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Cynthia L. Martin
Candidate

American Studies
Department

This dissertation is approved, and it is acceptable in quality and form for publication.

Approved by the Dissertation Committee:

Michael L. Trujillo, Ph.D.
Associate Professor, American Studies Department, University of New Mexico

Miguel Gandert, M.A.
Distinguished Professor, Communication and Journalism, University of New Mexico

Vera Norwood, Ph.D.
Professor Emerita, American Studies Department, University of New Mexico

Alex Lubin, Ph.D.
Professor, American Studies Department, University of New Mexico

**DECOLONIZING THE BODY: BREAST CANCER
AND THE ENVIRONMENT IN TOXIC TIMES**

by

CYNTHIA L. MARTIN

B.A. English, Portland State University 1990
M.A. American Studies, University of New Mexico, 2004

DISSERTATION

**Submitted in Partial Fulfillment of the
Requirements for the Degree of**

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Dedication

To all those who have suffered debilitating illness due to environmental toxic exposure, and to my mother, Margaret S. Martin, who believed in education as the best way through.

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ABSTRACT

This dissertation explores cultural narratives regarding the relationship between environmental toxins and breast cancer causation. It is not an analysis of current scientific research; grounded in Foucault's theory of genealogy and archaeology, it evaluates cultural narratives on breast cancer causation that may be subsumed by the mainstream focus upon a cure for breast cancer, overlooking how people with breast cancer perceive illness causation, particularly as it relates to toxic exposure. Theories of place, space, and the neoliberal politics behind biotechnology support understanding the toxification of the human body as neocolonialism, and invite decolonizing methodologies as a means of understanding and opposing what is happening in the microgeographies of "inner space." Current artistic representations of breast cancer causation and the toxic body are evaluated as a means for reframing discussions about breast cancer to bring discourses of breast cancer causation into what Rancière identifies as "the sensible," or that arena of political discourse that is mainstream, topical and drives mass cultural awareness.

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Preface

My friend is about to show me what has happened to her. With no other way to explain, she removes her clothes and stands before me, a newly-made woman, a creation of flesh and technology, in awe and sublime terror. Circular scars extend halfway between her nipples and chest wall, the flesh removed from her belly and reinserted into her scooped out breasts. And with equal clarity, I see the pain, self-doubt, and fear of death that has taken over her ordinary life. She is alive, yes--but how so? And for how long?

She believes her breast cancer was brought on by hormone replacement therapy to alleviate menopausal symptoms. Instead she has been reshaped and weakened by that which did not kill her. Standing before me she is woman and nature and science and technology, toxins and bread, radiation and sunlight, less a monster, more goddess, or avatar. And when placed inside a discourse on cancer causation, she is nature in its most current mutation, both prophet and profit. She is proof that the sublimity of science adjoins with nature and God as her body is redesigned out of flesh and fat, worked over by doctors and technology, worked over again by the health care system, and an insurance formulary.

Introduction

I do not have breast cancer. My relatives do not have breast cancer. But my friends, neighbors, coworkers, and community members do. Perhaps one day I, or my two sisters, or my daughter, or my son, or my cousins, will have it. Statistically, one of us will.¹

In this examination of breast cancer culture and politics in the United States, I use breast cancer causation as it relates to environmental toxins as a discursive means of enabling interaction between a variety of cultural narratives surrounding the topic. In addition to exploring contemporary narratives about breast cancer causation, I am interested in a means by which ideas about the relationship between environmental toxins and cancer, a seriously underfunded and little-discussed aspect of the illness, can be moved from a peripheral topic to one with a prominent presence in public discourse.

The narratives that I am interested in encompass cultural metaphors about the body as landscape; what we tell and are told about science and its role in illness definition and treatment; biotechnology's self-story about "inner space" and its inherently limitless opportunities for patent and profit; and discourses about the experience of breast cancer as it adjusts, removes, affects, establishes, or destabilizes personal identity through an interaction with cultural values and expected norms. I also examine personal representations of breast cancer and environmental toxins through visual and written cultural products, evaluating them as experiences of pain and suffering, survivorship and endurance, and self-told illness narratives linking breast cancer with environmental exposures.

The narratives I am examining include a Marxian analysis of biotechnology and its neoliberal foundations that serves as an example of the standard biotech business narrative, Melinda Cooper's *Life as Surplus: Biotechnology & Capitalism in the Neoliberal Era* (2008), and I juxtapose this against geographic narratives of place and space, particularly Doreen Massey's essay "A Global Sense of Place" and theories of neocolonialism, especially Couze Venn's work entitled *The Postcolonial Challenge: Towards Alternate Worlds* (2006). I also evaluate photographs and paintings of artists who have been working in what I call a breast cancer representation genre, including the artwork of Eugene Richards, Hella Hamid, Matuschka, David Fox, Hollis Sigler, and David Jay, and devote one chapter to examining the memoirs of Audre Lorde, Sandra Steingraber, Terry Tempest Williams, Susanne Antonetta, and the work of Rachel Carson. I also survey breast cancer cultural narratives that occur on a societal level among U.S. subjects through breast cancer advocate organizations; government research and policy groups; breast cancer researchers; environmental justice advocates; critics of pink ribbon culture; philosophers on subjects of pain, death, loss, and the power of self-narrative, among others. Through treating biotech narratives on an equal footing with public policy, community organizers, activists, artists, and personal story tellers, to name a few, the work builds on a commitment to leveling what is an otherwise uneven ground: the power and privileging of science and technology over the lives of people who are ill.

In interpreting these various cultural and personal narratives, I rely first and foremost upon an overarching tent of theoretical structure and method as developed by Michel Foucault: what he terms archaeology and genealogy. This approach provides the discursive space within which analysis and engagement with these cultural narratives can

occur through a variety of additional theoretical frameworks, secondary sources that provide a means of examining these specific breast cancer narratives. Among these sources, I rely upon the work of art critic and historian Jacques Ranci re, indigenous medicine scholar and M.D. Lewis Mehl-Madrona, Kathleen Stewart, and the decolonizing work of Chela Sandoval, Kelly Oliver, and Linda Tuhiwai Smith.

For this introduction, I will explain how I have found Foucault's work useful in providing a first horizon of analysis of this somewhat broad and spiraled analysis of breast cancer narratives, using a relatively unorthodox methodology which admits all voices as reliable texts for review and analysis. I will then provide a brief overview of what I consider to be the current conditions regarding linkages between breast cancer and environmental toxins, and why I feel this is such an important topic for study. Lastly I will briefly outline chapters one through four to serve as a template for the organization of the discussion.

Foucault and Subjugated Knowledges

As mentioned, I utilize Foucault's architectures of archaeology, genealogy, and subjugated knowledges to guide my evaluation on the state of discourse surrounding breast cancer causation and environmental toxins, and consider numerous narratives that contribute to the way American culture engages with the subject of breast cancer causation and experience. As will become clear, I am engaged in applying the flexibility of Foucault's method of archaeological inquiry into the state and history of ideas as I relate to a variety of theoretical perspectives upon the nature of breast cancer, science, research, the environment, and art. To this end, I consider these various theoretical frameworks as *narratives* or *texts*, as well as primary sources. I do not treat them as

positive, empirical realities, but as objects which exist, and can be set next to each other and worked off of each other in order to reveal subjugated realities of breast cancer, as well as possibilities of interpretation and action.

As Foucault articulates, archaeology is a methodological means of evaluating the development of ideas through discursive transformations. As a process that engages with a history of ideas:

. . . it recounts the byways and margins of history. Not the history of the sciences, but that of imperfect, ill-based knowledge, which could never in the whole of its long, persistent life attain the form of scientificity (the history of alchemy rather than chemistry, of animal spirits or phrenology rather than physiology, the history of atomistic themes rather than physics). . . . The history not of literature but of that tangential rumour, that everyday, transient writing that never acquires the status of an *oeuvre*, or is immediately lost: the analysis of sub-literatures, almanacs, reviews and newspapers [sic], temporary successes, anonymous authors. . . . Thus defined . . . the history of ideas is concerned with all that insidious thought, that whole interplay of representations that flow anonymously between men; in the interstices of the great discursive monuments, it reveals the crumbling soil on which they are based. It is the discipline of fluctuating languages (*langages*), of shapeless works, of unrelated themes. The analysis of opinions rather than of knowledge, of errors rather than of truth, of types of mentality rather than the forms of thought. . . . Archeology is ‘nothing more than a re-writing . . . a regulated transformation of what has already been written.’ (*The Archaeology of Knowledge*, 153-7).

Thus, although I am interested in contemporary scientific research surrounding breast cancer, I am engaging with it as a shifting narrative, one which sometimes distances and sometimes leads popular conversation surrounding the breast cancer phenomenon, but which, for the purposes of this analysis, is not privileged over other voices, disciplines, and understandings about the illness, particularly as it relates to environment and landscape. Science is one *idea* or *object* in a history of ideas about these two concurrent contemporary phenomena: breast cancer, and environmental toxins, which are the *subject* of this analysis. So too are anecdote, psychology, literature, documentary, painting, geography, and critical cultural studies focused upon biopolitics, “pink ribbon culture,” political action, and the body.

Further, the “regulated transformation” that I am attempting through this work is to break open access to perspectives of thought that are indirectly inferred and to find mechanisms, primarily through art and literature, which can bring such critiques and understandings into a more open discussion and context. I do this in part by privileging what Foucault identifies as a process of *genealogy*. Foucault explains it thus:

It is . . . not an empiricism that runs the genealogical project, nor does it lead to a positivism, in the normal sense of the word. It is a way of playing local discontinuous disqualified, or nonlegitimized knowledges off against the unitary theoretical instance that claims to be able to filter them, organize them into a hierarchy, organize them in the name of a true body of knowledge, in the name of the rights of a science that is in the hands of the few. Genealogies are therefore not positivistic returns to a form of science that is more attentive or more accurate. Genealogies are, quite specifically, antisciences. It is not that they

demand the lyrical right to be ignorant, and not that they reject knowledge, or invoke or celebrate some immediate experience that has yet to be captured by knowledge. . . . They are about the insurrection of knowledges. . . . Genealogy has to fight the power-effects characteristic of any discourse that is regarded as scientific (*Society Must Be Defended*, 9).ⁱⁱ

By way of example, in 1976, when Foucault delivered his address on the topic at the Collège de France, one “subjugated knowledge” was Christianity’s reliance upon creationism as the backbone of its cultural and historical understanding of life on earth. At the time such beliefs were not controversial: there was a tacit agreement to allow science, religion, and government more independence from each other. Now however, the matter of evolution is widely disputed in public fora, in part because Christian fundamentalists have begun to attack the teaching of evolution in public schools and to rhetorically attempt to blur the lines between “science” and “belief.” In 1976, these ideas, while remaining fundamentally intact culturally, were effectively masked or “subjugated” in that they existed outside of politics. Today, their role in the structure of our cultural underpinnings is more obvious as it is openly debated. The process of moving creationism from a subjugated knowledge to a cultural component of a widely-discussed discourse surrounding education and religion reveals how underestimated influences on culture and belief can move from the “subjugated” to the political. Again, this movement from an undercurrent to a broad public/political discourse is one of the key objectives of this analysis: that is, to evaluate current discourses on breast cancer causation and find mechanisms through art and literature for further and more open discussion and awareness regarding the same.

This activity of genealogy relies upon the gathering of what Foucault refers to as “subjugated knowledges,” which are:

. . . a whole series of knowledges that have been disqualified as nonconceptual knowledges, as insufficiently elaborated knowledges: naïve knowledges, hierarchically inferior knowledges, knowledges that are below the required level of erudition or scientificity. And it is thanks to the reappearance of these knowledges from below, of these unqualified or even disqualified knowledges, it is thanks to the reappearance of these knowledges: the knowledge of the psychiatrized, the patient, the nurse, the doctor, that is parallel to, marginal to, medical knowledge, the knowledge of the delinquent, what I would call, if you like, what people know . . . at a local level . . . that made the critique possible.

You might object that there is something very paradoxical about grouping together and putting into the same category of “subjugated knowledges,” on the one hand, historical, meticulous, precise, technical expertise and, on the other, these singular, local knowledges, the noncommonsensical knowledges that people have, and which have in a way been left to lie fallow, or even kept in the margins.

Well, I think it is the coupling together of the buried scholarly knowledge and knowledges that were disqualified by the hierarchy of erudition and sciences that actually gave the discursive critique of the last . . . years its essential strength.

What was at stake in both cases, in both this scholarly knowledge and these disqualified knowledges, in these two forms of knowledge—the buried and the disqualified? A historical knowledge of struggles. (*Society Must Be Defended*, 7-

8)

I apply this methodological approach, this working critique, to breast cancer causation by privileging awarenesses, narratives, which are “low down on the hierarchy” of society, including within the various schools of academic research. While granting that academic production of knowledge is not, by its nature, an unprivileged form of discourse and inquiry, nevertheless within academia there are hierarchies of discipline, particularly when it comes to the “hard sciences,” or quantitative research, versus arts, letters, and qualitative methodologies. By proposing to engage with science through these “lower” disciplines, I suggest the possibility of moving forward a debate which all but stagnates in well-funded research laboratories: do toxins have a role in breast cancer causation? After all, linkages between toxins and cancer were widely introduced to the general public in Rachel Carson’s still-relevant *Silent Spring* (1961), but over fifty years later we are no closer to environmental regulations that acknowledge, if not direct linkages, serious enough concern to monitor and limit exposures to toxic substances. In the hierarchy of values, the right to manufacture and pump toxins in our bodies, what I call throughout this discussion “poison placement,” is more privileged than life.

