Yet, the skepticism invites us to consider the dramatic effects that biomedical models have had on the traditional management of reproduction.

6.7 Biomedical Interventions

The medicalization of reproduction, which was initiated in the nineteenth century, has increasingly impacted reproductive management in dramatic and unforeseen ways. As a consequence of varied socioeconomic processes at work in the United States, male physicians co-opted the roles and decision-making abilities previously held by midwives and pregnant women (Schiebinger 2004; Sanger 2004; Wilkie 2003). Contrary to popular opinion, these rights were not taken away for moral reasons but for economic ones. The rise of formal medical training and influx of academy-trained doctors in American society created a class of male professionals who found themselves in competition with traditional midwives. Seeing that the business of human reproduction was regarded as lucrative (Sanger 2004), the latter did everything in their power to denigrate midwives by presenting them as ignorant, unsanitary, superstitious, and dangerous (Wilkie 2003: 197). Accordingly, the advent of biomedicine set certain limits on women's agency and access to specialized knowledge.

Elsewhere these changes lagged but they did inevitably emerge. Shattuck (1933: 87), for instance, reported that government officials in Yucatan did not establish "courses of training for female nurses and midwives" until the mid-1920s. As to what these courses

might have encompassed goes unstated, though the formation of institutional standardization and oversight is irrefutable. The ramifications of these interventions are illustrated by Ruben Reina's (1966) ethnographic observations of birth in the Pokomam Maya town of Chinautla, Guatemala. He (1966: 240–243) writes,

> At the onset of labor, the midwife is immediately notified…The husband suspends a rope from a pole of the roof; this will serve as a support to the wife during delivery…During birth, the husband is requested to assist by helping the midwife hold the wife in a kneeling position. The practice of giving birth in the kneeling position is general among rural Indians of Guatemala, supported by the belief that a supine position prevents birth from taking place. A local Ladino midwife, a practical nurse, has become very popular among young expectant Indian mothers through the use of injections to alleviate pain…She states, however, that she has not been able to change the position of delivery and considers it very unbecoming for her, as a practical nurse, to follow the Indian pattern. In only a few cases where there were no old women around to prevent the use of the supine position, has she been able to accomplish the type of delivery she was taught; usually, by the time she is called, the pregnant mother has been thoroughly indoctrinated by her mother-in-law and resists the nurse's instructions, feeling that the Indian way is the right way.

I include a sizeable portion of Reina's insights for it reveals much about the prehistory of present conditions. Maya peoples continued to implement certain aspects of reproductive management that were quite ancient in origin. He demonstrates just how individuals acquire knowledge about the culturalization of natural processes. In this passage, we can see the socialization of pregnant women—instructed by their elders—so that they know how to properly give birth. The Birth Vase's imagery presented at the beginning of this chapter comes to mind. Yet, the socialization of biomedical practitioners is also made transparent; nurses and doctors acquire knowledge in institutional settings that they pass from generation to generation of practitioners, and we see the introduction of "innovation"—how some changes are actively embraced while others are resisted. There is a tension at work between local tradition and invasive biomedical practices that signals agentive choices and not absolutes. What Reina ultimately offers us is a window into the complex processes that create socio-sexual norms before they disappear and become naturalized. He is writing during a juncture, in the midpoint of the twentieth century, when they are still discernible as constructs.

In the twentieth-first century, midwives' roles and responsibilities continued to be valued in contemporary Maya communities. Yet, and more so than other types of traditional curers, their training and practices have become increasingly medicalized and monitored (Cosminsky 2001; Hinojosa 2002: 31; Hurtado and Sáenz de Tejada 2001). Sheila Cosminsky (2001) identifies some of the more detrimental changes: the imposition of horizontal or supine birth positions; administering injections to hasten labor; internal vaginal exams; and midwives' increased dependency on biomedical institutions. I do not wish to suggest that biomedical interventions are invariably detrimental. As Barbara Rogoff (2011) notes in her recent analysis of midwifery, traditional practices are not static and Maya women can strategically incorporate biomedical methods. But, the dominant biomedical bodyscape, the foundation for these practices and beliefs, does perpetuate commonsensical notions about reproductive management, and when applied uncritically and ahistorically to

certain cultural cases, like the Maya discussed in this chapter, the biomedical model can prove quite deficient.

Female-bodied physiological functions are imagined to be burdensome and deterministic. Whether in the context of menstrual huts or sweat baths, biology translates into social destiny. Additionally, cultural traditions used to mediate labor and delivery are regarded as inherently risky. Monitoring or dismantling midwives' practices is put forth as more viable an option. Subsequently, modern biomedical interventions are then heralded as saving females from their own bodies, though the aim (and ideal) is to enhance natural capacities not actively circumvent them. Resultant standardization leaves little room for laboring women's bodily differences or agentive choice. Biomedical practitioners also pay lip service to, not tackle head-on, the larger socioeconomic issues that produce reproductive complications, like widespread impoverishment and racism (e.g., Berry 2006; Chary et al. 2013; Foster et al. 2004; Goldman and Glei 2003). All of this does not portend well for Maya midwives whose numbers have dwindled steadily (Rogoff 2011). Their obsolescence is not inevitable. Reproductive management can include adaptive responses to current conditions with awareness of cultural traditions and future possibilities. But, the socioreligious repercussions of diluting a longstanding and exceedingly important category of personhood remain to be seen. It is arguable that certain aspects of childbirth's sanctity—culturally specific and quite ancient—will go the way of cranial shaping and residential interment of ancestors.

6.8 Conclusion

In this chapter, I have aimed to track a prehistory of places and persons associated with reproductive management in Maya society. The importance of studying material and human remains from ancient contexts is crucial in these efforts. Yet, I do not presume that ethnohistoric and ethnographic sources can easily inform the inferences drawn from archaeological and bioarchaeological evidence. Nor, did I take an idealist position on reproductive management and presume that women are any more (or less) empowered in the past than they are now. Rather, the trajectory of a well contextualized, empirical example identifies the processes—religious, economic, social processes—that shift or maintain material-discursive practices within specific cultural and historical contexts. Accordingly, it can offer a challenge to varied publics who work, either inadvertently or intentionally, to perpetuate prehistorical amnesia. (Legislators have certainly done this in their enforcement of conservative positions on reproductive rights. It is also worth stressing that the vast majority of individuals currently making these decisions about women's reproductive strategies are themselves incapable of becoming menstrual, pregnant, or postmenopausal.)

Recent juridical decisions aside, many discussions about reproductive management have long been silenced or narrated through the voice of male-dominated Western biomedicine. This epistemological privilege has real, though not

necessarily desirable, effects. Female reproducer has been become a taken-for-granted trope. The complexities of certain, crucial social persona like midwives go unexplored or misrepresented, and their folk knowledge and practices denigrated. An increasing adherence to biological determinism also comes to oversimplify understandings of physiological phenomena that are deeply impacted by a culture's socioreligious beliefs. Ultimately, and as this chapter's Maya case study has underscored, while she may give birth, that biological fact is no more interesting than how she does and the cultural-historical significance of doing so.

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Chapter 7
Brave Old World

7.1 Freemartins and the Future

> [He] explained the system of labelling—a T for the males, a circle for the females and for those who were destined to become freemartins a question mark, black on a white ground.
> —Aldous Huxley, *Brave New World* (2004 [1932]).

John Hunter, the Scottish surgeon we first met in Chap. 3, was thoughtful enough to preserve those gonads he extracted from freemartins, classifying them as "Morbid Anatomy of Monsters" (Fig. 7.1). After his death, the specimens would be housed at the Royal College of Surgeons' museum, which bears his name today. Into the twentieth century, researchers marveled at their excellent condition. "These specimens, although now about 140 years old, are in perfect preservation," commented the physician Berry Hart in 1910, "and it is still more remarkable that the microscopical sections, cut in celloidin and stained with logwood and eosin, show even the finer details in a recognisable manner" (p. 198). Contra to Hunter, however, he did not see the freemartin's "anomalous sex-condition" as hermaphroditism. It simply was evidence of male sterility in a cow born co-twin with a potent bull.

Soon thereafter, zoologist Lillie (1917) expressed his disagreement with Hart's assessment. The freemartin, he conjectured, was a *female*. Her sterility was the result of hormonal secretions following the fusion of her and her twin brother's placenta and hence circulatory system. Three separate research teams, one of whom included Ernst Laqueur, the granduncle of Thomas Laqueur, would go on to isolate estrogen in 1929 and testosterone in 1935 (Watkins 2008: 479–480). While there is much we may take from this disagreement—a dawning of the impact that hormones have on physiology, for instance—I invoke it here to highlight the concretization of a biomedical bodyscape. At this juncture in science's history, neither Hart nor Lillie questioned that the freemartin's differences were dimorphic in type. It simply was common sense.