Utilizing Foucault’s genealogical methodology, this study asserts that some answers to the question of causal relationship between toxins and cancer may lie not only with cumbersome scientific research and testing, but also within a variety of more fluid disciplines, including cultural studies, economics, politics, art, and feminism; thus through this integrative study I shall attempt to map out other methods for how we can think about cancer in the 21st century. By utilizing critical culture theory, and engaging with the work of artists and activists, I shall explore these “lower” knowledges for subjugated perceptions regarding toxins, and develop a way of addressing the toxic body

that invites neocolonial models of resistance. I thus advance a potentially mobilizing method for thinking differently about the impact of toxins upon individual lives, and about how poison placement exists on a continuum which renders none of us safe from literally embodying a corporate economic imperative: we shall carry toxins within our bodies, to the detriment of our health and well-being, with or without our knowledge or consent.

Breast Cancer and Environmental Toxins Today

An important premise on which my later critique is based relies upon numerous scholarly and research assessments of the relationship of breast cancer to environmental toxins. My study began with an interest in evaluating the relationship between corporations, environmental toxins, and disease, but I chose in the end to focus exclusively upon breast cancer because there is a widely-understood and scientifically-backed correlation between breast cancer and toxic body loads, including endocrine disruptors, HRT, and BPA (Stern 2015; Soto, et al. 2013; Gray, et al. 2010). Although breast cancer is understood to be several different diseases, there is now overwhelming indication that exposure to at least certain toxins so greatly increases the chances of developing breast cancer that in some instances they could be considered a primary cause (Stern 2015; Soto, et al. 2013; Gray, et al. 2010). This is especially so when we look at cancer clusters, particularly Camp Lejeune, a military base and superfund site that hosts a cancer cluster of male breast cancer so rare, it can only be caused by exposure to the same chemicals that polluted the well water: trichloroethylene, perchlorethylene, dichloroethylene, benzene, and vinyl chloride (Hardmon 2012).

Toxins accumulate in the body; the buildup can be measured. As Cranor notes, the Center for Disease Control's *Fourth National Report on Exposure to Environmental Chemicals* concludes, "No matter where people live, how old they are or what they do for a living, they are contaminated with measurable levels of chemicals that can cause cancer and respiratory problems, disrupt hormones, and affect reproduction and neurological development" (2011, 22). Most of the 80,000 toxic chemicals now manufactured and on the market remain untested. As if this weren't bad enough, the possibilities grow exponentially when we consider the number of chemical combinations that can come into contact with each other and through their interaction, create a toxic cocktail. Science has not even begun to address the problems of various chemicals mixing together in our water, our food, and our bodies. The potential for possible hormone-disrupting, carcinogenic concoctions formulating within the bodily landscape is overwhelming to contemplate (Reuben 2010; Steingraber 2001, 2010).

Linkages between casual exposure to environmental toxins and illness are widely underacknowledged through the integrated systems of capitalism, the limits of science, the military and defense industries, and public health. We have seen this before in the historical resistance of employers to admit occupational relationships between such severe illnesses as black lung, asbestosis and mesothelioma, in the tobacco industry's decades-long refusal to acknowledge and address the carcinogenic properties of smoking tobacco, and the military's sluggish and inadequate response to soldiers' complaints after returning from wars where they were exposed to chemicals or injected with antidotes never before tested on human subjects.

“Manufactured uncertainty,” is a label journalists Philip and Alice Shabecoff have coined in reference to the tobacco industry’s strategy regarding the refutation of linkages between cigarettes and cancer, utilizing such dubious methods as buying off scientists and writing skewed studies, sending an army of lobbyists with armfuls of dollars to Washington, and introducing legislation that appears innocuous but sets back environmental regulation through the creation of “paralysis by analysis” (2010, 171). These and other practices developed by the tobacco industry have outlined the corporate strategy that is still followed to this day with regard to scientific study, public information, and legislation.

Scholars have demonstrated that corporations that manufacture chemicals and put them on the market may profit to the detriment of human health and longevity (not to mention “lower” forms of life such as animals, plants, soils, etc.) (Cranor 2011; Shabecoff 2010). Through the distribution of toxic exposure these corporate boundaries effectively do not exist, or exist inside our very cellular structure. Monsanto is present in our blood: if we are what we ingest, then we are Monsanto. In the President’s Cancer Panel Report dated April 2010, Sandra Steingraber states: “we have sprayed pesticides which are inherent poisons . . . throughout our shared environment. They are now in amniotic fluid. They’re in our blood. They’re in our urine. They’re in our exhaled breath. They are in mothers’ milk” (National Institute of Health 2010). And in an era when what the “founding fathers” meant trumps any kind of reasonable development in the realm of political thought, Rachel Carson’s simple statement in *Silent Spring* should nevertheless appeal: “If the Bill of Rights contains no guarantee that a citizen shall be secure against lethal poisons distributed either by private individuals or by public officials, it is surely

only because our forefathers, despite their considerable wisdom and foresight, could conceive of no such problem” (1962, 12-13).

Many people see and sense when the cancer numbers in their community are uncomfortably high. They can smell bad air or water, know they live in a polluted environment, and avoid swimming the rivers or eating the fish that come from them. When they or family members become ill, many wonder if it isn't the water, the occupational exposures, the daily ingredients. An organic awareness that health may be compromised by exposure to toxins has been, historically, subsumed, banished to the arena of the “subjugated,” even where it seems quite reasonable to admit that toxins are . . . toxic.

For decades we have been taught to accept the presence of harsh chemicals in our daily lives; however, given that the bulk of these toxins are compounds developed in laboratories dating only from the mid-twentieth century forward, it is reasonable to conclude that most of these substances are not necessary to live a safe and satisfying life. However, they have been made to be indispensable as a result of the development of the petroleum, nuclear, and military industries and their intrusion into all aspects of our daily lives. Through this cultural chain of command, we have come to deny our senses, trusting that the government is looking out for our safety, when in fact toxins have been generally untested and put on the market for decades. How have we come to accept that chemicals we live with everyday are safe, that the chemical straighteners we put on our hair, or the sunscreens we slather on our bodies, or the antibiotic soaps we scrub our hands with, all bearing unpronounceable and hard-to-recognize words on their labels, are safe to use?

Because too often they are not, as we later come to discover when studies reveal the toxic risks (Lefebvre 2012; Uter 2014; Monakhova 2013).

Science, in fact, has had great difficulty in proving causal relationships between cancer and toxins, because of the nature of scientific inquiry. There is an irony here. Science is, after all, placed at the top of that hierarchy of knowledge that Foucault identifies. As Donna Haraway, Sandra Harding, certainly Foucault, and other critical science studies scholars have noted, science is also a power-myth that has dominated socio-biological discourse, privileged in its myth of an objective ideology that admits no intrusive qualitative inquiry (Haraway 1991; Harding 2008; Foucault 1994, 2004). With assertions of objectivity and exactitude (other forms of knowledge are *not* an “exact science”), scientific methodologies and natural laws have long trumped anything as ridiculously unquantifiable as a subjective experience. And yet science is unable, unqualified really, to take advantage of the wisdom of subjugated knowledge, unable to confirm what people often intuitively already know. This gives the impression that science is frequently engaged in the practice of studying what is plainly apparent. There are several reasons why this is so.

One has to do with the nature of the scientific method. It is now ethically impossible for studies to be designed that would deliberately expose humans to potential carcinogens (a recent development), and yet studies performed on animals may be dismissed as inconclusive because of genetic difference. Issues of dosage, timing, age at time of exposure, length of exposure, varying and multiple exposures, are just some of the variables that are difficult to factor into a controlled environment (Cranor 2011). Cancer itself is a complex and difficult-to-understand phenomenon of cellular mutation

that occurs under a variety of triggers, some of which are presented by the individual, as with the BRCA1 and BRCA2 genes. But we can expose a room full of rats, all with the exact same genetic background, to the exact same toxins, for the exact same length of time, and some will get sick right away, some will get sick later, and some will never get sick at all. And the types of illnesses they get will differ as well. Although cancer research is well-funded and has made many significant inroads, cancer remains a mysterious and baffling disease.

Summary of Chapters

The application of Foucault's practice of archaeology in the evaluation of discourse runs throughout my analysis, but it is possibly most evident in Chapter 1, where I overlap current thinking on place and space with a long-standing cultural narrative regarding the body as landscape. In doing so, I also explore narratives of scientific neoliberalism and juxtapose this with discourses surrounding biopower and the body, necropolitics, and colonization. Building upon Mbembe's notions of the "industrialization of death," I engage with Melinda Cooper's *Life as Surplus: Biotechnology & Capitalism in the Neoliberal Era* (2008), as she demonstrates the relationship between neoliberal political economy and the development of a biotech industry with seemingly limitless opportunities for innovation, growth, investment, capitalization, and social control at the molecular level. Relying upon Cooper's assertions regarding the free market and its "inward turn" toward the unlimited investment opportunities inherent within the realms of the microgeographic, I find that narratives about inner space and its ability to be exploited for profit already exist, and propose an adjustment in how we think about geography, place, space, and the body to allow

parallels between external environmentalisms and the “internal” or “inward” pollution of the body. I suggest that theoretical models that have already been useful in discussing traditional geographies may be just as relevant when transposed onto the micro-landscape of the body.

David Harvey, in *The Condition of Postmodernity: An Enquiry Into the Origins of Cultural Change* (1990), introduced his concept of space-time compression as a key component of the postmodern era. According to Harvey, “a strong case can be made that the history of capitalism has been characterized by speed-up in the pace of life, while so overcoming spatial barriers that the world sometimes seems to collapse inward upon us” (240). This verbal imagery of an inward collapse, as alluded to by both Cooper and Harvey, will support my suggestion of an evaluation of the spatial which turns to the micro-world of biotechnologies and politics, no less a cultural landscape.

I also work with Doreen Massey’s evaluation of place and space, particularly her article “A Global Sense of Place” (1994, 146-156), where she argues for a redefinition of place as a point of locality with global connections. I suggest that “place” can also be adjusted to scale; contaminants of the body are someplace—they are within us. Utilizing such Marxist and feminist theories of place and space, which define these concepts as locations of social relations, we can then break down the social relations inherent within the toxins that flow through our bloodstream: the politics of the biosphere.

From here, it is an easy jump to make parallels between the colonization of an earth-based landscape, and the colonization of the micro-landscape within the human body. Postcolonial theory can be of central importance with regard not only to issues of locality, but also to a broader understanding of globalization and modernity (Mignolo

2000). Thus, although postcolonialism describes the position of states struggling out of the legacy of colonization, it can also be useful inside of other contexts, specifically in breaking down systematic, cultural, and ideological violence caused through colonization, globalized capitalism and neoliberalism (Kohn and McBride 2011). As Kohn and McBride state:

Any term, whether it be “oppression,” “sovereignty,” or “power” loses its vitality and critical utility if it is applied without discretion. Yet we believe that colonization created the modern world and its ideological, political and economic legacies still influence international and domestic power arrangements. In a world of unequal resources, colonial critique and ideals of postcolonial power still resonate (120).

In Chapters 2 and 3 I focus upon cultural representations of breast cancer as a means for talking about environmental toxins and health, specifically through visual representation and memoir. Building upon the theoretical discussion of Chapter 1, I apply the idea of decolonizing our bodies through those methodologies that do not distance from the subjugated personal, anecdotal, or alternative. Chapter 2 analyzes the very recent history of breast cancer representation, providing examples of how cultural narratives surrounding the topic have been advanced through photography and art, and suggesting a means whereby they can move from the personal into contemporary political discourses about the breast cancer industry and causation. Chapter 3 examines first-person accounts about bodily illness in relationship to environment through the work of four activist women: Audre Lorde, Terry Tempest Williams, Sandra Steingraber, and

Susanne Antonetta, who believe their own serious illnesses have been caused by toxic exposure.

In *The Colonization of Psychic Space: A Psychoanalytic Social Theory of Oppression* (2004), Kelly Oliver makes use of the model of colonization to examine the psychological effects of oppression, and modalities for psychoanalytic healing. She posits that, following Fanon, “the negative affects of the oppressors are ‘deposited into the bones’ of the oppressed,” and that “colonization and oppression operate through depositing the unwanted affects of the dominant group onto those othered by that group in order to sustain its privileged position” (xix). Could these “unwanted affects” not take the form of undesirable consequences of a toxic environment, which, nevertheless, are continually manufactured and forced into our bodies without our knowledge or power to refuse? Could we not say that the deposit of these affects “into the bones” might in fact be interpreted literally, with regard to toxins introjected into the human body?