In pointed contrast to these scientists' study of the real, the freemartins of Aldous Huxley's brave new world are bovines in metaphor only. More specifically, they are human automata who populate a dystopia of tomorrow. But, their genetically

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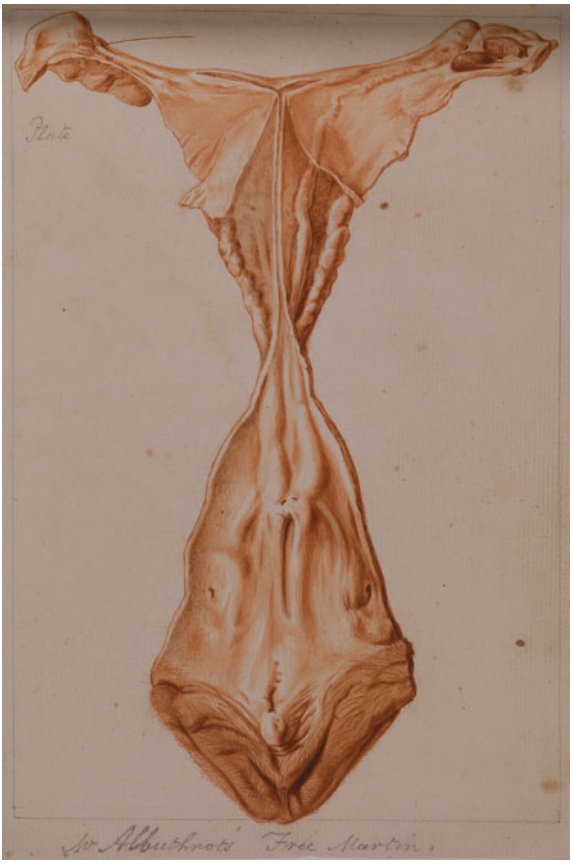

Fig. 7.1 Mr Arbuthnot's freemartin. Drawing of the reproductive organs of a bull exhibiting the androgynous features of freemartinism, by William Bell, unsigned and undated, before 1786. © The Hunterian Museum at the Royal College of Surgeons

engineered sterility does not lend itself to gender variance or sexual emancipation. As a third sex, they are the unnatural and illegitimate offspring of social indoctrination and Fordism, an outcome that Antonio Gramsci may have found surprising. Despite their chimerical identity and slight propensity for facial hair, freemartins are not crossers of placental borders nor cyborgian imploders of dichotomies as some post-modern feminists have imagined (e.g., Anzaldúa 1987; Haraway 1991). The social satirist is, in fact, discomfited by the possibility of female mammals with masculine behaviors and nonfunctioning ovaries. His coding of reproductive management as amoral promiscuity presented a not-so-subtle jab at early-twentieth century feminism, and it echoed scientific conclusions of the day. Medical men, for instance, suggested that lesbians were hermaphroditic in body, hairy in face, and masculine in gender (Chauncey 1982). Suffragettes, whose political activism ran quite counter to the Cult of Domesticity, were believed to possess these attributes.

Hence, seeing that he is wary of technological innovations—in labor, drug manufacturing, architecture, transportation, and reproduction—it is not surprising that his conception of gender and sexuality in a brave new world is hoary and heteronormative.

Despite his ambivalence, Huxley's vision of the future anticipated the role that technoscience has come to play in the process of becoming. Here I first outline this concept and then examine the performativity of technoscientific practices. Two examples are discussed in-depth, radiocarbon dating and genetic testing. The former shifted the discipline's methodological paradigm in important and indispensable ways, while the latter is in the process of doing so for archaeologists and bioarchaeologists. Yet, technological advances do not conceptual innovations inevitably make.

In the specific case of genetic testing, a transformation in how contemporary Western society experiences and knows the body has occurred. While ontological and epistemological outcomes need not be negative, they are not without ethical implications. Biomedical practitioners' applications of genetic testing have often resulted in the geneticization of socio-sexual lives. This constitutive process reduces an individual to biomolecular parts—sex chromosomes or single nucleotide polymorphisms or mitochondrial DNA. That geneticization has something to tell us about socio-sexual lives in the future is obvious. The pitfalls of such genetic determinism have been discussed by science fiction aficionados and bioethicists alike (e.g., Fitzgerald 1998; Goodman 2013; ten Have 2001; Hubbard and Wald 1993; Lippman 1991, 1994, 1998, 2000; Rapp 1999). That geneticization might enlighten us about our past, may not seem as apparent.

Working through several case studies, I demonstrate how geneticization results from ancient DNA (aDNA) analyses of prepubescent bodies. As we will see, such investigations often reduce sex to genetics. Researchers may also unwittingly underestimate processes that shape socio-sexual identities—socialization, play, parenting, and childcare practices—in a given cultural–historical context. Geneticization then runs the risk of reifying the commonsensical notion that gender is essence and not emergent social identity. It also underscores the need for further deliberation about bioarchaeological ethics. Hence, in this book's final chapter we come full circle; in making sex, we culturalize the natural, and in reifying rigid dualism (despite empirical evidence to the contrary), we naturalize the cultural.

7.2 Performativity of Practice

7.2.1 Agential Realism

"Gender," Judith Butler (1999 [1990]: 178) has written, "conceals its genesis." The statement succinctly captures her understanding of performativity. As was discussed in Chap. 3, the term should not be confused for "performance." Nor should

bioarchaeologists dismiss it as empty jargon. To recap, performance is the expression (i.e., acts, gestures, and verbal pronouncements), but performativity is the process that produces one's socio-sexual identity. In the case of gender (and race), this process creates the illusion of core through reiteration of performances. Doctors' role in this process is inceptive for they have long announced an infant's sex in the immediate moments after birth. Following a check of genitalia, "It's a boy!" or "It's a girl!" is stated with authority. Per Butler, such speech acts are performative for their ability to "bring into being that which they name" (as quoted in Osborne and Segal in 1994). Infants with ambiguous genitalia then undermine biomedical authority and for this reason they catalyze histrionic reactions.

In her treatment of performativity, Karen Barad (2003, 2007) has sought to understand how matter matters in addition to discourse. She has labeled her approach agential realism (see also Chap. 3). In synthesizing Barad's complex ideas here, I retain much of her original language though I try to clarify her meaning. In this regard, I am guided by the belief that new ways of doing and being may require a new way of articulating that which has been made invisible or inconceivable.

"What is it about the materiality of bodies that makes it susceptible to the enactment of biological and historical forces simultaneously?" Barad (2007: 33) queries. A theoretical physicist by training, she scales down to the atom and emphasizes the significance of the material. Her approach then is a posthumanist one. The designation signals her efforts to destabilize Cartesian dualities by refusing "to take the distinction between 'human' and 'nonhumans' for granted" (2007: 32). Niels Bohr's philosophizing about early-twentieth century breakthroughs in atomic physics has been very influential in this formulation, as have Donna Haraway's discussions of simians and cyborgs. Inclusive of the nonhuman are animals, inanimate bodies (e.g., artifacts [Marshall and Alberti 2014]), machines, apparatuses of observation, and technoscientific practices that transform its relationship with (transform it into) the human. For instance, the obstetric ultrasound, which Butler (1993: 7) only treats cursorily.

Matter for Barad is less focused on fetal matter per se, which is of greater concern to Anne Fausto-Sterling, and more on the apparatuses that play a central role in the process of becoming. "Matter is substantive in its intra-active becoming—not a thing, but a doing, a congealing of agency," she relates (2007: 219). Agency then is not possessed but constituted through intra-actions; for e.g., the piezoelectric transducer. As Barad explains, this apparatus turns sound energy into a fetal image that simultaneously brings a human into being and anoints him or her with a socio-sexual identity. The concept is worth elaborating on, for it is equally applicable to the technoscientific tools that archaeologists utilize. According to Barad (2007: 232):

> Apparatuses are not mere instruments serving as a system of lenses that magnify and focus our attention on the object world, rather they are laborers that help constitute and are an integral part of the phenomenon being investigated. Furthermore, apparatuses do not simply detect differences that are already in place; rather they contribute to the production and reconfiguring of difference.

In the case of ultrasonography, for instance, human bodies, ultrasound waves, piezoelectric transducers, and computer screens all intra-act to produce phenomenon, i.e., a "fetus" made meaningful in a historical moment and sociopolitical context. In contrast to "interaction," which assumes that entities (or relata) exist prior, *intra-action* for Barad (2007: 140) refers to phenomenon that are produced "through multiple material-discursive practices or apparatuses of bodily production." She sees this process as iterative, and for this reason it is also performative.

When specialized technicians or physicians describe sonographic images of genitalia to expecting parents, we can see performative speech acts at work. Feminist scholars have well documented this discursive dimension of obstetric ultrasound. Their observations indicate that the standardization of this technoscientific practice is not without ontological, epistemological, and ethical implications. Biomedical practitioners can now announce a fetus's sex as early as 11 weeks, thereby granting life, socio-sexual identity, and citizenship well before actual birth (Casper and Morgan 2004; Rapp 1997; Taylor 2004). That they , however, does not necessarily mean that they are forthcoming with information. For instance, as Mitchell and Georges (1997: 381) documented ethnographically, Canadian sonographers often claimed they were unable to determine sex. They were wary of the possibility of disappointment leading to abortion. In other instance, patients may exercise autonomy (or so they think), but the outcome does not indicate gender equality. Indeed, when son preference represents a core aspect of a culture's sex/gender system the extent to which women exert choice over their reproductive strategies is debatable [e.g., South Asia (Purewal 2010); Vietnam (Gammeltoft 2007)].

In light of this understanding—thinking about ultrasonography as material-discursive practice—I may never see my daughter's sonogram in quite the same way. More than family photograph on my kitchen wall, it speaks to a dynamic and layered process that simultaneously constitutes what it observes and limits the meanings that can be construed. It redefines the boundaries between human and nonhuman, culture and nature, subject and object, cause and effect.

7.2.2 Performativity of Bioarchaeology

For Barad, agential realism takes as its primary concern Western society's present-day processes with an eye to the future. I draw attention to this cultural and temporal location for two reasons—one that may help new materialists address the gaps in their approaches and the other that may help bioarchaeologists reflect more deeply on their material-discursive practices.

First, I do not presume that Barad means to universalize; the idea of intra-action recognizes that the boundaries between human and nonhuman, nature and culture, subject and object are remade continuously. Rather, her treatment of science (i.e., physics) and biomedicine (i.e., obstetrics) as practiced in the U.S. can provide a foundation for comparison and contrast. We may then understand how another culture's beliefs—about bodies, science, medicine, sex, the fetus, etc.—come to

matter. This is to say that not every culture makes use of obstetric ultrasounds in their boundary making projects. In their Greek case study, for instance, Mitchell and Georges (1997: 385) note that "local knowledges of the pregnant body have not been entirely displaced by technological and biomedical discourses." From their ethnographic observations they identify points of overlap with and divergence from their Canadian case study. Based on Chap. 6's historical tracking of reproductive management, it appears that contemporary Maya peoples experience a similar tension that pits the traditional against modern biomedicine. Cross-cultural comparisons then can extend or fine-tune agential realism's relevance.

On the other hand, bioarchaeology has much to gain from examining the performativity of the subfield's practices. How do we know the body in bioarchaeology? What apparatuses do practitioners utilize in their efforts? Historically, as we learned in Chap. 2, investigators' scientific practices involved visual observations gleaned from clinical cases, cadavers, and artistic renderings. In time, standardized methods involved excavation, fragmentation, technical measurement, statistical assessment, and textbooks' reiteration (Alberti 2013). From the intra-action of these material-discursive practices bodily phenomena were produced.

That race and sex (or gender) are made to appear relational in analyses indicates a nineteenth-century shift in ontology, epistemology, and ethics. In Haraway's (1994: 67) words:

> …'gender,' 'race,' or any structured inequality in each interlocking specific instance gets built into the world—i.e., not 'gender' or 'race' as attributes or as properties, but 'racialized gender' as a practice that builds worlds and objects in some ways rather than others, that gets built into objects and practices and exists in no other way. Bodies in the making, not bodies made.

This framework, which expanded in short time to include sexuality, would persist well into the twentieth century. It is as much an effect of colonialism and capitalism as it is the solidification of evolutionary theory and biomedicine. These material-discursive practices were not just reiterative in the sense of performativity. They were also tautological inasmuch as analysis reinforced what researchers already knew about their "specimens." Archaeologists' excavation of human remains required analysts to recalibrate for the unknown. Information collected from mortuary contexts came to matter, as well. And changing world views at the midpoint of the twentieth century, which revealed just how racism makes race, acted to extricate the latter concept from sex. The specter of race would continue to haunt the study of human remains, materializing in unexpected ways as we will see later in this chapter. But, for bioarchaeologists, sex became a, if not *the*, crucial signifier of an individual's identity.

Currently, and comparable to obstetricians' authoritative pronouncements about the sex of a fetus, skeletal analysts declare remains male or female. Indeterminacy signals not a methodological shortcoming but a researcher's inability or the remains' inadequacy. Dissemination of information in classrooms or public forums then validates the dichotomous observational criteria used to assess remains in the first place. Codification of methodological binarism—the only form of variation

deemed appropriate—occurs through repetition as teachers train students who go on to train students, etc. Yet, the scientific objectivity and replicability of these practices, Sofaer (2013) notes, is called into question by individual researchers' embodied experiences of the human remains they analyze. That is, intimate knowledge of archaeological bodies has been based on the sensual—visual inspection, physical touching, hasty tasting.[1] Such an acknowledgement highlights how analysts' practices entangle the discursive and the material.

Hence, one might wonder what the subfield's increasing mechanization and atomization holds with regard to observable variation, pedagogical instruction, and embodied experience. This is not to say that in the future, robots and drones will form the cadre of fieldworkers and lab analysts. Archaeologists' fears of unemployment are certainly justified, but they will not lose out because of the rise of the machines. Rather, it is to suggest that technoscientific practices stimulate new phenomenological (lived-in) experiences that redefine the boundaries, implode in Haraway's words, between the human and nonhuman, the biological and cultural.

7.3 Technoscience

7.3.1 The Concept

"Histories of science may be powerfully told as histories of the technologies," Haraway (1988: 587) noted. Chapter 2 was replete with examples of how colonialism, racism, sexism, capitalism, and militarism informed scientific study of humans' bodily differences with effects that were neither neutral nor unpremeditated. Which is to say that we need approach today's technoscientific practices with similar critical reflection and ambivalence. Technoscience was initially invoked by scholars such as Bruno Latour and Haraway to capture a shift in the doing and receiving of science—the forces that converged and the outcomes that resulted.

In the nineteenth century, Foucault's panopticon identified an important technological starting point for understanding the role that Western science played in gauging, shaping, and disciplining bodies. We may say the same of craniometers, pelvimeters, and osteometric boards. But, investigative practices and power dynamics have morphed considerably since the nineteenth century. "Technoscience" Haraway (1988: 587) reckoned, signals these "new technologies

[1]One way to distinguish bone from stone is to lick it. If the material sticks to your tongue it is bone. Various instructors through the years have let me in on this dirty little secret—literally for the remains are usually unearthed in situ and metaphorically for the cannibalistic implications this may communicate. I have rarely seen this information included in human osteology textbooks. Interestingly, it does appear in writings about faunal and fossil remains. Perhaps then we may think of licking as a material-discursive practice that allows us to further interrogate the boundaries of the human and nonhuman.

of positioning." Dissimilar from Foucault, she allows for the possibility that technoscientific practices can be repressive *and* emancipatory.

Though Latour first outlined the concept almost three decades ago, the attributes he ascribes to technoscience are more not less pertinent today. "Laboratories," he (1987: 93) claimed, "are now powerful enough to define reality." These expensive and fragile spaces require "disproportionate amounts of resources" (1987: 179). Within their walls a hierarchy of actors performs, who range from supervisory "boss" to active "bench workers" to bureaucrats. Technoscience may promote an illusion of isolation from the external world, but it ultimately is an economic enterprise and military affair that thrives on the creation and expansion of institutional networks. Latour (1987: 156) observes,

> The harder, the purer science is inside, the further outside other scientists have to go. It is because of this feedback that, if you get inside a laboratory, you see no public relations, no politics, no ethical problems, no class struggle, no lawyers; you see science isolated from society. But this isolation exists only in so far as other scientists are constantly busy recruiting investors, interesting and convincing people.

His statements are as much an assessment about the actors involved and spaces in which scientific studies occur as they are the social significance and politicization of scientific work. The development of radiocarbon dating serves as a case in point.