In Chapter 4, I review the current literature which explores evidence connecting exposure to toxins and breast cancer. I provide an in-depth analysis of the intersection between scientific evidence and breast cancer activism as it critiques standard biomedical practices and narratives pertaining to breast cancer diagnosis and treatment, the lack of funding for risk reduction or exploration of causal factors, dominant breast cancer paradigms, economic factors, and various strategic methods employed by breast cancer activists. Utilizing Foucauldian-based theories of disease regimes and analyzing the power dynamics between government, science, breast cancer victims and activists, I evaluate the current state of the pink ribbon narrative, looking at its ties to research funding, government, the pharmaceuticals industry and corporations that promote pink

ribbon initiatives. Breast cancer activism has recently become mainstream, but its roots go back to second wave feminism's critiques of standard western patriarchal approaches to women's medicine and the AIDS activist model that arose in the 80s. Pink ribbon culture promotes a questionable ethic surrounding cancer research and highly publicized corporate models of fund raising for breast cancer which serve their profit margin more than the breast cancer research they purport to fund. I also examine how the pink ribbon movement focuses upon breast cancer research for "the cure," a marketing narrative that deflects interest and dollars away from studying causes and cancer prevention, which have the dangerous potential of requiring product labeling (King, 2006).

I also explore evidence of toxic exposure and cancer causation relative to how people understand and relate to disease clusters, and what they feel these may mean with regard to breast cancer causation. Of critical importance to this discussion, the breast cancer victims of Camp Lejeune present a challenge to the discourse on lifestyle that has become the accepted explanation for breast cancer rates among women: diet, alcohol consumption, reproductive history, obesity, and occupation. These and numerous other lifestyle factors all implicate personal choices and hold harmless the dozens of toxicants that are present in the average American's bloodstream at any given time. Through these lifestyle-as-causation narratives, supported and emphasized through magazine articles, television advertising, food industry marketing, diet and wellness initiatives, and the maneuvers of pink ribbon culture, breast cancer victims are left responsible for their illness. They, and those who worry about getting cancer, are then effectively turning circles trying to keep up with the latest reports regarding lifestyle risks. (Today it is a boon to drink red wine, but next week it may be a risk factor.) The end result is we

cannot take these reports very seriously, because if we did everything “right,” we would have very few food choices, very few cosmetic choices, and very few choices for cleaning our houses. We would be unable to take employment in most workplaces, unable to rid our homes of pests, unable to use public transportation or wood-burning fireplaces, and so on and so forth. And while many well-intentioned people do make an effort to limit their exposures, it is nearly impossible to eradicate them all. Ultimately, the proposition is about as realistic as walking between (acid) raindrops. But perhaps more importantly, the breast cancer causation narrative which focuses upon individual lifestyle decisions and risks deflects attention away from those exposures that are outside of an individual’s choice or freedom.

I also explore how classic decolonization methods might be applied to breast cancer victims. In *The Wounded Storyteller: Body, Illness, and Ethics* (1995), Arthur Frank maps out a theory of self-told illness stories as decolonizing tools. He states:

Just as political and economic colonialism took over geographic areas, modernist medicine claimed the body of its patient as its territory, at least for the duration of the treatment. . . . Colonization was central to the achievement of modernist medicine. . . . The post-colonial ill person, living with illness for the long term, wants her own suffering recognized in its individual particularity; “reclaiming” is the relevant postmodern phrase. . . . Gayatri Chakravorty Spivak speaks of colonized people’s efforts “to see how the mast texts need us in [their] construction . . . without acknowledging that need.” . . . Post-colonialism in its most generalized form is the demand to speak rather than being spoken for and to represent oneself rather than being represented or, in the worst cases, rather than

being effaced entirely. . . . the post-colonial ill person takes responsibility for what illness means in his life. (12-13)

According to Lisa Diedrich “illness narratives can be read as symptomatic texts of our time” (2007, vii). Through engaging with theories of representation, this model of a decolonizing process can be applied to the analysis of breast cancer imagery, beginning not with self-story, but with the colonization of the body through representations in media, our point of reference in Chapter 2. Most recently, we have seen the promotion of “breast cancer awareness” capitalizing on the cultural obsession with breasts, as in the case of the “Save 2nd Base” fund raising initiative found on an internet porn site, or the “Feel Your Boobies” movement, both featuring images of sexy young women’s full and intact breasts. According to Gayle Sulik, these initiatives trivialize and sexualize a disease, and a disease process, that is for many breast cancer victims anything but sexy (Szabo 2010). More familiar are those images that deliver survivor-messages emphasizing the possibility of beating the disease, and the war wounds (mastectomy scars, shaved heads), displayed proudly, which defy a life-threatening and invisible enemy.

Indeed, the visibility/invisibility dichotomy of breast cancer is critical to discussions about the mobilization and value of subjugated knowledges (Casper and Moore 2009). As Audre Lorde discusses in *The Cancer Journals* (1980), unless a breast cancer victim is engaged in a course of radiation and chemotherapy, there is little likelihood that the general public will be able to pick her or him out in a crowd. This being the case, from where does the public gather its impression of the disease? From where does breast cancer visibility come?

Pink ribbon culture has done much to bring public sympathy—and dollars—to the cause of breast cancer research, but there are ethical concerns with the way it has benefited those companies that package their product in a pink ribbon. Women's diseased bodies are the mechanism for a profit-making enterprise. And in spite of the breast cancer awareness movement, far fewer people in the general population are aware of breast cancer statistics, issues of causation, environmental justice, or the nuances of a discussion regarding how those statistics are framed and presented. Images in popular media contribute to the discourse of breast cancer survival, but rarely demonstrate a breast cancer death, for example. Millions of dollars go into breast cancer research, but much less for studying cause and prevention. One offers the money-making possibility of new miracle drugs and treatment delivery methods; the other risks the creation of a regulatory mechanism that is undesirable to big pharma and the petrochemical industry.

Artists and memoirists, on the other hand, can provide new narratives of breast cancer that deal directly with some of their darker experiences including fear, despair, pain, anger, confusion, spiritual questioning, and environmental degradation as a metaphor for illness. Self-story, whether through visual arts or written text, is an important tool in confronting an unwanted identity, and a decolonizing method. Utilizing theories of storytelling and self-creation, we can explore ways in which cancer patients present subjugated knowledges that confront illness identities foisted upon them, the transition from “personhood” to “patient,” biomedical discourses that don't acknowledge toxic exposure, and industries silent about their complicity in polluting the biosphere with no regard for human health. Maintaining the model of “decolonizing the body,” implementing decolonization methods in the realm of a middle-class North American

hospital scene can bring radical opportunities for opposing discourses of illness that project disempowerment and victim status upon bodies that have been damaged through poison placement.

Contemporary mainstream breast cancer narratives too rarely acknowledge the possible role of environmental toxins in the development of the disease. We are constrained by our stringent reliance upon a scientific standard that is very difficult to prove. Those who step outside of science in order to engage in a narrative of toxic causation are seen to reside at the periphery of the discussion, immersed in emotional or fantasy suppositions and anecdotal evidence closely situated with the realms of folklore, paranoia, imagination, desperation, fear, or political agendas and propaganda. While science is engaged in a process whereby the mistakes of prior scientific inquiry are improved upon with remodeled questions, methods, and technologies, anecdote and folk wisdom are not acknowledged for those occasions when they are revealed to possess an inherent truth or logic. Subjugated knowledges and folk wisdom continue to fascinate nevertheless, because while they are less than scientific in methodology, they point toward understandings that lie outside of the frustratingly omnipotent and frequently impotent status quo.

I suggest that rather than fully dismissing the emotional stories of those who intuit a connection between their families' health and a poisoned nature under the dismissive labels of "ecofeminism," or "essentialism," we instead look for ways to call forth more of these kinds of narratives, from women and men. Jerry Ensminger is the powerhouse behind the move to force the government to address the illnesses that marines and their families contracted as a result of being stationed at Camp Lejeune; the driving motivation

behind his tireless efforts was the death of his daughter to leukemia. We need to see, and gather momentum from, the connections that people in their inmost hearts are making without automatically dismissing these as merely sentimental, merely grief.

In the following pages, by engaging with debates on economics, biotechnology, space and place, environmental health and the breast cancer activist movement, as well as representations of breast cancer, women, and the environment, I see the beginnings of a new model of cancer which foregrounds cause rather than cure, and places breast cancer politics inside an adjusted framework of a new colonization story. Through examining and privileging breast cancer narratives coming from a variety of sources, subjugated knowledges and mainstream alike, I suggest that science may not be the sole or even primary place from which to do battle with a disease that is enhanced rather than challenged through a neoliberal corporate and colonial economic ideology. In framing the toxic body as a human rights violation, we may propel the argument in favor of the precautionary principle, strict regulation, and other mitigating actions, in a way that protects lives over profits, and does not wait for science. We must learn and practice the process of decolonizing our bodies ourselves.

Chapter 1
Colonizing the Body: Neogeographies,
Neocolonialisms, Neoliberals

The inclusion of bare life in the political realm constitutes the original—if concealed—nucleus of sovereign power. It can even be said that the production of a biopolitical body is the original activity of sovereign power. In this sense, biopolitics is at least as old as the sovereign exception. Placing biological life at the center of its calculations, the modern State therefore does nothing other than bring to light the secret tie uniting power and bare life, thereby reaffirming the bond (derived from a tenacious correspondence between the modern and the archaic which one encounters in the most diverse spheres) between modern power and the most immemorial of the arcana imperii.

--Agamben, *Homer Sacer: Power and Bare Life*

We are perhaps now seeing the emergence of new forms of colonialism, outside the frame of intelligibility of modernity . . . one could understand colonialism to designate forms of dispossession and subjugation founded in the homogenization of a centre, an origin, a sovereignty or a world-view; when they all combine in one form of rule, one has the total or pure form of colonialism.

--Couze Venn, *The Postcolonial Challenge: Towards Alternative Worlds*

This is a work of imagination, supported by science and social science, and formulated through looking at one thing and finding patterns of similarity to another. It is developed out of an interdisciplinary inquiry which, at the most fundamental level, seeks linkages between unlikely partners. It consists largely of creative insight constructed from relevant and meaningful patterns of human thought and activity across disciplines, dimensions, and spatial geographies, and these points of heightened activity are trusted

and worthy of attention precisely because they repeat across time and space. Taking one subject or perspective, and laying it like a transparency over another, and then another, and finding the places where these all intersect, and pondering how these intersections have significance, is the practice and methodology of what follows in this chapter. It is in the process of analyzing the significance of these interstices that the imagination does its work: questioning, exploring, and positing. These interpretations are not presented here as truths or answers, merely patterns that suggest correlations and, because of their repetitive appearance, are unlikely to be arbitrary.

This is also a call for action. The critique leveled at the intractability of “hard science” is equally applicable to the slow-motion quest for precise and uncontested proof of patterns and linkages as they relate to breast cancer and environmental toxins. By studying the mechanisms of neoliberalism—including the narrative framework upon which it is built, its systems of communication, the deployment of doubt, and the corporate funding of scientific research—the clear conclusion is that it is time to *reject the rejection* of subjective and qualitative methodologies as the foundation for action and resulting patterns of experience that *can* be measured. Cancer clusters provide a good example of how this can be achieved: measure how many cases arise in a given area, collect information on toxic exposures in that area, review research regarding these toxins and their impact on biological life, gather the medical/personal stories of the people who are experiencing symptoms, and evaluate the relationship between all these factors. Where there is doubt about safety, there should also be caution, and the burden of proving nontoxicity should lie with the profiteer, not the environment and human biosphere. This is the basis of the precautionary principle, as practiced in Europe, and as

posed by United States health care providers, public health specialists, scientists, researchers, environmental activists, and risk theoreticians. It is not anti-science in the popular meaning of the term, but instead privileges safety, quality-of-life, and subjectivities of experience over corporate profit, corporate-sponsored science, and manufactured doubt (Oreskes and Conway 2010; Shabekoff 2010).

In support of the precautionary principle, it is also time to establish new and more relevant ways of speaking to the public about toxins and cancer. People with cancer are battling not just the unseen cancer within, but the unseen structure that supports cancer-causing mechanisms – much of it deliberately obscured and unreported. Science is slow to determine a cause-to-effect relationship between toxins and most types of cancer, but studies reveal there is much data to support suspicion and concern. It is also known that our bodies carry dozens of systemic chemical toxins without our knowledge or consent. Framing this toxic invasion in new terms has the potential to combat the entrenched agenda of silence and invisibility, but it involves changing how we have been taught to think about toxic exposures and cancer, and creating an appropriate dialogue to go with it.

The fundamental methodology in making this shift is the application of “sense.” Sense, as opposed to common sense which is linked to acculturation, allows humans to survive in a dangerous world by looking for patterns, assessing dangers, and feeling instinctual awarenesses while mitigating risks as much as possible. The use of our sensate faculties while negotiating our lives, and life itself, is so basic, so simple, that it lacks a grand cultural/philosophical/theoretical discourse (although it may contribute to several). And yet *separation* from this fundamentally human process of survival is *foundational* to

government, corporations, economics, and global actions. Ultimately, humans have become unable to protect themselves from these entities because in order to survive economically, threats and impingement on daily life and well-being must be tolerated. How else to explain why no one turns and runs upon entering a big box store with its aromatic effervescence of toxo-plasticity? Or workers' willingness to labor amidst fumes, pesticides, herbicides, and other "human-icides"? Or, as has recently happened in West Virginia and Michigan, consume water visibly contaminated with toxic chemicals? (Goodnough et al. 2016; Davenport and Southall 2014; Whelton 2015). Necessity allows the senses—the fundamental method and means of survival as a human being—to become separate from normal behavior because it is essential to the current political and economic landscapes. We have taken leave of our senses, and we must fervently and diligently seek to regain them because this purposeful oblivion is killing us.