7.3.2 *The Case Study: Willard Libby and Radiocarbon Dating*

Far from the ancient Egyptian field setting from where his wood samples came, physical chemist Willard Libby and team took to a University of Chicago laboratory to develop radiocarbon dating. To this end, and I simplify, wood samples were converted by chemical process to a solid carbon and placed inside an apparatus—a Geiger counter sensitive to a sample's heavier carbon isotopes but shielded from background radiation by an iron wall (Libby 1964 [1960]; Libby et al. 1949). Libby and his team's success in the late-1940s reverberated throughout the sciences, but it was experienced most profoundly in archaeology. No longer simply relative, human time became absolute and universal. The establishment of a global chronology allowed for the linkage and comparison of disparate geographical regions.

Radiocarbon research was also inceptive for stable isotopic studies, a key specialization in bioarchaeology. Indeed, one of the first chemists to study the stable carbon isotope in natural materials, Craig (1953), was a doctoral student at the University of Chicago's Institute of Nuclear Studies during Libby's tenure there. To be clear, Craig studied under Harold Urey, one of Libby's colleagues. But, by all accounts, the University of Chicago's Institute of Nuclear Studies was defined by collegiality and an intellectual synergism in the post-war years. Laboratories may have been demarcated physically but they were not separate spheres, socially speaking. Craig's thesis on stable carbon isotope study built on radiocarbon

research conducted in Libby's lab inasmuch as it "allowed for corrections due to mass fractionation and permitted the proper determination of radiocarbon ages" (Turekian 2006: 4). For this reason, I see Craig's work as inceptive for bioarchaeologists' subsequent stable isotope studies.

These disciplinary contributions aside, and calling to mind Barad's notion of intra-action, we may think about radiocarbon dating as material-discursive practice—entangled with militaristic efforts and political policies enacted during WWII and in the throes of the Cold War. Libby arrived at the University of Chicago fresh from the Manhattan Project. In the intervening years he would serve as a member (starting in 1950) and then Commissioner on the U.S. Atomic Energy Commission's (AEC) General Advisory Committee.[2] Experience gained in the former position informed his work on radiocarbon dating, for which he acquired enough symbolic capital to be granted the latter appointment and the 1960 Nobel Prize in Chemistry. His involvement with the AEC is especially intriguing for what it has to tell us about ontological, epistemological, and ethical changes in "our new technological age" (Libby 1956: 962), and Libby had the prescience (or perhaps the ego) to recognize his scientific work as an innovative force.

At its outset, Libby's research on radioactive decay in isotopes was problem-based, hands-on, and path breaking. He shared findings and techniques with enthusiastic colleagues, and he was supportive of their subsequent clarifications and recalibrations. He was also instrumental in the proliferation of research labs designed to radiocarbon date archaeological remains (Macdougall 2008: 70–71). "I never wanted to be the pope of C-14 dates," he commented to Hans Seuss, a colleague he trained in the dating method (Waenke and Arnold 2005: 9–10). It would be a mistake to read these actions as democratic or unfettered collegiality, however.

Making information about radiocarbon dating techniques more accessible meant that his laboratory could turn to other areas of interests. In short time, the AEC came to drive the lab's research agenda. Specifically, work on radioactive fallout from atomic warfare provided the origins for a new ontology. Libby was very much aware of this fact. "It is clear that the peoples of the world are extremely interested in radioactive fallout," he stated, "because of the bearing that the *new phenomenology of the nuclear age* has on everyone's life" (Libby 1956: 961, emphasis added). Radiocarbon dating would take a back seat to analysis of radioactive strontium (Sr^{90}), identified as one of the major isotopes in radioactive fallout. "Because of its chemical similarity to the bone-building element, calcium," Libby

[2]In both of these worlds, women were few in number. Libby's second wife Leona Woods Marshall Libby, who he married in 1966, was one of a handful of female nuclear physicists on the Manhattan Project. She, too, was based at the University of Chicago's Institute of Nuclear Studies, though she was married to someone else at the time. She was not a member of Libby's team or the AEC's advisory committee, but she later was associated with the RAND Corporation, the nonprofit think tank that oversaw Project Sunshine (Harvey and Ogilvie 2000). Information about Leona is included in a footnote not with the intent of further trivializing her contributions to science but as a statement on longstanding gender inequities in the sciences.

(1956: 945) explained in a public statement, radioactive strontium "finds itself deposited in bone structure." The observation signals the dawning of a technoscientific gaze directed inward and atomized in scale. It made no difference whether the bodies belonged to those of the ancients or their present-day descendants.

"First, the ability to work in a laboratory with dedicated colleagues," Latour (1987: 157) has recognized, "depended on how successful other scientists were at collecting resources." By any measure Libby—the "boss" in Latour's verbiage—was quite successful. His involvement with the AEC ensured a reliable source of funding for the researchers he recruited to his Chicago laboratory (Libby 1980). Work on radiocarbon dating, in contrast, had come chiefly from the University of Chicago. But, receipt of funding came at a cost more difficult to measure. Latour continued with his observation, "Second, this success in turn depended on how many people were already convinced by scientists that the detour through the lab was necessary for furthering *their own goals*" (1987: 157). Libby was AEC's public spokesman on radioactive fallout. In this capacity, he advocated for the development of nuclear weapons to combat the growing threat of communism, and he proclaimed that fallout from atomic warfare posed few and justifiable risks to humans (Hewlett and Holl 1989; Lindseth 2013: 160; Welsome 1999).

The classified dimensions of his work were more disquieting. Specifically, research conducted under the aegis of the AEC required scientists to collect human bodies for testing radiation's global effects, known euphemistically as Project Sunshine. At a 1955 advisory meeting, Libby remarked,

> If anybody knows how to do a good job of body snatching, they will really be serving their country…I don't know how to snatch bodies. In the original study on the Sunshine at Rand in the summer of 1953, we hired an expensive law firm to look up the law of body snatching. This compendium is not very encouraging. It shows you how very difficult it is going to be to do it legally…It is a delicate problem in public relations obviously. (quoted in Welsome 1999)

Another committee member put forth the impoverished as possible candidates for skeletal sampling. Given the great secrecy surrounding Project Sunshine, it stands to reason that archaeologists remained ignorant of the fact that Libby oversaw the processing of human tissue samples for Sr^{90} in addition to the archaeological ones for which he is far better known. It is also likely that Libby's discussions with archaeologists did not extend to body snatching, a practice with which they were historically acquainted and an accusation that descendant communities have since leveled at them.

I cite Libby's involvement with the AEC for several reasons. To highlight the significance of matter as real and not just social construction, an isotopic visualization of the body that departs dramatically from more macroscopic and sensual ways of knowing it, scientists' flexible ethics in the name of nationalism. I also believe this case underscores the usefulness of approaching the body in terms of material-discursive practices and not simply as material culture (cf. Sofaer 2006). Technoscience redraws the boundaries of the human and nonhuman. This is emancipatory in that it mobilizes new ways of knowing and being, as Haraway

points out. But, it may also serve to repress; the human body becomes the nonhuman, the expendable, and the ungrievable. If we extrapolate on the irony of Libby's statements about body snatching, we can see how the body as material culture may not be broadly applicable.

In North America, for instance, Native Americans' repatriation efforts have greatly impacted bioarchaeological practice. Investigators have had to reflect critically on the violence that engendered necropolitical conditions for native people and investigative opportunities for nineteenth-century scientists (see Chap. 2). As a consequence, bioarchaeologists are accountable to contemporary descendant communities who see human remains as socially viable ancestors. This epistemological frame, which involves the implosion of a living/dead binary, calls into question the ontological status of bones and the ethicality of research whether enacted sensually or technoscientifically.

With this in mind, we may return to Barad's understanding of intra-action, which she sees as a way for envisioning agency as process and not something possessed. What if researchers—physical chemists or bioarchaeologists—were to think of human remains as socially agentive subjects first, as opposed to objects of scientific value? How would this reconfiguration change technoscientific practices? Ethically speaking, we might become more culturally sensitive with regard to the human and nonhuman remains of past peoples, as well as recognize descendant or marginalized communities' involvement as a necessity and not an obstacle. "Ethics is about mattering," relates Barad, "about taking account of the entangled materializations of which we are part, including new configurations, new subjectivities, new possibilities" (interviewed in Dophijn and van der Tuin 2012: 69). Our reconstructions of the past would be more attuned to emic ways of being and knowing (i.e., the ontological) and the historical trajectory of etic categorizations (i.e., the epistemological). Taken together, this "ethico-onto-epistem-ology," per Barad, has the potential to engender greater objectivity in bioarchaeological research, as well as make reparations for the subfield's colonial legacy. We can also identify important parallels with feminist-inspired ideas promoted by Sandra Harding (standpoint), Donna Haraway (situated and embodied knowledge), and Alison Wylie (collaboration), which were laid out in Chap. 2's discussion of scientific objectivity.