In this chapter I outline a simple story that nevertheless involves the complexity of stacked transparencies from geography, political economy, theories of place and space, environmental studies and colonial theory. As a theoretical model it is not particularly radical, yet it opens up new opportunities for understanding and mobilizing against a literal invasion within our bodies. Utilizing assumptions and facts as building blocks from which we can reach a reasonable conclusion, the story goes something like this:

1. The geographical discipline and study of "place" can be understood to be relevant regardless of scale, and we can use geographical concepts and theories of place and space to talk not just about what lies on the exterior of the physical body, but also of the microgeography within.

2. These microgeographies are now contaminated, without knowledge or consent by the host, with toxins which are known carcinogens and that *may* cause cancer, *do* cause cancer, or *increase the likelihood* of developing cancer. These toxins have been knowingly “placed” there by profit-driven producers.

3. Colonialism is the enforcement of a system for the exploitation of resources upon a person or place without consent, and for the purpose of enriching the colonizer. This includes the concept of biopower, how it functions several decades after Foucault first introduced his theory, and the form of biopower the “sovereign” state now holds over human life and death. Poison placement is another iteration of colonization, much as neocolonialism was before it.

4. Neoliberal politics is a contemporary development of colonial history, and the neoliberal agenda is predicated upon need for an absence or eradication of boundaries across geographic space. The field of biotechnology provides the perfect, boundary-free ground for advancement of a neoliberal/neo-colonial economy *as long as humans do not claim it for themselves and fight back*.

5. We can and should understand this invasion of our bodies by corporations as a process in the colonial continuum and recognize that it enriches the colonizer and depletes life expectancy, quality of life, health and well-being of the colonized.

6. Through understanding that the bodies of citizenry are being exploited against their will without knowledge or consent, and advocating for reclamation of boundaries down to the cellular level, work can begin against these forces through the deployment of decolonizing methodologies.

Body as landscape

I want to briefly remind that, extending back into ancient times, humans have created, passed down, and honored landscape narratives on the symbiotic connection between earth and body, using visual similarities to understand our reliance upon nature for orientation and sustenance. The body-as-landscape/landscape-as-body metaphor works reciprocally, whether we are using body parts to measure the world (the development of the “foot” or “cubit”) or seeing outward forms as macrocosms for human shape (e.g. the mountain range called The Grand Tetons or “large teats”) (Porteous, 1986; Tuan, 1978).

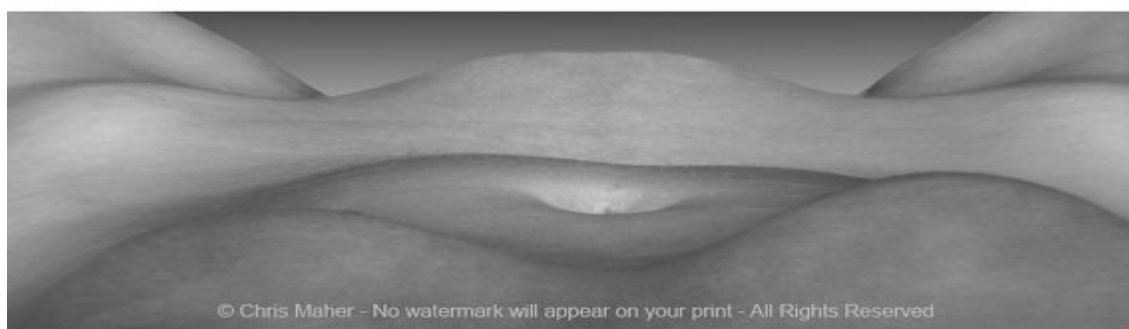


Figure 2. “Venus Landscape,” by Chris Maher. Dreamsofthegoddess.com. Accessed April 2, 2015. https://www.etsy.com/listing/221374456/5368-venus-landscape-elegant-bw?show_panel=true.

Artists have explored visual equivalencies between the shape of the human body and landscape, images that invite deeper thinking into shared theoretical, philosophical, and corporeal realities. In 1925, Edward Weston famously created photographs that fool the eye into seeing a geographic landscape instead of a nude. This metaphor and visual slight-of-hand has been re-enacted by photographers many times since. On his Etsy.com web page, photographer Chris Maher expresses surprise at the failure of many people to identify his images as belonging to humans, rather than surreal landscapes (Maher n.d.).

When gendered, the tendency to view the body/landscape macrocosm/microcosm is most often applied to the female rather than male body, in what geographer Douglas Porteous has identified as “pornotopia,” or a utopian pornographic landscape (1986). Feminist theorists such as Carolyn Merchant (1980) and Susan Griffin (1978) have explored Western thought on the relationship of humans to nature with particular emphasis on a patriarchal dominance narrative placing women and nature on equal terms. By equating women with nature, and men with reason, science, and technology, Western culture found a rationale for subverting feminine power through all of its primary institutions, and advancing the scientific revolution across the nature/culture divide. This led to the industrial revolution and the current pace of resource extraction and exploitation of planetary resources at a previously unseen depth and pace.



Figure 3. “Nude.” Photograph by Edward Weston, 1925.



Figure 4. Photograph of the Paps of the Isle of Jura, Scotland. Stock photo, Alamy, for *The Guardian*, September 6, 2006.

The concept of a landscape within a molecular/biological description is commonly used by epigeneticists. Conrad Hal Waddington coined the term “epigenetic landscape” in 1941 to describe the process for development of an embryonic cell (Pickersgill 2013; Huang et al, 2011). At the time, his work was speculative (Esteller 2011), and he found the image of a cellular landscape to be the best means for describing the concept. The visualization is of a cell metaphorically rolling down a mountainside across varied terrain. The construction of the terrain determines which path the cell will take, resulting in its ultimate expression. The determining factors in Waddington’s model include embryonic induction (a set of processes that initiates cellular differentiation) and homeotic genes (which determine an organism’s anatomical makeup) (Slack 2002).

Today, researchers believe certain toxic exposures can be a part of this epigenetic landscape, meaning that environmental toxins exposed to one generation can result in

mutations in subsequent generations, particularly to the DNA repair process, and may be key to understanding the development of the “breast cancer gene” (Esteller 2011).

Epigenetics is on the fast-track of breast cancer research (Esteller 2011; Huang et al. 2011), and one groundbreaking study by Michael Skinner’s research lab at Washington State University reported finding that exposure to endocrine disruptors in rats (in his study this was the pesticide methoxychlor and the fungicide vinclozolin) has led to changes in gene expression to the fourth generation (Skinner and Anway 2005; Anway et al. 2005), resulting in male infertility.



Figure 5. Painted by John Piper, this image was the frontspiece for Waddington’s book, *Organizers and Genes*, Cambridge: Cambridge University Press, 1940.

This image, developed to describe the process whereby stem cells create new cells with differing properties, relies upon Waddington’s original explanation of an epigenetic landscape, adding the geographic concept of “tectonic plates” to describe conditions

which affect how the cell will ultimately be expressed (Graf 2014). Here we see where environmental factors are included in the process of epigenetics, In this case as they may affect the development of rhumatoid arthritis.

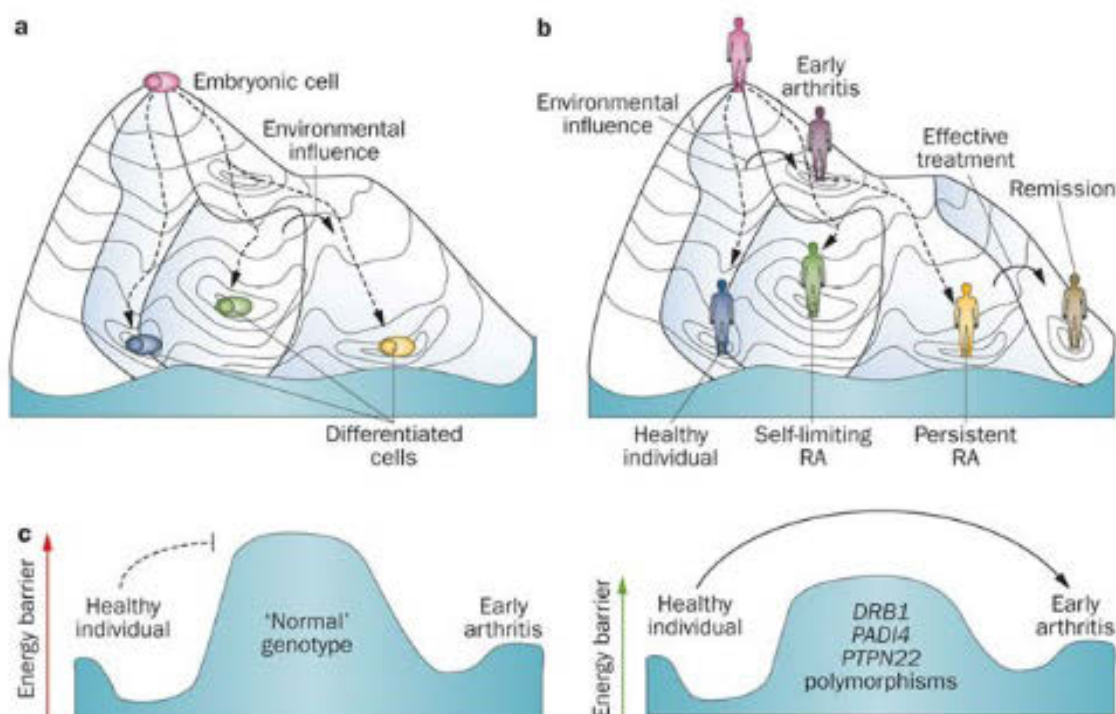


Figure 6. Grabiec, A.M. and K.A. Reedquist (2013) *The ascent of acetylation in the epigenetics of rheumatoid arthritis* Nat Rev Rheumatol. doi: 10.1038/nrrheum.2013.17

The place within

In the pulverized space of postmodernity, space has not become irrelevant: it has been reterritorialized in a way that does not conform to the experience of space that characterized the era of high modernity. It is this reterritorialization of space that forces us to reconceptualize fundamentally the politics of community, solidarity, identity, and cultural difference (Gupta and Ferguson 1997, 37).

Reterritorialization comes in response to a fundamental reality: if the CDC were to test your blood today, it would find approximately 200 different kinds of chemical toxins in your system (Cranor 2011; Reuben 2010; Steingraber 2010; *Fourth National Report on Human Exposure to Environmental Chemicals* 2009). Chemical manufacturers and corporate polluters are making money off of the production, marketing, and deployment of these toxins, and these same organizations have ensured an absence of meaningful regulation which would require significant testing by a neutral third party for hazards to health and the environment. Thus, within our bodies lies the tangible, measurable, *physical* presence of multiple corporate, industrial, and military interests. This poison placement has been imposed, trespassed, taken root, and colonized upon the territory within the human body. The body's interior has been studied and mapped for centuries, but is not commonly visited without various mechanical and computerized equipment, and is therefore out of "sight" –and thus out of mind.

The title of this section may inaccurately use the word "within," because in speaking about our bodies, it is erroneously assumed that the skin provides a boundary between the inside and outside. Current queer and feminist theories about the construction of identity contest these notions of the self as fixed within the personal body, as do certain psychological and philosophical ideas about the illusory aspect of a sense of personal self with dualistic boundaries (e.g. within/without). This is also seen in recent thought in anthropology and geography regarding boundaries, location, and globalization. The history of a generally-accepted or "common" sense of our bodies and awareness of the world "out there," with our eyes looking from the "inside" place we cannot see, is equally limiting and inaccurate. "Place" is not just a point outside of us and our skin-

boundary (a perspective that should be rejected as soundly as the notion of “self” being defined by outward appearance and the trappings of gender, physical modifications, skin color, etc.). Place is an allocation, a setting, a physical moment, and in no way limited by the thin membrane of cells known as skin.

Abandoning within/without as it pertains to our bodies means that we can utilize certain fields of study that were formerly limited by common notions of exteriority, interiority, or environment. Because geography concerns itself with terrain, it is interesting and useful to apply certain theories of place and space in landscape to the physical “interior” of our bodies. It may be difficult to envision our insides as containing “space”—locations of nothing surrounded by particulates—but this is the state of all matter. “Place” is simply a point containing a greater concentration of matter and having a correlative location and spatial definition.

Reterritorialization of space, place, and the body, as outlined above, is firmly grounded in the work of those schools of Marxist and feminist geographers who have argued that place is incorrectly understood as local-specific, self-standing and benign. They instead define it as mutable, and affected through multiple channels by larger cultural and economic forces (Harvey 1990; Harvey 2005; Massey 1994; Rose 1993). Doreen Massey specifically argued that a “sense of place” is not merely a reactionary response to change, but rather is affected by the variety of influences that are brought to bear upon it, running as networks that link it to other places on a global scale. Our failure to perceive these connections and let go of the prevailing concept of place as limited, self-contained, regionally defined, is merely a matter of perspective, a thought habit more than a truth.

In this interpretation, what gives a place its specificity is not some long internalized history but the fact that it is constructed out of a particular constellation of social relations, meeting and weaving together at a particular locus. If one moves in from the satellite towards the globe, holding all those networks of social relations and movements and communications in one's head, then each 'place' can be seen as a particular, unique, point of their intersection. It is, indeed a *meeting* place. Instead of thinking of places as areas with boundaries around, they can be imagined as articulated moments in networks of social relations and understandings, but where a large proportion of those relations, experiences and understandings are constructed on a far larger scale than what we happen to define for that moment as the place itself, whether it be a street, or a region or even a continent. And this in turn allows a sense of place which is extroverted, which includes a consciousness of its links with the wider world, which integrates in a positive way the global and the local (Massey 1994, 154-55).

Just as Massey invites us to see a place, such as a town on a map, from space, but with eyes that perceive the various networks and linkages between that place and far distant locations on the map, through commerce, through communications, "social relations," etc., we can also zoom out from a particular point within the body and find these same networks of social relations acting and influencing in exactly the same way.

Following Massey's model, then, it is possible to look at a specific place within the body—a uterus for example—and examine the ways it is affected by a variety of networks which inform and establish its specificity. Biologically, affective contributors

include hormones, blood type, nutrients, the genetic inheritances toward its particular structure, exposures to STDs, viral infections, etc. But there may have also been environmental changes such as birth control devices (manufactured of plastics and synthetic hormones), toxic exposures (bleach-white tampons or spermicidal foam), food allergies and sensitivities (wheat, soy), and invasive medical procedures utilizing the latest technologies. All of these products deployed toward our model uterus were developed and manufactured under scientific controls, regulatory agencies, transportation networks, politics, economics, labor forces and capitalism, in locations worldwide. Thus, this uterus is not an island located somewhere within the boundaries of a personal self, but is directly linked to and part of the social relations of a globalized planet, very much like Marx's famous example of the red coat, but the "product," and the focus now lies within the workings of a human body. And in fact uteruses are now becoming available as transplantable body parts. It is worth mentioning that the first uterus transplant in the U.S. took place February 2016, at the Cleveland Clinic; it was unsuccessful but it clearly opens up new purposes and monetary value for this highly desirable organ (for those who can afford this type of elective surgery) which can be now also be removed and installed on an as-needed basis (Kennedy 2016).

Imagine this same uterus has developed signs of endometriosis, a debilitating disease that can cause chronic pelvic pain, difficult menstrual periods and infertility, and which affects roughly 10 percent of the female population in the U.S. (Fred Hutchinson Cancer Research Center 2013). Let us imagine in this particular case, the patient's blood has been tested by the CDC and found positive for mirex, an organochlorine pesticide (having estrogenic properties) which was banned in the 1970s but is still commonly

found in soil, water, and foods, especially fatty foods from animals, such as dairy or fish (Center for Disease Control n.d.). Recent studies show that exposure to this particular organochlorine produces a *30-70% increase* in the development of endometriosis (Fred Hutchinson Cancer Center 2013). Mirex was developed in the 40s, but not manufactured for public use until 1959, by, among other organizations, the Hooker Chemical Company. Hooker Chemical Company was responsible for the toxic waste that was dumped at Love Canal. In 1968 Hooker Chemical merged with the Occidental Petroleum Corporation, and the new entity was named Occidental Chemical Corporation, also known as OxyChem. Although it eventually paid millions of dollars to the EPA for clean up at Love Canal, Occidental Chemical Corporation has paid quarterly dividends to its stockholders since 1975, has split twice, and its 2012 market cap was \$61.7 billion. Oxy's "Historical Highlights" web page states: "Occidental Chemical Corporation is a leading North American manufacturer of basic chemicals and vinyls used in products essential to *public health* and modern life. For every product it markets in the U.S., OxyChem's market position is No. 1 or No. 2." (emphasis added) This "Historical Highlights" page does not mention Love Canal.

The presence of mirex in the sample uterus means that this particular female organ—or place—is engaged in social relations with a global chemical company, and because its former product remains a part of the present environment, OxyChem has effectively, egregiously and irresponsibly exposed the place-that-is-this-uterus to a dangerous toxin. Because OxyChem has done this act without the knowledge or consent of the woman exposed, it could well be seen as trespassing upon private property and doing harm, or worse. This is precisely how biologist and activist Sandra Steingraber has

framed and perceives the concept of “toxic trespass”: when chemicals enter our body without our consent (Bill Moyers 2013). What is more, because Mirex was manufactured up until 1979, and yet continues to contaminate the environment and humanity, in addition to matters of place and space there is a component of time involved. With lengthy or even indiscernible half-lives attributed to many toxins that have been released into our biosphere since the 1940s, the poisoning that has occurred in the last 70-plus years may potentially and realistically have consequences for centuries to come. So while geographers may speak of space-time compression as a general “speeding up” of life based upon new technologies, when it comes to environmental toxins we see an expansion of time stretching out into an infinite future of carcinogenic exposures, permanently destroyed landscapes, deadly food supplies, and all manner of uncomfortable, debilitating, and fatal health difficulties.

A key difficulty in establishing legal responsibility, and therefore justice for those who are affected by the temporally-distant actions of toxic dumping, resides inside of structures of power that support a narrow timeframe, such as statutes of limitations. Couze Venn identifies these issues of temporality as specific to colonization: “Colonialism, of course, attempts to subsume the different temporalities, thus literally the different lifeworlds, within the timeframe of the subjugating power” (2006, 6). This is just one way in which chemical corporations and manufacturers are protected from having to take responsibility for “toxic trespass.”

“Colonies are similar to the frontiers” ⁱⁱⁱ

Proposed here is another model, different from that of “toxic trespass,” in that it is not engaged with notions of private or community property as much as it is with the

model of colonization. Staying within the field of geography, space, and place, consider how the phenomenon of human bodies *literally* invaded-for-profit by a global corporation matches with definitions of colonialism and neo-colonialism, particularly in relation to physical terrain, manipulating resources, and subjugating lives to the apparatus of the state—what Agamben refers to as “bare life” (1998).

The purpose of this paradigmatic shift away from “toxic trespass” and toward “the colonization of the body” is multi-fold.

1. Understanding the body as a microgeography, and that polluting the body has been egregiously unregulated for purposes of market share and profit, we can compare it with all other forms of environmental pollution. On a cellular level, the delivery of toxins within our bodies constitutes the invasion of the personal human landscape by a powerful, highly organized, foreign, and deadly force that hasn’t faced any effective defense by the invaded.

2. That colonization, with its histories and on-going ramifications throughout the world, provides a more devastating and realistic understanding of current conditions than the model of the trespass of private property, with its individualistic and neoliberal overtones. It moves away from notions of private property, and toward an emphasis upon a system of resource control and profit that has a historic context and has been well-analyzed.

3. It more accurately represents the magnitude of the stakes involved in deployment, particularly with regard to life expectancies, pain, suffering, and premature death, but also with regard to the scale at which colonization functions, the extent of the

damage to landscapes, and the enormity of the profits that have been made or stand to be made.

4. Colonization is pervasive and unregulated in part because its outcome is not accurately portrayed as a historic trajectory that can be readily understood by the public. This is especially true with regard to the science and economic structure of biotechnology/biopower, and how deliberately and pervasively toxins have been distributed into our biological landscapes.

5. Understanding the neocolonial/neoliberal corporate invasion of humankind at the cellular level as a colonizing process allows us to more effectively react to and engage with what is happening by examining *decolonizing* processes in other “macro” geographies throughout world history. This last point will be examined in greater depth in Chapter 4.

While aware of the differences between this proposed model and the classic understanding of colonialism, as well as current thinking about neo-colonialism and post-colonial studies, the outcome of this theoretical exploration has the potential to be significant on several levels. It is precisely because concepts of neo- and post-colonialism were defined and theorized when older, less sophisticated systems of colonization were transforming, that the development of another step in the trajectory is underway, which is (as Marx said about capitalism) more of a process than a fixed thing. Indeed, driven by the needs of capitalism as it becomes established within new fields of discovery, such as science and technology, colonization is following its traditional route of invading territories, quashing or mitigating resistance, and profiting from “discovered” resources. In this instance, it’s literally happening right under our noses.

Equating intentional toxic poisoning of humans with colonialism is not without precedent, notably by Foucault and his arguments about the purpose and usefulness of establishing genealogies (1975, 1976). The minor step of considering that our cellular, biological bodies, our interior spaces and places, are the locus of a colonial trajectory has already been imagined in science fiction and film (*The Matrix*), but has not extended into the domain of “common knowledge,” though it is a good fit. Compare, for example, Achille Mbembe’s discussion about colonial occupation with the evidence of the presence of life-compromising, corporate-sponsored toxins in our bloodstreams:

Colonial occupation itself was a matter of seizing, delimiting, and asserting control over a physical geographical area—of writing on the ground a new set of social and spatial relations. The writing of new spatial relations (territorialization) was, ultimately, tantamount to the production of boundaries and hierarchies, zones and enclaves; the subversion of existing property arrangements; the classification of people according to different categories; resource extraction; and, finally, the manufacturing of a large reservoir of cultural imaginaries. . . . Space was therefore the raw material of sovereignty and the violence it carried with it. Sovereignty meant occupation, and occupation meant relegating the colonized into a third zone between subjecthood and objecthood (Mbembe 2003, 25-26).

Imagine the experience of toxic exposure, illness, treatment, and death as an exercise in living within the “third zone between subjecthood and objecthood,” and consider that as a side effect of living in this zone, the corporate presence takes up residence along with the toxins.

The intersection between political rule and quality of life has been at odds since the prehistoric role of the sovereign first appeared. In *The History of Sexuality*, Foucault theorizes that a fundamental shift in the relationship between power and life defines the modern period in that we are no longer chosen for life or death by the powerful. Rather, we are forced to live in conditions which themselves determine our capacity to live, and are considered the chosen if we survive them. Foucault integrates biopower with the development of capitalism, which “would not have been possible without the controlled insertion of bodies into the machinery of production and the adjustment of the phenomena of population to economic processes” (141).

In *Homo Sacer: Sovereign Power and Bare Life*, Agamben quibbles with the distinction, arguing instead that modern life only asserts itself in a way which better reveals the ever-present relationship between sovereign power and life; in other words, biopower is not only a development of the modern age. Useful in this discussion is Agamben’s use of the term “bare life,” developed out of his thinking on Foucault, Benjamin, and Schmitt. Bare life is the aspect of natural life subject to the violence of sovereign power, or “the most intimate relation with sovereignty” (Agamben 66-7). In contemporary political life, under democracy, large swathes of a more privileged public still fail to perceive how we are locked in a relationship with a state “sovereign” who determines the extent to which we will live out our natural lives and the quality of that life.

Many forms of political activism are founded on the realization that a particular race, culture, or group’s ability to live is compromised and determined by state laws and enforcement. As Foucault has pointed out, discourses of “war” have manipulated us into

thinking the state is in fact concerned with the preservation and maintenance of all social life through the sacrifice of select warriors (137-138). But manipulation of life has also included keeping people just barely alive so that they can continue to supply labor power (139-141), as was seen in the minimal care and treatment of slaves, and is demonstrated today through immigration policies that take advantage of desperate refugees, a minimum wage that cannot sustain basic needs, or low wages for laborers in highly dangerous and/or toxic conditions.

High school civics classes do not mention this aspect of public policy. It can therefore come as a shock when people discover decisions are being made by strangers about their ability to survive, nevermind thrive. This component of biopower is particularly invisible to those who have in fact received the right of invisibility themselves; historically privileged by virtue of race, gender, ethnicity, sexuality, etc., they have the farthest to come in terms of understanding how biopower is acting upon them today just as it always has upon the “other.” It will be a shock to realize they are also subject to reterritorializing, and the removal of protective boundaries has already occurred in their bodies. This is one of the hallmarks of toxic colonization. Although it continues to move in patterns of privilege, even the privileged are exposed, sickened, dying and dead, as a result of exposure. Toxins respect no social construction, which is why we find DDT at its highest concentrations in the Arctic where it was never commercially deployed. Trade winds have done the job, moving airborne pesticides northward, just as GMO seed continues doing what seed has always done, blowing away and sometimes crossing into the farms of people who do not trust it or want it.

Couze Venn (2006) has talked about neoliberalism as a genealogical development directly supported by structures of colonization, following Foucault's work. These structures are found throughout what he terms as our current state of "Occidentalism," the totality of the trajectory of colonization, neo- and post-colonialisms, and neoliberalism.

Occidentalism is

. . . the correlation of a conceptual space, a global, world-transforming project and a world order. It is the result of the co-articulation of these three developments that together have instituted the world as it exists today, namely, the emergence of a technocratic modernity as dominant at the level of thought and practice, rational capitalism and its global implantation, and the Western form of colonialism (7-8).

In his work, he too has found a need for a "re-orientation in approach" that is "sustained by the vocabulary and lessons that postcolonial studies has already established" but which also challenges "established boundaries, disciplinary or otherwise" with the goal of "opening critical spaces for new narratives of becoming and emancipation." He identifies this orientation as the "transmodern," and says some of what drives this new need for such an orientation is developments in science and technology (1). Following Venn, the time is overripe for thinking about how contemporary neoliberal policies and practices surrounding biotechnology are not very far removed from the economics and politics of life as was practiced under traditional forms of colonization.

Neoliberalism and the biotech frontier

Recent critiques of neoliberalism and biotechnology can contribute to understanding how our bodies are being utilized as contemporary geographies of

speculation, a new type of “natural resource” that is unregulated and unpatented—Mbembe’s frontier without constraints or limits. In 1973, Foucault’s work, *Order of Things*, traced the history of a relationship between political economy and life sciences, locating its modern beginnings with Ricardo, Marx, and the science of economics, where spending the energy of a human life is tied to the production of goods and the creation of value. Identification with life energy, or “organic structure,” is thereafter in correspondence with “labor in the economic sphere” (Foucault 1973, 227; Cooper 2008, 7).