7.4 Ancient DNA Testing

Technoscience makes viewable that which is invisible to the naked eye. For bioarchaeologists this has come to include a variety of stable isotopes (carbon, oxygen, nitrogen, lead, and strontium) and biomolecules (proteins, DNA, lipids, and carbohydrates). In their stable isotopic studies, for instance, researchers have reconstructed diet, ecology, and climate, as well as the movement of human and nonhuman across landscapes. That they analyze human, animal, and inanimate object aligns isotopic investigators' efforts with the posthumanism of Barad's agential realism. This particular technoscientific tool is also useful for gauging the extrasomatic aspects of

environments and cultures that impress themselves on—introduce themselves into—bodies in traceable ways. In contrast, aDNA analysis relates information about the inborn. Though the picture becomes much more complicated when epigenetics enters it, for bioarchaeologists are just beginning to consider how environmental and cultural factors can impact the connection between genotypes and phenotypes in unexpected and intergenerational ways (e.g., Gowland 2015).

Extraction of genetic material from the preserved muscle of a quagga, a zebra-like animal that went extinct in 1883, provided the precursor for aDNA testing (Higuchi et al. 1984). The year of this breakthrough, 1984, had already been laden with symbolic significance by Aldous Huxley's student George Orwell (1949), though the poetics of the quagga—with its black and white stripes melding into a solid posterior—has not. Invention of the polymerase chain reaction (PCR), a target enrichment strategy, made analysis of fragmentary and far more ancient DNA feasible (Knapp and Hofreiter 2010). PCR allows a small number of DNA molecules to be extracted from a sample and then amplified (or copied) for sequencing. Researchers have since identified several limitations in mitochondrial and nuclear DNA studies of ancient materials—contamination, degraded preservation, uncertainty of results' repeatability, and nucleotide misincorporation (Powledge and Rose 1996; Pääbo et al. 2004; Roberts and Ingham 2008). But, increasingly more sophisticated instrumentation promises to address many of these obstacles. Knapp and Hofreiter (2010) have pointed out that while PCR is still the most common approach, the invention of "next-generation-sequencing" holds much promise. Techniques like shotgun sequencing and DNA capture via hybridization, for instance, can read shorter fragment lengths of DNA and generate more sequence data, which are exceedingly useful for ancient and degraded materials.

Beyond identification of species (human and nonhuman) and their biological traits, technical fine-tuning has allowed researchers to draw social inferences about past peoples' lives. Kinship has been considered in terms of marital rules, residency patterns, and lineage associations (e.g., Bouwman et al. 2008; Dudar et al. 2003; Haak et al. 2008; Mafart et al. 2007). Analysts have discussed migration with specific attention to populations' origins, colonizations, border crossings, and interminglings (e.g., Friedlaender et al. 2002; Haak et al. 2005; Kaestle and Smith 2001). As an extension of skeletal assessments, biomolecular paleopathology (also known as palaeomicrobiology) documents microevolutionary changes of infectious diseases (i.e., bacterial, viral, parasitic), as well as social responses to inherited ones (e.g., Brosch et al. 2002; Filon et al. 1995; Mays and Taylor 2003; Rubini et al. 2014; Spigelman and Donoghue 2001; Spigelman and Lemma 1993; Spigelman et al. 2002; Zink et al. 2007). Researchers have also used genetic testing to sex bodies when preservation has compromised skeletal markers of sexual dimorphism or morphological differences have not yet developed (e.g., Brown and Brown 2011: 151–167; Cappellini et al. 2004; Faerman et al. 1998; Matheson and Loy 2001; Mays and Faerman 2001; Stone et al. 1996; Vaňharová and Drozdová 2008). To this end, they have developed varied methods, many of which make use of PCR amplifications (e.g., Alonso et al. 2004; Daskalaki et al. 2011; Graham 2006; Kaestle and Horsburgh 2002: 115–116; Meyer et al. 2000).

Given such technological progress, few should be shocked by the suggestion that aDNA testing will be de rigueur technoscientific practice in the future. Yet, new ways of doing may or may not yield new ways of thinking. Radiocarbon dating certainly revolutionized archaeologists' understandings of time, and the impact of Libby's work on radiochemistry extended beyond the discipline. Similarly, genetic testing may be a modern way to distinguish bodily differences, as the history of making sex makes clear (Chap. 2). But, just what might be the ontological, epistemological, and ethical implications of such innovation? Many researchers who invest in a biomedical bodyscape, I believe, regard genetic testing as a fairly unproblematic tool for establishing identities as they pertain to gender, sexuality, race, and ethnicity. Data derived from biomolecular studies of ancient remains, however, requires reflection for the cultural–historical significance of chromosomal evidence cannot be assumed.

7.5 Geneticization

Geneticization, according to its neologist, Abby Lippman (1991: 19), is "an ongoing process by which differences between individuals are reduced to their DNA codes, with most disorders, behaviors and physiological variations defined, at least in part, as genetic in origin." For Lippman, in her seminal piece and in subsequent writings (1994, 1998, 2000), this process is alarming. Inasmuch as we live in a society that is far from utopic—is beleaguered by sexist, racist, and homophobic, and transphobic beliefs—the social value placed on biological information runs the risk of advantaging and normalizing certain groups while discriminating against and further stigmatizing "Others." It goes without saying that our not too distant past contains fairly horrifying examples of eugenic policies undergirded by deterministic thinking (see Chap. 2).

In the case of race, for example, scholars have exposed geneticization as a new and "improved" type of biologization (or naturalization). Given the connections analysts of human remains have historically drawn between race and sex, consideration of the former's geneticization may offer a frame for thinking critically about the latter. If blood quantum laws were our yesterday and BiDil manufacturing our today then DNA testing is our tomorrow.[3] Here we have the history of racialized identity production, which is evermore biologized, politicized, and profitable (for some). The lucrativeness of recreational genomics for companies with catchy names

[3]Blood quantum is the percentage of one's blood that defines membership in a Native American tribe. Introduced by the U.S. government in the early eighteenth century, blood quantum is historically tied to colonial expansionism. Privileging biological connections comes at the expense of history, culture, language, and lived experience. BiDil is a drug that treats congestive heart failure in African Americans. It was the first race-based drug to be approved by the FDA. Seeing that race is a social construction, many anthropologists have questioned the maker's motivations and the drug's efficacy (e.g., Jones and Goodman 2005; Keita 2006).

like Ancestry.com, Roots for Real, and Family Tree DNA portends future growth, for example. According to research conducted in 2007, medical practitioners and consumers worldwide spent $730 million on personal genetic tests and the market is projected to grow at a rate of 20 % a year.[4] As Jean Comaroff and John Comaroff (2009: 9) note, recreational genomics is "a business rising up in the fecund spaces of the identity economic wherein the corporeal meets the corporate, where essence becomes enterprise." Disquietingly, when these tests are mainstreamed, critics remark, the complexities of population genetics are oversimplified leading consumers to believe that test results illumine racial, ethnic, national, or religious (i.e., Jewish) identity (e.g., Beckenhauer 2003–2004; Comaroff and Comaroff 2009; TallBear 2003, 2013; Wade 2007). Such identification, based on either real or imagined genealogical (i.e., genetic) relations, can then become the basis for declarations of affiliation or community building (Pálsson 2007).

Similar to race, gender's geneticization is a recent phenomenon but one that is also part and parcel of biologization. Indeed, Lippman (1991) originally coined geneticization to address a gendered concern—biomedicine's routinization of prenatal genetic testing and the resultant "choices" that pregnant women make when faced with "abnormal" diagnoses (e.g., Down syndrome). The line between genetic testing and genetic discrimination is ever so fine (see also Rapp 1999). Lippman is particularly troubled by the possibility that reproductive technologies will be used to determine sex. "Perhaps the most dramatic consequence of gender stratification for prenatal diagnosis," she writes (1991: 39), "is the (potential) use of genetic screening and testing to identify and select fetuses on the basis of their sex alone." More recently, scientists have advanced prenatal diagnosis of intersex conditionslike congenital adrenal hyperplasia (e.g., Nimkarn and New 2007).