Melinda Cooper (2008) builds on this intersection between life and its economic value as resource by evaluating how neoliberal political economy has thrown off the balancing of market fluctuations required under Keynesian economics, and found opportunities for unlimited speculation in neoliberal markets. As she reminds us, the welfare state was predicated upon a contract which the people entered into and which exchanged protection of life for commitment to the state (8). Neoliberal political economics, however, locates its center not upon protection of life, but in a free, “liberal” market. For Cooper, this shift in values emerged with the Reagan/Thatcher era, and corresponds to a dramatic rise in life science markets, the “biotech revolution.”

Neoliberal politics avoids acknowledging the extent to which favoring free markets maintains the connectedness of bare life with sovereignty. Rather, it argues that it is only through the realms of speculation and opportunity that we can become free of *any* sovereign, with an emphasis upon individual freedom rather than collective. Cooper argues that biotechnology as speculation really began to take off in 1972 when a group of MIT-based systems analysts—“the Club of Rome”—evaluated current resource-economy

conditions and “gave voice to the prevailing consensus that Fordist manufacture had entered a period of irreversible decline” (15), due to a reduction of untapped resources, including geographic space, increased population, ecological failure, environmental collapse, food shortages, and the like.

Pointing out that 97 percent of industrial production, including agriculture, was dependent on such fossil fuels as natural gas, oil, and coal, the report anticipated that continued economic growth would soon come up against insurmountable limits. These limits were of two kinds, consisting not only in the depletion of nonrenewable resources but also in the steady environmental buildup of toxic, nonbiodegradable wastes. In other words, for the Club of Rome economic growth was synonymous with industrial production and would therefore end up faltering before the earth’s geochemical limits (16).

Cooper goes on to describe how futurists and policy makers, under Carter and then Reagan, therefore determined that the U.S. economy would need to be refigured away from the industrial and toward “an innovation-based economy, one in which the creativity of the human mind (a resource without limits) would replace the mass-production of tangible commodities” (18). The subsequent 40 years followed this trajectory, deindustrializing through an abandonment of heavy industry and removing barriers to corporations relocating outside of national boundaries through tax breaks, incentives, NAFTA, treaties, and other forms of legislation and deregulation.

At the same time (1970s), scientists finally discovered how to combine and create genetic material from a variety of molecules (known as “recombinant DNA”), effectively reinventing new forms of matter and life. The biotechnology market took off, blossomed

and expanded under a neoliberal agenda that weakened regulatory oversight, while paving the way for deep federal investment in biotech speculation (Cooper 2008; Wald 2012). Biotechnology was determined to provide the perfect ground for the neoliberal economy, with its lack of regulation, unlimited opportunity for creativity and financial speculation, and a virtually infinite field of resources—the molecular/genetic biome—within which to play. Limits—whether they are financial, resource-based, or regulatory—are anathema to neoliberal economic theory. Biotechnology, as an unregulated, untapped, and relatively invisible arena within which to construct new markets, provided the perfect opportunity for speculation without oversight. And this, as Cooper reminds us, is what Marx defines as the “defining movement of capital,” maneuvering to remove limits and creating new markets (25), life science being the new frontier.

A look at the history of Monsanto, the world leader in biotechnology, can provide one example of how neoliberal politics has played out in the chemical/agricultural markets. Monsanto is the corporation that has brought the earth such carcinogenic wonders as saccharine, cyclamates, DDT, PCB and the dioxin produced in its manufacture, Agent Orange, rBGH and rBST (synthetic animal hormones), Roundup herbicide, and GMO seeds. None of these materials were ever sufficiently tested for their effects upon human health (not to mention the environment) before they were marketed. Several were subsequently shown to be detrimental to human health, some quite seriously so, including artificial sweeteners, DDT, PCBs, and dioxin, while others remain in dispute (animal hormones and GMO seeds). Where testing has occurred, it has often been found to have been performed by Monsanto-paid researchers, exhibited sloppy or

deliberately manipulated execution, and results have been compromised or misrepresented (Robin 2010).

In the early 1980s Monsanto was working hard on utilizing recombinant DNA techniques into a money-making product: a seed that would grow into a plant that could resist the effects of their highly successful herbicide, Roundup. By the 1990s they were able to introduce the first “Roundup Ready” GMO seed, soybeans. As with the others of Monsanto’s products, these were completely untested with regard to their safety upon human health and the environment. The decision that they should basically go unregulated was primarily a “political one,” rather than based upon scientific data, according to James Maryanski, a former FDA official who was interviewed by French journalist and documentarian Marie-Monique Robin.

To start with, I questioned him on the instructions transmitted by the White House regarding the drafting of regulation of transgenic foods. “Basically, the government had taken a decision that it would not create new laws,” he explained cautiously. “For the FDA, it felt that the Food, Drug, and Cosmetic Act, which ensures the safety of all foods except meat, poultry and egg products, which are regulated by the United States Department of Agriculture (USDA), had enough authority for the agency to deal with new technologies. And actually what occurred at FDA was that the commissioner, Dr. David Kessler . . . established a group of scientists under my authority and lawyers, who were given the charge to see whether in fact we could regulate foods developed by biotechnology under the existing Food, Drug, and Cosmetic Act.”

“But this decision that GMOs should not be submitted to a specific regulatory regime wasn’t based on scientific data, it was a political decision?” I asked. The question made him a little tense.

“Yes, it was a political decision. It was a very broad decision that didn’t apply to just foods. It applied to all products of biotechnology,” he said hesitatingly (Robin 2008, 145-146).

By pressuring the White House, stacking the FDA with Monsanto executives, and vice versa, conducting its own research and writing its own legislation, Monsanto has effectively been able to ensure that there is little to no regulation surrounding GMO products, and especially foods. This in spite of evidence which suggests that genetic manipulation of at least amino acids can lead to illness and death—the L-tryptophan catastrophe that was caused by recombinant food supplements developed in Japan (Robin 2008). Next, it focused upon ensuring that its GMO seeds would not be appropriated by farmers utilizing the age-old practice of seed saving.

Vandana Shiva has written extensively upon the effect GMO seed and the Green Revolution had upon farmers in India, and other parts of the developing world. She writes:

The last 20 years have seen a very rapid erosion of seed diversity and seed sovereignty, and the rapid concentration of control over seed by a very small number of giant corporations. Acreage under GM corn, soya, canola and cotton has increased dramatically. Besides displacing and destroying diversity, patented GMO seeds are also undermining seed sovereignty; the right of farmers to grow their own seeds and to save and exchange seed. In countries across the world new

seed laws are being introduced that enforce compulsory registration of seed, thus making it impossible for small farmers to grow their own seeds, and forcing them into dependency on giant seed corporations. Genetic contamination is spreading – India has lost its cotton seeds because of contamination from Bt cotton, and Mexico, the historical cradle of corn, has lost 80% of its corn varieties, and these are but two instances of a significant loss of local and national seed heritage. After contamination, biotech seed corporations sue farmers with patent infringement cases. More than 80 groups came together recently in the US and filed a case to prevent Monsanto from suing farmers whose seed had been contaminated. As farmers' seed supply is eroded, and farmers become dependent on patented GMO seed, the result is indebtedness. Debt created by Bt cotton in India has pushed farmers to suicide (Shiva 2013).

In 2014 the Supreme Court dismissed a case regarding the right of small farmers to sue Monsanto when GMO seed inadvertently blows onto and contaminates their crops. Farmers who purchase Monsanto seed must sign an agreement stating they will not save and replant seed from Monsanto products, and Monsanto has successfully sued over 140 small farmers for patent infringement, and settled hundreds of cases out of court (RT 2014). In *Organic Seed Growers and Trade Association, et al., v. Monsanto Company, et al.* Supreme Court Case No. 13-303.v, the Supreme Court left intact a lower court decision in favor of Monsanto, which denied small farmers the right to sue *Monsanto* when their crops are contaminated through pollination and winds, because in a statement on their website Monsanto ensures that it will not sue small farmers if Monsanto finds less than 1% of their GMO seed on the farmers' properties. This in spite of evidence

which shows that considerably more GMO seed than 1% can inadvertently and catastrophically contaminate nearby farms which are attempting to grow organic or non-GMO seed (Murphy 2014). The twisted logic surrounding the ruling, and its failure to provide equal justice for the small farmers, demonstrates again how the biotech industry is effectively controlling the production of food, and attempting to control the effects of wind, pollination, and nature. Ultimately, as small farmers are forced out of the business due to the impossibility of fighting against GMO seed, the large seed corporations, litigation costs, and intimidation tactics, the biotech industry ensures its corporate survival at the expense of biodiversity, independent farmers, traditional food growing practices, and human health. It positions itself to be the gateway to an abundance of food, or a lack of it.

With regard to breast cancer, a similar situation developed around the availability of a breast cancer test, developed by Myriad Genetics, which had isolated and patented two breast cancer genes, BRCA1 and BRCA2. In addition to having patented human genes, Myriad also owned the patent for the test that women could take if they were concerned about having the breast cancer gene due to family history. Because Myriad owned and controlled the breast cancer test, many women were unable to access it because it was not covered by insurance and was exorbitantly expensive, due in part to a lack of competition on the market. In June of 2013, the Supreme Court ruled against Myriad's monopoly citing that the company could not patent a gene merely because they had isolated it. In other words, without making any alterations, but only discovering a naturally-occurring gene, the corporation had no right to a patent (Democracy Now 2013; *Association for Molecular Pathology v. Myriad Genetics*, 569 U.S. 12-398).

Although in one instance corporate interests won, and in the other they did not, these two Supreme Court cases point to an increase in the power and prevalence of biotechnology as a corporate interest, with a focus upon market monopolies and the control of access to products that sustain our lives—safe food and medical treatment in these cases. It is the substance of the arguments being waged which indicates the levels at which our inner landscapes are perceived as opportunities for profit.

Conclusion

As we evaluate the tiny landscapes which are the territory upon which biotechnology, the life sciences, and power are focused today, new understandings about privacy, territory, boundaries of humanity and the self, are needed more than ever before. We have long sensed and imagined relationships between the external body and landscape, and landscape and resource depletion as a means of profit making, but have failed to apply this instinctive knowledge across the microscopically thin boundary of the “outer” and “inner,” toward the geography “within.”

We can see that a *microgeographic* landscape imaginary has already been adopted by profit-making interests, that a biotech narrative supported by neoliberal theories already exists with regard to inner space, and that critics have been lagging in application of such a narrative, particularly with regard to contesting how our bodies are being used through poison placement and corporate/government control. It is easy to see where big profit stands to be made at every turn: in toxin manufacture and sale; through research funding; with the development of new chemicals; in health care pharmaceuticals and medical treatments; and in the development of new biotech companies to explore far-reaching notions of illness, treatment, and the post-human. But as we have seen with

Monsanto and Myriad, the corporate desire to control and patent life leads not toward freedom from bare life—the subjection of life to the determination of the sovereign—but rather into a more complete subjugation to the sovereign/corporate state, with its financialized manipulation of every aspect of the *opportunity* to survive (something which can only be afforded, as in paid-for) and meanwhile dismissing any ethical regard for the *right* to it. Neoliberalism as it is practiced in the biotech sphere thus leads us further and further away from the concept of freedom (life, liberty, pursuit of happiness), and brings us into a dystopia of total subjugation to the state/sovereign control over the terms of bare life.

Further, contextualizing the profiteering of the corporate/sovereign state within the cellular structure of our bodies and through a historical trajectory of colonization empowers a discourse that has been floundering under the traditional arguments of environmentalism and external landscape geographies. We know that corporations pollute the air and water, but we have failed to fully theorize how this system has polluted us and weakened, debilitated, threatened and/or terminated our natural lives. We have spoken about the diminishment of species, rivers, and ozone levels, but we are only beginning to perceive how our bodies have been sold to the highest bidder in a form of bioslavery that is as cruel and life-threatening as anything that has come before under capitalist, colonialist systems of industrialization and resource depletion.

American Studies President Priscilla Wald addressed the 2011 Annual Meeting with a call for further scholarship that would explore relationships between “biological narratives, structural and institutional racism, colonialism, the commodification of human life, and the differential valuation of human bodies” (Banet-Weiser 2012), and offered a

discussion on the corporate ownership of an individual's cells, leading us right up to a reinterpretation of colonization around issues of neoliberalism and biotechnology (Wald 2012). Citing Fanon, she identifies "the challenge to biological classification and redefinition of organic life" as "a political act necessary to decolonization" (190). In her discussion she explores the "specter of bioslavery," whereby our cells, body parts, possibly our bodies in whole, can be purchased and sacrificed to the biotech revolution in the name of scientific discovery. She concludes her essay by stating:

We need stories that situate the danger of scientific innovation in the *business* of scientific medicine, which treats bodies as commodities *now*, not in some abstract, science fictional future. And we need stories that recognize any act that contributes to these inequities as an act of violence, and that includes the thoughtless destruction of a parent of which we are all temporary custodians (202).

This essay attempts to contribute to her call for a new story, as it further explores correlations between biotechnology, neoliberalism, biopower, colonization, and bioslavery. Through linking the present reality of a human interiority—a landscape, a place—with the presence of chemicals deployed for-profit in our bodies, this new story can align with those who in the past also identified new versions of colonization and oppression under shifting conditions of modernity. We can begin to explore how our bodies are being used and abused through a corporate/legislative machine which marries chemistry and life sciences to profit, and identify how this fits in with our understanding of the past, in an effort to point out current biotech narratives on profitable opportunities and project where we are headed and what we must do in the future. We can imagine a

process of decolonization of our own bodies through specific methodologies, which begin with identification of the problem, and proceed with practices that re-empower the individual and contradict a campaign of occlusion deployed by chemical manufacturers, the military, and government entities. To call what we are undergoing “colonization” is to begin to think as radically as the biotech industry and neoliberal theorists have already done, and to align with a history of decolonization that has consistently stood for life, above and beyond any other value.

Chapter 2

Bodies of Art: Visual Representations of Breast Cancer

In his work on art and politics, Jacques Rancière places art in the role of democratizing the police state. For Rancière, “police” refers to those architectures of social formation that point to “the sensible,” a societal agreement on reality which is constantly in transformation through the process of politics. Politics and democracy, therefore, are not about systems of government, but rather are ongoing methods of breaking into the sensible, and reformulating that based on the subjectivities of a group of citizens formerly identified as outsiders. In discussing Rancière and this concept of politics as the intervention of the excluded, Žižek adds:

[I]n protesting the wrong (*le tort*) they suffered, they also presented themselves as the immediate embodiment of society as such, as the stand-in for the Whole of Society in its universality, against the particular power-interests of the aristocracy or oligarchy (‘we—the “nothing”, not counted in the order—are the people, we are All against others who stand only for their particular privileged interests’). . . . This identification of the non-part with the Whole, of the part of society with no properly defined place within it (or resisting the allocated subordinate place within it) with the Universal, is the elementary gesture of politicization, discernible in all great democratic events (Ranciere 2004, 70).

Another quote from Žižek on Rancière, opens the way to discuss what all this has to do with artistic representations of breast cancer:

Recall how, a decade ago, in the UK, the figure of the unemployed single mother was elevated by the conservative media into the cause of all social evils: there is a budget deficit because too much money is spent on supporting single mothers; there is juvenile delinquency because single mothers do not properly educate their offspring . . . Or recall how the anti-abortion campaigns as a rule put forward the image of a rich career woman neglecting her maternal mission—in blatant contrast to the fact that many more abortions are performed on working-class women who already have many children. These poetic displacements and condensations are not just secondary illustrations of an underlying ideological struggle, but the very terrain of this struggle. If what Rancière refers to as the police-aspect of the political, the rational administration and control of social processes, focuses on the clear categorization of every individual, of every ‘visible’ social unit, then disturbing such orders of the visible and proposing different lateral links of the visible, unexpected short-circuits, etc., is the elementary form of resistance (Rancière 2004, 77).

Keeping this understanding of art as a democratic process and “the elementary form of resistance” in mind, this chapter will explore breast cancer visibilities and the production of an artistic discourse around breast cancer that enfolds environmental toxins into its representation. In accepting democracy as a process whereby the voice of the excluded intervenes and establishes presence, art takes a powerfully active role in the contested terrain of not just image and representation, but in the development of a social sensible that makes up the organic evolution of human society, enfolding what was once outside of its sensible purview into new understandings and orders.

In this chapter I identify three specific genres of breast cancer visual art which are primarily organized around some idea of intervening upon our understanding of what breast cancer *means*. The “construct” *breast cancer* is broken down into numerous and conflicting social formations. “Breast cancer” has a deeply different meaning to a radiologist working in a major U.S. city than to a newly diagnosed 27-year-old Haitian woman, with much of this determined by cultural constructs: ideologies and mythologies of disease, science, technology, health and hygiene, race, economic status, access to treatment, presumptions of mortality or survivorship, concepts of blame, victimization through exposures, notions of femininity and masculinity, aging, and beauty. This chapter will not be looking at images primarily deployed as a means of rallying support for research, including all those pink ribbon marketing images. Nor will it consider medical photography, including radiation and body imaging. Instead it will specifically explore those breast cancer representations created to critique and contest notions of breast cancer believed to be inaccurate or incomplete, and oppressive to the body, psyche and spirit of those who have direct experience with breast cancer. These visual representations naturally subdivide into three major groupings: *pain and suffering*, *survivor/celebratory*, and *environmental*.

The first group incorporates images of the pain and suffering aspect of breast cancer. These include imagery of agony, mutilation, fear, death, as well as intimidating confrontations with biopower, science, and technology in ways that are frightening, alienating, and depersonalizing. These images are powerful because they shock, and it is the expectation that this shock value will penetrate the viewers’ complacencies, ignorance, or desensitization and encourage thought, action, or further insight into less

publicly-realized aspects of the breast cancer experience. “For photographs to accuse, and possibly to alter conduct, they must shock” (Sontag 2003, 81). However, as Sontag explores, this shock can sometimes turn to habituation or complacency by the viewer. There are always questions about manipulation and exploitation on the part of the photographer, and the subject of a pornographic gaze is raised as well, inasmuch as “All images that display the violation of an attractive body are, to a certain degree, pornographic” (Sontag 2003, 95). This voyeurism, which Sontag effectively argues brings humans a certain measure of gut-stimulating pleasure, also brings us to the edge of our understanding about the role of suffering, with its transformative properties so well underlying western culture through the image of Christ on the cross. Nevertheless, she argues that a more modern, secular sensibility is at work in contemporary photography that depicts suffering as something to be corrected or worked on. Complicated as images of pain and suffering are, Sontag argues that they are not to be dismissed, even as she acknowledges the effects of such works are limited by the range of human responses to the suffering of others, including sadism, guilt, avoidance, and paralysis: “To set aside the sympathy we extend to others beset by war and murderous politics for a reflection on how our privileges are located on the same map as their suffering, and may—in ways we might prefer not to imagine—be linked to their suffering, as the wealth of some may imply the destitution of others, is a task for which the painful, stirring images supply only an initial spark” (2003, 103). This sense of “only” an initial spark might be read as situating visual representation in a humble location, but we are reminded of how these sparks can ignite a conflagration. We need think only of the startling images of the civil rights movement, the photograph of Emmitt Till in his coffin, the television news reels of

police using dogs and fire hoses to attack peaceful African-American protesters, or the work of the Viet Nam war photographers and videographers, to recall how powerfully images can affect public sentiment, and ultimately policy.

The second group are what I call survivor/celebratory images. These artistic representations engage with the concept of breast cancer as a personal battle to be fought by each person individually (although she or he will do so with the support of family, friends, spiritual leaders or therapists, and health care workers). These images are less about shocking the viewer into a sense of dismay, and more focused on rejecting the oppression of illness as identity. They invoke sensibilities of triumph, courage, familial affection, identity transformed or regained, and love. Frequently these images focus on life after treatment, mastectomy or hair loss. In these images scars and bald heads function as semiotic devices for tribulation endured and overcome. Often issues of beauty and sexuality are explored. Although they may at times be shocking, the intent is celebratory, in the face of the horrific. Too, there is an aspect of “normalization” evoked with these images. That is, they encourage us to see beyond the surface of the individual, including social categories and stereotypes that are limiting, to the beauty of the person “within.” Thus, because they reject discourses of death, and focus on life in the moment, love, and inner strength, they may suggest religious epiphany or a spiritual context. They may include family members, pets, friends or other loved ones, or might appear as simple classic portraits, but will always be viewed within a context that identifies them as breast cancer *survivors* and encourages us to see that they are a) like everybody else, and/or b) brave, courageous, and beautiful. Sometimes the work of these images implies that breast cancer is common, it happens to regular everyday people all the time, it could happen to

you too. When that is an aspect of the reading, such images may do the political work of establishing a means whereby these “outsiders,” in Rancière’s analysis, are gaining in such number that they threaten to become a political force. However, this is usually secondary to the establishment of a visual discourse of strength at simultaneously facing down a deadly disease *and* oppressive cultural expectations around gender, sexuality, illness, and appearance.

The third group are those images that begin to directly confront political and environmental devaluation and degradation systems that result in toxic environments, and suggest linkages between those social systems and a breast cancer diagnosis. This group, environmental breast cancer representation, is the least well-developed among breast cancer imagery. Unlike the other two subgenres that focus on the personal impact of breast cancer and challenge stereotypical ideas about cancer in general, women’s bodies, feminine power, and biopower, photographs and other forms of visual art that fall under the environmental genre are even more directly accusatory and aggressive in their tone. In other words, they pick up where the previous two genres left off. It can be argued that the first two genres have lost some of their impact, inasmuch as they have been successful in the performance of the work at hand from the 70s to the present. Because they are so familiar to us, these genres are less shocking, less able to work in service to cultural change, and may in fact “normalize” the presence of breast cancer in a complacent way. (“Everybody’s got it.”)

If we are to maintain the spirit of these early genres in breast cancer representation, we need to move into a new frontier that is addressing what may be *causing* the effects so humanly portrayed, rather than the effects themselves antiseptically

segmented off from possible cause. The environmental breast cancer representation genre implicates toxins and the corporations that make and sell them, at a time when most all focus has been unevenly upon treatment. These images incorporate the pain and suffering, survival/celebratory aspects of breast cancer, but up the ante with questions regarding *how and why* women—and some men—are going through these terrifying and debilitating experiences, even when they have survived. For in these representations, suffering or survival of the individual is not enough. There are questions and issues raised regarding the health of the community-at-large, the planet, and our children's futures. The military-industrial complex, the cancer-industrial complex, corporate polluters, and neoliberal policies are all implicated in this kind of representational work. Although some of the work that falls into this category was created in the 1990s, this remains an emerging visual discourse that has not yet been fully realized, just as breast cancer causation and prevention remain under-scrutinized.

The reasons for this are as complex as the contested terrain the subject matter presents. Additionally, there are concerns specific to the process of making art and what inspires artists and documentarians. An artist needs to have some reason to care about breast cancer and environmental toxins beyond all of the other myriad subjects and contemporary issues that he or she might want to represent. Most of the breast cancer visual work explored below was created by people who either have the disease themselves, or were in close relationships with those who do. Frequently breast cancer victims—patient and family both—are overwhelmed by the treatment process, and the physical, financial, psychological, familial, and social upheaval that breast cancer brings with it. Thus, an artist has to be willing to allow breast cancer to also take over precious

studio space, and give it time, method, and investment as the artist explores how to represent their experience. Certainly not every artist with breast cancer will have the inclination to make environmental breast cancer representations, and those who do must also be able to muster the psychic and physical energy to do so. Obviously, one does not have to have breast cancer to be concerned about the relationship between poisoned nature and the poisoned body, but there will doubtless be more artists exploring this topic in the future.

Each of these subgenres critiquing breast cancer culture can exist simultaneously in any given work of art. Still, there is a linear trajectory of breast cancer representation among them that seems to indicate a shift in consciousness regarding breast cancer over time. Certainly they overlap; if we take the long view, we would find that changes in breast cancer representation over a 40-year period are so subtle that it could be said they belong to the same era. But the breast cancer representations from the recent past up to the present have shifted as the public has grown accustomed to seeing photographers and artists address the topic, with breast cancer representation becoming more commonplace correlative to rising statistics.

Artists frequently build off of what has gone before with regard to subject matter and method, and will also adjust their work according to what the public will allow (what was once shocking becomes *passé* and banal). If the goal of creating breast cancer representation is to motivate a casual public into concern and action, and to intervene into realms of the sensible by representing the interests of those left outside--the "non-part" in relationship to the "whole" of culture--then artists must continue to seek ways to express the full aspect of breast cancer as new developments and understandings arise. Now that

we have finally seen a positive representation of what breast cancer survival looks like, visual deployment of the even darker realities of breast cancer are the new horizon, the territory whereby techniques and symbols would be implemented visually in an effort to educate the public about an area that corporate interests would rather keep as part of the “non-part” to which Žižek and Rancière refer: linkages between environmental toxins and cancer. We are only now beginning to find artwork that suggests these linkages; there is room for much more. What follows is a tracing of this particular arc in breast cancer representation, through an analysis of some of the key iconographic images of the last four decades and how they have advanced the public discourse on breast cancer.

Breast cancer, pain and suffering

In 1978, journalist Dorothea Lynch learned she had breast cancer. In an effort to make a decision about which treatment route she would take—radiation only, mastectomy, lumpectomy—she sought out books that would help her picture the full ramifications of her choices.

I try to find out what a mastectomy looks like so I call the American Cancer Society. The woman on the other end tells me that books with pictures of cancer treatments aren't considered suitable for non-medical people. . . . Gene and I spend a cold, wet afternoon searching through bookstores in Harvard Square. . . . We find a book about cancer treatment from which I learn something about chemotherapy, but there are no pictures to show me what a woman with one breast looks like. . . . At home I pore over photographs Gene has made of me . . . “Make a picture of me now,” I tell him. If he takes a photograph today, it will show the bloody scars from the biopsy. Until a few days ago, I didn't know what

one looked like. . . . Gene sits me on one of the mattresses on the bedroom floor. The room is cold. The sun, setting behind the house next door, leaves one bar of light high on the wall. He makes the photograph (Lynch and Richards 1986, 16-17).

Richards went on to photograph Lynch's experience as a breast cancer patient, including scars, surgeries, hair loss, recovery (Figure 7); and then the visual recordings of other cancer patients' bodies. The book ends soon after 1981, when Lynch discovers her cancer has returned and the prognosis is not good. The photography project stopped as it became clear Lynch was dying, which occurred in 1983 when she was 40 years old (American Photo, 1994).