In addition to race and gender, the geneticization of sexuality has also been on the horizon in a brave new world. Claiming they isolated a gene for male homosexuality on the Xq28 stretch of the X chromosome, Dean Hamer and colleagues set this process in motion (e.g., Hamer and Copeland 1994; Hamer et al. 1993). Though subsequent studies have been unable to replicate their findings (e.g., Rice et al. 1999), the media's reports on the "gay gene" have circulated widely. Now, making fruitflies "gay" is currently all the rage in genetic testing, as journalists first reported in 2007. One headline touts, "In Fruit Flies, Homosexuality Is Biological But Not Hard-Wired, Study Shows"; another heralds "Scientists Make Fruit Flies

[4]Piper Jaffray & Co., an investment bank and asset management firm, conducted the research for this project, which is cited in Matthew Herper and Robert Langreth's Forbes.com article "Will You Get Cancer?" (http://www.forbes.com/free_forbes/2007/0618/052_2.html, accessed 7 March 2016). Personal genomics, then, accounts for almost half of all global genetic testing. In 2010, the global genetic testing market generated around $1.5 billion, and is anticipated to reach $4 billion by 2015. This projection is included in a January 2012 research report "Global Genetic Testing Market Analysis" by RNCOS, a global market research and information analysis company (http://www.rncos.com/Report/IM352.htm, accessed 23 November 2015).

Gay, Then Straight Again."[5] For now, scientists pursue and publish on same-sex couplings but refrain from qualifying these interactions in terms like "gay" and "homosexual" (e.g., Grosjean et al. 2008; Marcillac et al. 2005).

Such geneticization has ontological and epistemological impacts in that socio-sexual identities are presented as deterministic and universal. Being XX, for example, says something about all females' reproductive abilities and genitalia, as well as motherhood, childcare practices, nurturing personality, domestic responsibilities, physical limitations, and sexual orientation. Moreover, despite the assorted intersexual permutations that appear in nature, most biomedical practitioners find the two-sex model sufficient for explaining human variation. To do so, however, naturalizes a dichotomous understanding of sex and contributes to the production of "a domain of unthinkable, abject, and unlivable bodies" (Butler 1993: xi). Therapeutic termination (or less euphemistically, abortion) of "undesirable" fetuses may then provide a possible solution, as can sex selection during the in vitro fertilization process, which has become increasingly normalized (Robertson 2009). The roles that misogyny and homophobia play in such decisions are elided. Geneticization also highlights a modern trend to determine gender at increasingly earlier stages in the lifecycle—from child to newborn to fetus to fertilization of egg and sperm.

Sex determination of the prepubescent body using genetic techniques is where bioarchaeologists enter. Since Arnold van Gennep (1960 [1909]) first outlined *les rites de passage*, anthropologists have documented the overt rituals and more mundane subtleties of socio-sexual identity's production, reiteration, and renegotiation. Surely, bioarchaeologists who study distinctive cultures and distant time periods, who recognize the importance of conjunctively considering contexts, should also be wary of the monolithic and deterministic characterizations that gender's geneticization yield. But are they? Many (though not all) researchers who utilize aDNA testing to determine sex are quick to distinguish it from gender (e.g., Cox and Mays 2000: 117; Hunter and Cox 2005: 162; Lewis 2007: 47; Kaestle and Horsburgh 2002: 97). That the explication resonates as lip service is evidenced by these same researchers use of genetic testing to determine juveniles' chromosomal sex (e.g., Cox and Mays 2000: 52; Hunter and Cox 2005: 162; Lewis 2007: 54–55; Kaestle and Horsburgh 2002: 93–94). The problem is the presumption that the grave offers information about events surrounding the cradle.

7.6 Sexing Juveniles

Since the skeletal markers of sexual dimorphism do not manifest until puberty, analysts have found it difficult if not impossible to sex juveniles by gross anatomical inspection. Though it is rarely articulated why juvenile sex is so important to discern,

[5]See http://www.sciencedaily.com/releases/2007/12/071210094541.htm and http://www.foxnews.com/story/0,2933,316316,00.html, both were accessed 7 March 2016.

many bioarchaeologists are nevertheless unsettled by their inability to do so. They are less troubled by rigid dimorphism; it is presumed. "Undoubtedly the largest single problem in the analysis of immature skeletal remains," Scheuer and Black (2004: 19) lament, "is the difficulty of sexing juveniles with any degree of reliability." This is not for lack of trying on the part of skeletal analysts (e.g., Black 1978; De Vito and Saunders 1990; Loth and Henneberg 2001; Molleson et al. 1998; Schutkowski 1993; Sutter 2003; Veroni et al. 2010; Weaver 1980; Wilson et al. 2008, 2011). The optimistic examine femora, mandibles, petrous bones, ilia, sciatic notches, select deciduous and permanent dentition, etc.—either as a distinct morphometric feature or in concordance—in the hope that more data will prove statistically significant and standardizable.

Unsurprisingly, analysts who have the greatest accuracy are working with samples of known sex; determination is based initially either on historic records or inspection of genitalia and gonads (e.g., Schutkowski 1993; Sutter 2003; Veroni et al. 2010; Weaver 1980; Wilson et al. 2008, 2011). Researchers who have tested these methods identify a number of confounders. Dejana et al. (2008), for instance, recognize a correlation between pelvic morphology and age at death, an observation that requires additional research and provides a bookend to Phillip Walker's (1995, 2005) work on elderly individuals (see also Cardoso and Saunders 2008). Others caution that a method developed for one population may not be widely applicable given the environmental and cultural conditions that impinge on a group's growth and development (e.g., Cardoso and Saunders 2008; Sutter 2003; Wilson et al. 2008).

But, at the molecular level, the subtlety of differences and puberty are just minor inconveniences for investigators. Genetic testing has provided the technoscientific means for discerning the sex of juveniles, as case studies confirm (e.g., Cunha et al. 2000; Faerman et al. 1998; Keyser-Tracqui et al. 2003; Mays and Faerman 2001; Stone and Stoneking 1999; Tierney and Bird 2015). Continued improvements make these methodological advances, which researchers describe in great detail, exciting and ever more reliable. As more and more researchers use aDNA data to sex juveniles, however, the reasons for doing so often garner less discussion. Unstated is that by virtue of assigning them a sex, children have gender. In other words, researchers presume that sex was the most important facet of decedents' identities, and thus the identification of their sex is a justifiable aim in and of itself. Illustrative is a study of Bell-Beaker people from an Eneolithic burial site in the Czech Republic.

As Vaňharová and Drozdová (2008) explain, mortuary practices marked adult decedents in patterned ways that likely had to do with gender ideology. Specifically, mourners situated female-bodied decedents rightwards in contrast to leftwards facing male-bodied individuals. Though they offer minimal detail, referring the reader to other publications, grave goods were also gendered. "For children or immature individuals," the researchers (Vaňharová and Drozdová 2008: 64) write, "it is unknown if this burial rite was strictly followed, and thus the gender of an individual can be misidentified." In extracting aDNA for analysis, then, their aim is to verify or falsify the accuracy of sex determinations from archaeological materials.

Yet, despite the application of innovative molecular techniques, the authors put forth notions about gender identity that are dated conceptually. Vaňharová and Drozdová neither explain what they mean by gender or sex, nor elaborate on the relationship they see between these concepts. To them, gender is genetics, as evidenced by Table 1's caption: "Gender status obtained either by archaeological or genetic analysis" (Vaňharová and Drozdová 2008: 66). Additionally, discordances between genetic and archaeological determinants of sex are regarded as exceptions; they do not generate deeper interrogation. Finally, seeing that aDNA testing is used to determine if gender was archaeologically misidentified, genetic information is presented as the key to a decedent's "true" identity. For Vaňharová and Drozdová, biological determinism countermands consideration of socialization and identity formation. This is a shame. Had the researchers examined conjunctively age, chromosomal sex, grave materials, and body position, their data set may have illumined significant cultural information about gendering processes.

Such conceptual shortcomings are not idiosyncratic but are shared by many bioarchaeologists regardless of the culture under investigation. Far removed from Copper Age peoples living in the present-day Czech Republic, for instance, are the Aztecs who occupied what in the fifteenth century what is now Mexico. To determine the sex of prepubescent sacrificial offerings, De la Cruz et al. (2008) similarly extracted ancient DNA. And reminiscent of other studies, most of their article is devoted to methods and results, leaving little room for interpretations. (The article in total is 8 pages: one page is introductory comments; five pages details methods and results; a single page treats interpretive discussion; and references cited comprise the final page). Their aim, they state succinctly (2008: 520), is to better understand the ceremonies that involved ritual killing. De la Cruz et al. (2008: 519) determine that most of the children sacrificed were male, which they believe speaks to "gender bias." A distinction between sex and gender is never offered, an inattention that implies conflation of the two concepts.

In explanation of the pattern—though not the particular since the single female sacrifice also identified in the sample is trivialized—De La Cruz et al. (2008: 525) argue that "male victims would better personify" the male deity Ehecatl-Quetzalcoatl to whom these children were offered. Interestingly, the authors identify this deity as a *tlaloque*. While De la Cruz et al. accurately define tlaloque as those small-bodied lesser deities who assisted the rain god Tlaloc, archaeologists and art historians have generally agreed that Ehecatl-Quetzalcoatl is a principal deity in his own right, not a tlaloque but the wind god (Aguilar-Moreno 2007: 146, 244; Florescano 1999; Milbrath 1999: 177). The discrepancy is not minor. To think about the significance of ritual practices and personhood, especially when pertinent to gender, it is essential that researchers possess a deep, or at least reliable, understanding of sociocultural context and historical setting. Indeed, the age at which these children were sacrificed may have been far more important than their gender. Or, at the very least, researchers must contemplate age and gender's intersection, something that De La Cruz and colleagues do not do. One should also distinguish etic categorizations for age from emic reconstructions of it; both are useful, but their efficacy is contingent on the research queries posed.

De La Cruz and colleagues may have benefitted from engagement with archaeologists' studies of Aztec gender and/or childhood (e.g., Brumfiel 2001; Joyce 2000a, b). Joyce (2000a), for instance, has discussed the age cohorts into which Aztec childhood was divided and she draws on Butler's theory of performativity to do so. Varied lifecycle rituals involving transformative bodily practices increasingly solidified a child's gendered identity, a process of becoming that was completed by the early teens. Until this age, children—"precious" and "unmodified raw materials" (Joyce 2000a: 476)—were not nonentities, but they were not yet regarded as fully gendered persons.

Ultimately, with knowledge about cultural context in hand, bioarchaeologists are poised to move beyond the shortcomings that result from fetishization of molecular methods (i.e., geneticization of gender). The slope is slippery, however. As Lippman (1994) writes, biomedical breakthroughs like genetic testing are progressive, complex, *and* seductive, and as a consequence we may overlook their deficiencies. Mediascapes' news reports about recent bioarchaeological discoveries indicate that she is not wrong in this regard.

7.7 Technoscience in Practice

Around the end of February 2011, an exciting news story caught the public's attention. "Earliest Human Remains in U.S. Arctic Reported" the *Associated Press* headline read (Schmid 2011). The story was circulated globally via countless internet news sources, including *The Jerusalem Post*, *The Boston Globe, The Washington Times, The Huffington Post, The New York Times, The China Post, The Taipei Times*, Pakistan's *Daily Times*, and Singapore's *Strait Times*, amongst others. A scholarly article also appeared in Science (Potter et al. 2011). To recap, the cremated and intentionally interred remains of a three year old child (± a year) were uncovered by archaeologist Ben Potter and his team at the Upper Sun River site in central Alaska. This East Beringian burial was significant for several reasons not least of which was its date. Stratigraphy and radiocarbon dating confirmed that the child had died about 11,500 years ago. The scholarly publication contained no mention about aDNA testing. News items, on the other hand, included quotes from researchers about the promise of such analysis in the future. Native Alaskans of the local and federally recognized Healy Lake Traditional Council who are collaborating with scientists expressed support for aDNA testing (Grimes 2011; Rosen 2011).

The queries that scientists anticipate answering with aDNA testing pertain to the child's sex. "While the researchers were not able to determine the sex of the child from the bones," one journalist reported, "Potter said they hope to obtain a DNA sample that might give them the answer" (Schmid 2011). Another news report elided sex completely and substituted gender: "But the lineage of the Ice Age child, whose gender is unknown, is yet to be determined" (Rosen 2011). These same reports, however, contain no additional information about researchers' reasons for genetic sex determination. I would suggest that an emphasis on sex determination

signals what EuroAmerican investigators (and journalists) hold to be *the* significant distinction between humans. If these anthropologists are going to conduct genetic sex determination, they should also acknowledge the cultural and historical specificity of their own sex/gender system—one that is profoundly contoured by Western industrial capitalism, as was discussed elsewhere in this book. Without consideration of cultural–historical notions about sex and gender, investigators' studies of ancient remains may simply naturalize and universalize a sex/gender system that is in fact culturally specific and modern in origin.

Indeed, the use of aDNA testing for this reason seems anomalous given many native Alaskans' cultural beliefs about sex, gender, and sexuality. According to ethnographic accounts, several native Alaskan groups, including the Tlingit (De Laguna De Laguna 1972: 250–251) and Inuit (O'Neil and Kaufert 1995; Saladin d'Anglure 1994), regard biological sex, i.e., genitalia, as changeable at birth. They also recognize a category of two-spirit (*gʌxtan* in Tlingit) that is conferred at birth. De Laguna (1972) labels these individuals as "berdaches" "transvestites," or "homosexual," designations that reflect her Western perspectives. By all accounts they are complex figures. The Tlingit regarded them as "half-girl and half-boy" (or half-woman and half-man) whose souls are reincarnated from generation to generation. And though De Laguna (1972: 499) translates the Tlingit word *gʌxtan* as Coward, in the myths she recounts they are very strong men who mostly act like women.

Given the links between all of these Alaskan communities (De Laguna 1972), these facets of socio-sexual lives may also apply to the Athabaskan-speakers of the Arctic, which includes the Healy Lake Traditional Council's members. Will Roscoe's extended consideration of gender variance in native North America offers further support. For Northern Athabaskans, he describes a belief in cross-sex reincarnation (Roscoe 1998: 15). He also remarks that a family may lack or desire a son, and accordingly identify female children as male or having a mixed gender (1998: 87). Granted, early East Beringians may not have shared cultural or historical links to historic and modern Athabaskan peoples. But, investigators would display a certain amount of arrogance if they presumed that the sex/gender system of these early migrants to North America bears even passing resemblance to their EuroAmerican twenty-first century one. Drawing an analogy between the Athabaskans and the East Beringians may be imperfect, but it is far more appropriate.

According to a news source, Alaska Natives in the region will have the opportunity to compare their DNA profiles with genetic information extracted from the ancient. The president of Tanana Chiefs Conference, a regional consortium affiliated with the local federally recognized tribe, the Healy Lake Traditional Council, has already volunteered to do so (Grimes 2011; Maugh 2011). As reported in the *Los Angeles Times*,

> The team hopes to obtain DNA from the child's remaining bones, which would provide new insights into both where the Beringians came from and their relationship to the region's current residents. Members of the Healy Lake Native community have offered to donate their own DNA for comparison (Maugh 2011).

Ultimately, Council members are not concerned with determining the child's sex. Rather, their questions pertain to cultural affiliation. In this case, gender identity takes a back seat to ethnicity.

Some researchers recognize genetic testing's limitations when it comes to teasing out American Indians' lineage connections. As Thomas Killion (2001: 163) stresses, "Currently DNA analysis is hampered by the absence of definable population specific genetic markers, i.e., it cannot be used to assign membership to a population." But, advocacy of genetic testing to establish ethnic connections should raise concerns beyond technical limitations. Certainly, such collaborations between native peoples and professional practitioners, ones that bring the formers' questions to the fore, might prove fruitful in decolonization efforts. Seeking native input may not be enough, however. As Kimberly TallBear (2003, 2013), a scholar and member of the member of the Sisseton-Wahpeton Oyate, has emphasized, using genetic markers to verify lineage connections and cultural continuity can empower those who have been historically subjugated and silenced. But, such geneticization may be "a contemporary and perhaps more sophisticated form of eugenics" (TallBear 2003: 82). Proponents may biologize race, a vexing naturalization of culture that resurrects the scientific racism born from Linnaean taxonomic classification.

7.8 Ethico-onto-epistem-ology

> This is not an argument for or against…technoscientific practices writ large. On the contrary, the point is that these practices hold both incredible promise and unfathomable dangers. Which is not the end point but the beginning point for ethical considerations. (Barad 2007: 369)

I would not self-identify as a Luddite, but I do have a healthy skepticism about technical innovations. These advances often outpace the philosophical debates that flesh out the ethico-onto-epistemological consequences of developing and applying them. Philosopher Marianne Boenink (2010) has written quite eloquently about the unintended consequences that may result from a technoscientific practice unexamined. In the case of molecular medicine specifically, she calls for meaningful reflection and the implementation of guidelines "when a technology is only just emerging" (2010: 11). Granted, genetic testing is not a recent innovation in bioarchaeology, but Boenink's cautionary approach should not be ignored by investigators who utilize genetic testing to study ancient remains. In other words, the application of aDNA testing will only become more, not less prevalent, in bioarchaeological studies, and deliberation now may circumvent conceptual shortcomings or flexible ethics in future investigations.

As the development of aDNA testing progressed in the 1990s, Bernd Herrmann and Susanne Hummel did urge investigators to err on the side of caution. "Reflect on the epistemological aspects of...[your] projects: what will be gained by the sought-after knowledge, and what might this knowledge be used for?" they wrote

(1994: 8). For their part, Herrmann and Hummel were concerned with the skill and scientific expertise of aDNA analysts. Yet, the first extended meditations on this topic did not appear in the anthropological literature until the start of the twenty-first century (Kaestle and Horsburgh 2002: 106–109; O'Rourke et al. 2000: 223). Since that time, bioarchaeologists' reflections have included considerations of genetic testing's unavoidable destruction (Rutherford 2008: 124), as well as lineage relationships between ancient human remains and descendant communities (see selections in Turner, ed. 2005). The latter concern, alluded to in the previous section, is far from inconsequential given anthropologists' past scientific racism and present-day repatriation debates. Considering analysts' ongoing technical refinements and applications, the ethical parameters of and onto-epistemological frames for biomolecular archaeology could do with expansion and critical questioning, especially with regard to genetic sex determination's commonsensical usage.

Though Hummel and Herrmann catalyzed a methodological shift in sex assignment (1991) and then promoted circumspection (1994), they have yet to deliberate about the consequences of amplifying Y-chromosome-specific sequences. To the best of my knowledge, the reception of wisdom remains unremarked upon in their more recent publications. Lippman may have found it ironic that the same year she coined the term geneticization, Hummel and Herrmann published their study on genetic sex determination, heralding such work as a "breakthrough to basic sociobiological information in historic and prehistoric populations" (1991: 267). I am uncertain about the reasons for such a disconnect, but it may speak to the relationship between sociobiology and social studies, the (dis)regard that the two have for each other, and the oversimplified representation of bodyscapes in mediascapes like news coverage.

As should be clear as this book draws to its conclusion, I approach ethical, ontological, and epistemological deliberation as a bioarchaeologist steeped in feminist and queer studies. In my theoretical alignment, I do not begin from a negative position, born from certain threads of feminism [the progressive left according to Purdy (1996: 75–76)], that technological innovation is harmful to humans in general and women specifically. Like Haraway (1991), I would rather be a cyborg than a goddess in our brave new world for the cyborg's hybridity reminds us of common sense's construction, engenders new ways to exist, invites political change and social justice. The cyborg is an example of ethico-onto-epistem-ology inasmuch as it refigures "the nature of being, knowing, and valuing" (Barad 2007: 409).

Yet, the technoscientific innovation that gives birth to the cyborg *also* has its drawbacks. Overtechnologization of reproduction is one example, as Robbie Davis-Floyd (1998: 260) contends, that may "culminate in transcendence of all natural bounds, including both biological and planetary limitations." The key, as she discovered from modern midwives, is to respect and learn to utilize technology, but not grant it center stage (see Chap. 6).

Clearly, for bioethicists who wrestle with the modern, concerns about biotechnology spotlight the circumvention of our humanity vis-à-vis technological progress—we will inevitably become cyborgs, animal–human hybrids, clones, Darth

Vader (or worse Boba Fett). But, those who study ancient remains may inadvertently utilize technology to invoke essence, as my assessment of geneticization suggests. The difference is that modern applications go beyond the boundaries of the human, while investigations of ancient biomolecules materialize human nature.

Bioarchaeologists' use of genetic testing to sex juveniles attests to subtle deterministic notions about social identity with little, if any, regard for socialization, play, parenting, or communal childcare. The native Alaska case, however, demonstrates that genetic identity is irrelevant in light of cultural notions about sex's biological basis, its mutability, and connection to personhood. But, with its geneticization, gender comes to be regarded as encoded in our DNA rather than regarded as a product of performance or process. From the mouth of Huxley (2004 [1932]: 40) Mustapha Mond (the Resident Controller for Western Europe), "History is bunk." Gender's geneticization would indicate that culture is bunk, as well.

Moreover, most investigators who use aDNA testing remain steadfastly committed to chromosomal dichotomization, XX and XY, at the expense of variation (though see Brown 1998; Brown and Brown 2011; Graham 2006). These investigators do not refrain from accounting for manifold diversity because they reckon genetic testing is just a *modern* way of "making" sex. In truth, they seem to be inattentive to the culturalization of nature despite contradictory cases—in the present and past—that do not single out chromosomes as foundational. It is safe to state that genotypic variability had no relevance in East Beringians' epistemological views about bodily difference, for example. Writing on the new genetics, the socialogists Paul Atkinson and Peter Glasner (2007: 5) note, "Older forms of understanding are very durable, and can accommodate novelty, rather than being completely overturned by it." If their statement has weight, the social beliefs that inform thinking about the biology of sex are so unconsciously ingrained, appear so natural, that it is difficult to subvert them despite advances in genetic technology. And the performativity of technoscientific practices reify such common sense by imparting them with a materiality and reiteration.

Since one consequence of naturalization is the legitimation of social inequalities, it is possible that the geneticization of gender is as unethical as it is intellectually problematic. "At crucial periods of social change," Atkinson and Glasner also tell us, "women's social mobility has been challenged by a series of biological and medical counters" (2007: 6). Might we be at such a biotechnological and social juncture? Might the geneticization of gender, just a new riff on a very old and reductionist melody, represent yet another way by which to legitimate heteronormative thinking and gender discrimination born from sexism and heterosexism? In the case of women, is the gendered gene the new wandering womb, hysterical episode, biological clock? If so, bioarchaeologists' use of genetic testing is not liberatory. As Haraway (1991: 155) reminds us, "There is not even such a state as 'being' female, itself a highly complex category constructed in contested sexual scientific discourses and other social practices." The goddess is dead, she continues (1991: 162). Yet, genetic analysis of the ancient works toward her resurrection. Long live the goddess, counter those practitioners uncritical of aDNA studies.

7.9 Worlds Within Worlds

The technoscientific revolution has certainly innovated archaeology. Genetic testing, specifically, has granted mechanized access to and knowledge about the human body on the scale of the micro. In so doing, it has circumvented the vagaries of preservation and sensuality. And when examined in conjunction with other types of material evidence and cultural information, biomolecular data derived have the potential to greatly enrich reconstructions of past cultures' sex/gender systems and their emic bodyscapes. "Our imaginations, bodies, desires, organizational structures of research and investment, and much more quake with the expectation of the impending 'nano-tsunami' that portends immense changes to life on earth and beyond," Barad (2007: 163) anticipates.

Yet, genetics' vast potential notwithstanding, researchers who utilize aDNA testing need also reflect on the meanings communicated by and implications of such work. In the twenty-first century, sex chromosomes reveal the "truth" of (or in) the matter, or so it is argued by technoscientific practitioners. While it might be a modern method for determining sex, when situated within a historical trajectory, we can see that it is one of many techniques analysts have heralded as purportedly objective but that closer consideration reveals as informed by commonsensical ideas about socio-sexual lives. A shifting elemental focus—from skull to pelvis to gene—speaks to culturalization of the natural. Elucidating significant dimensions of the social contexts in which these analyses have occurred, the performativity of practices, also communicates just how the cultural becomes naturalized.

It is unsurprising then that sex and race have been so closely wedded in researchers' investigations; the typologization of human differences has long been predicated on deterministic and universalistic foundations. In their discussions of personhood's geneticization, contemporary bioethicists document the latest chapter in this history. Their ideas are helpful for interrogating bioarchaeologists' application of aDNA testing, especially when used to sex those bodies that have not yet developed sexually dimorphic morphology. In most cases, the inadvertent result of this work is the representation of gender as essence rather than process, as presentist in its construction, as difference that is dichotomous. Lest we forget, the state motto in a *Brave New World* is "COMMUNITY, IDENTITY, STABILITY" (Huxley 2004 [1932]: 15). This narrative of human nature is neither provocative nor novel, and its redundancy would be forgivable if the evidence for such inferences existed and were not a priori.

Ultimately, many bioarchaeologists remain wedded to dimorphism and division despite all evidence to the contrary. Despite Darwin's and colleagues' observations of trimorphism and hermaphroditism. Despite human variation—anatomy, identity, interaction—along a continuum. Despite queer embraces. Despite lived-in experiences of physiological phenomena that are shaped by and shape culture. Despite ethnographic evidence of sex as a biophysical feature with no known biomedical referent. Despite the panoply of socio-sexual lives populating certain places and periods. Despite historical circumstances and cultural processes that constituted and

dissolved the identities of certain nonnormative persons. This valuing of certain existences and erasure of others is not just a matter of discourse or social construction or representation. The empirical data demand that bioarchaeologists refigure the etic bodyscape that frames their analyses, as well as reconstruct the emic ones for the past culture systems they strive to understand. And once we begin this intellectual labor, we will see that there are worlds within worlds awaiting us…

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