Today women know what a mastectomy scar looks like. Through books such as *Reconstructing Aphrodite* (Lorant et al. 2001), *Journal: A Mother and Daughter's Recovery From Breast Cancer* (Redgrave and Clark 2004), women are able to envision what breast cancer can do to the body. And yet in spite of the radical representation of Lynch's medicalized experience and her eventual death from breast cancer, many--perhaps most--published contemporary photographers focused upon the "courage" of survival; the affirmation of life after facing down death; the beauty of the female body in spite of its scars; and the loss of what may be the most iconic representation of femininity in our culture: the female breast. These books, among others, are found in the waiting room of the oncologist's office to prepare women for the idea of survival, reconstruction of femininity, and the preservation of self-identity in spite of bodily mutilation and illness. But there are no books in the waiting room that show death from breast cancer.



Figure 7. Photograph of Dorothea Lynch by Eugene Richards, *Exploding Into Life*. New York: Aperture and Many Voices Press, 1986.

Eugene Richards' photographs of breastless Dorothea Lynch on the radiation table as she contemplates her death are still not the first look at breast cancer that most patients are encouraged to take, and for good reason. But as any woman who has faced a breast cancer diagnosis knows, the possibility of death looms, and for some, staring down that reality is an important part of conscious living with illness: conscious dying. Richards' now-classic documentation of breast cancer and confrontation with biopower represents the early work of breast cancer visual representation in the pain and suffering genre, one that continues to be practiced by a growing cadre of artists, including Angelo Merendino, whose recent photo essay and soon-to-be-published book, *The Battle We Didn't Choose: My Wife's Fight With Breast Cancer*, follows in the Lynch/Richards tradition (Merendino

2013). Merendino's reason for creating the photo essay was to show how difficult a cancer diagnosis and treatment process can be. He states:

[H]ow can others understand what we had to live with every day? My photographs show this daily life. They humanize the face of cancer, on the face of my wife. They show the challenge, difficulty, fear, sadness and loneliness that we faced, that Jennifer faced, as she battled this disease. Most important of all, they show our Love. These photographs do not define us, but they are us. Cancer is in the news daily, and maybe, through these photographs, the next time a cancer patient is asked how he or she is doing, along with listening, the answer will be met with more knowledge, empathy, deeper understanding, sincere caring and heartfelt concern (Merendino 2013).

Surviving cancer, celebrating life

One of the first and most important photographs in the survivor/celebratory genre is Hella Hammid's photograph of writer Deena Metzger, possibly the most well-known photograph in the entire breast cancer genre (Figure 8). The photograph, taken in 1977, shows Metzger's nude, mastectomized body outdoors, arms outstretched, celebrating her life, her survival, encouraging women to focus on what is important, and overcome the feelings of shame surrounding the loss of a breast. The photograph became a now-iconic poster and includes these lines from Metzger's writing:

I am no longer afraid of mirrors where I see the sign of the Amazon, the one who shoots arrows. There was a fine line across my chest where a knife entered, but now a branch winds about the scar and travels from arm to heart. Green leaves cover the branch, grapes hang there and a bird appears. What grows in me now is

vital and does not cause me harm. I think the bird is singing. I have relinquished some of the scars. I have designed my chest with care given to an illuminated manuscript. I am no longer ashamed to make love. Love is a battle I can win. I have a body of a warrior who does not kill or wound. On the book of my body, I have permanently inscribed a tree.

In discussing the photograph, Metzger wrote:

The photograph taken of me by Hella Hammid has become known as the Warrior. Our intention in turning it into a poster was to invite the world to look at a one-breasted woman and exult in her health and vitality. An alliance with the life force on all levels resulted from meeting the illness as a messenger – it called me to change my life in ways that would show themselves to be good for me *and* for the community (Metzger 1997, 268).

What this now-classic photograph demonstrated, was a phase in the visual representation of breast cancer that began to put mastectomy, radiation and chemotherapy in terms of war and battle, affirming that women can be warriors too, “fighting back” those aspects of breast cancer and illness that affect self-identity and worth, the oppressions of a patriarchal state, and of biopower. The cost (a breast) is worth the reward (life, freedom, the biological body, sunlight on bare skin). Situated in the out-of-doors, the photograph celebrates the womanly body as something that is a part of nature, including the scars of disease, age, experience. It also redefines what beauty is, or ought to include. Her body is not representative of the fashion model ideal, her hair is wild and graying. Through the pose, we are invited to embrace her innate beauty as a creature of the natural world, and



Figure 8. Photograph by Hella Hammid, 1977. Jewish Women's Archive. Accessed April 17, 2016. <http://jwa.org/media/body-of-warrior-still-image>

her inner beauty—her joy, her thoughts as represented by her words, and the beauty of a positive approach to her disease, symbolized through her tattoo over her scar, the image of a greening tree branch, representing new life. For the 1970s, these ideas, fueled through the second wave feminist movement, confronted classical patriarchal attitudes about women's bodies, strength, power, and breast cancer as a disease of shame and embarrassment.

On August 13, 1993, a self-portrait by the artist Matuschka (Figure 9) appeared on the cover of the *New York Times Magazine*, a color photograph emphasizing classical lines of the draped female body as might be seen in the work of Greek sculpture, Edward Weston, or fashion photography, with one glaring exception: the dress she is wearing is

cut to reveal that Matuschka's otherwise ideal body is missing one breast (Amaya 2004). The photograph generated a massive response, evidenced by the number of letters submitted to the *Times* both in support of, and expressing outrage toward, the editorial board and its decision to publish the image. This photograph was part of a series of self-portraits she created entitled "Beauty Out of Damage," most of which featured her nude torso and mastectomy scar. Matuschka explains that her goal in photographing her scarred body was to represent feminine strength and power. In relying upon classical forms of feminine beauty and the execution (lighting, posture) of her medium through a method which is used to sell and celebrate a certain ideal of feminine beauty, she is critiquing those notions of beauty that do not address intrinsic worth and illness (Peterson and Matuschka 2004; Cartwright 2000; Amaya 2004).

Prior to her diagnosis, Matuschka had been an activist in other arenas, including environmentalism. In a 2004 interview she said she intended for her breast cancer photography to include critiques regarding environmental toxins and cancer, but generally her photographs do not overtly address the issue, nor does accompanying text (Petersen 2004). Her work is noted primarily for its play on issues of beauty, survival, and breast cancer awareness, an important concern in the 90s, and one at which she was highly successful in addressing. She is often cited as the first photographer to push breast cancer and mastectomy imagery into the mainstream. Her *New York Times Magazine* cover was nominated for a Pulitzer Prize, and recently included in a 2011 LIFE Magazine special issue "100 Photographs that Changed the World."



Figure 9. “Beauty Out of Damage,” self-portrait by Matuschka, originally appeared on the *New York Times Magazine* cover, 1993. Accessed July 13, 2016. <http://www.beautyoutofdamage.com/Aboutphoto.html>



Figure 10. “Classic Nude,” black and white, 35mm color film, photograph by Matuschka, 1992. Accessed July 13, 2016.

<http://www.matuschka.net/BODclassicBW.html>

Complicating Matuschka’s critique is that in every other way, except for her missing breast, her body represents a contemporary western ideal of the feminine body: white skinned, lean to the point of bony, toned, slim-hipped, with high cheekbones, a beautiful face, smooth hair. Amaya suggests, “She is *working* the Western artistic canon, she is replicating the canon to the point of (im)perfection, she is suggesting that the beauty normalized by the canon, which includes the ideas of symmetry and femininity as scarless unblemished skin, may hide the asymmetry of patriarchal society, and may hide

the scars of technology” (561). But her work has also been criticized for its appeal to white, middle class elites, its representation of breast cancer on a youthful body rather than the more predominant reality breast cancer ravaging an older woman’s (less perfect) body, and its pristine classical and fashion-based aesthetics (Cartwright 2000).

Environmental breast cancer representation

David Fox is a photographer whose life was devastated by breast cancer. He didn’t have it, but his wife did. She died in 1992, soon after her second child was born, diagnosed at a late stage, masked by pregnancy symptoms, and with almost no warning. After her death, he submitted her photograph to the National Breast Cancer Coalition photography exhibit in Washington D.C., and has subsequently photographed numerous breast cancer victims, participated in marches supporting breast cancer, fund raisers, websites, and worked closely with the non-profit Art beCAUSE, a foundation dedicated to fund-raising for research that explores the relationship between breast cancer and environmental causes. Fueled by his grief, Fox has explored breast cancer causation and is convinced that it is linked to the environment. In an interview he explains:

I got angry . . . and I wanted to do something because I felt like, well, here we are, it’s 1 in 8, now it’s 1 in 7. So why hasn’t this changed? Why haven’t we stopped this? You know? We’ve spent how much money, and how much time, and how much research, and all this other stuff, well, why don’t we have a cure yet? And I’m not the only one who feels like this. . . We still haven’t solved this yet. There has to be another answer. So Ellie began talking to me one day about environmental links to breast cancer, and it just clicked. It was, like, you know, that makes a lot of sense. I mean, here’s the analogy I use. It’s very simple. You

have a fish tank. And the fish are swimming in the fish tank. Well, what happens when you don't clean the filters in the fish tank? Bacteria builds up, all this other stuff builds up. What happens? The fish get sick, they die. Well, what are we doing about our environment? Well, we keep polluting our environment every day . . . and we're taking out all the natural filters. The trees, which filter, all the other things that are natural to this earth that work as filtration. We're eliminating all of that. What's happening? People are getting sick. It just makes sense to me (Fox 2012).

Fox has produced and exhibited two photo essays specific to breast cancer prevention. The first, "Illuminating the Survivor Spirit: A Photographic Journey," was a series of portraits of breast cancer victims and their families in the classic tradition of breast cancer survivor photographs: celebratory, defiant, battling notions of beauty, perfection, but it also expands the discourse into the realms of the ordinary, and shifts the focus away from sensationalism toward a representation of the human component/impact of the illness (Figure 11).

It is an unusual photo essay. Many of the women are wrapped in gauzy, angelic fabrics that do not reveal breasts and mastectomy scars as much as they suggest the phenomenon of the "paper dress" in the doctor's office, or the robe an artist's model wears before she begins gesture postures for a life class. The studio backdrops and inclusion of family members mimics something similar to common American family portraiture. But there are three things that render these photos important in the lexicon of breast cancer photography: the agency of the photographic subject supersedes the intention of the photographer; the inclusion of family members adjusts the notion of a

breast cancer survivor to include those who are emotionally and economically affected by their loved one's illness; and the context of the essay supports research regarding environmental toxins and breast cancer causation.

As a family member of a breast cancer victim, Fox seems to have a highly-developed sensitivity regarding the vulnerability of a breast cancer survivor and her/his family. His photographs therefore avoid any suggestion of exploitation, or the shock of aggressive imagery of genital scars implying mutilation and suffering.^{iv} Fox's agenda is to make a safe place where he and his subjects can together make photographs that represent the humanity of a person and family affected by the illness. These photographs are intended to satisfy the subjects, much as wedding or bar mitzvah photographs. The client is not the photographer, and this gives these photographs a powerful sense of agency. Thus, some women are happy revealing their scars, while others pose with family members, fully-clothed or wrapped up in muslin. It is easy to imagine that these women did pose nude, but it seems that most of those photographs were not intended for public display and do not appear in the essay. Why else would we find a woman, wrapped in gauzy fabric and with a suggestion of bra-less cleavage underneath, posing with her two fully-dressed children? These photographs clearly are meant to serve the needs of the subjects, even more than the artist or the viewer. While they are reminiscent of everyday photographs taken in the style of wedding, graduation, and family portraits, there is also a willful adjustment that serves the gaze of *the subject*, radically inverting the locus of control away from the photographer or the viewer, made evident by the variety of states of dress/undress, and decisions to include family members. The essay does feature a



Figure 11. Photograph by David Fox. From the series “Faces of Breast Cancer: A Photographic Journey.” Used by permission, David Fox Photographer and Art beCAUSE.

small number of classic breast cancer mastectomy photographs, but because there are so few, and they are mixed in with fully clothed or draped subjects, it seems that these now-classic poses are what the *women* requested. Notably, nearly all subjects are smiling, even those who are revealing their scars, and, presumably, their pain and suffering.

Possibly unintended, but no less powerful, is the aspect of the ordinary in the photographic execution. These photographs might easily appear on a staircase wall, along with family reunion snapshots and Christmas-sweater portraits. They are part of the vernacular lexicon of portrait photography and subversively, if not intentionally, suggest the ordinariness of breast cancer prevalence in our families and daily lives (one in seven women will be diagnosed at some point in their lives).

Fox's second photo essay takes a much larger leap toward re-imagining breast cancer imagery. In it, he exclusively focuses on the male breast cancer victims of Camp Lejeune, and authoritatively establishes the power and possibility of the environmental breast cancer imagery genre.

The story of the men of Camp Lejeune has been well-documented, featured in newspaper and magazine articles, in Florence Williams' best-selling book *Breasts: A Natural and Unnatural History* (2012), and the full story told in the film *Semper Fi* (2012) co-produced and co-directed by Rachel Libert and Tony Hardmon. The film tells how, in the course of discovering a massive toxic cover-up by the U.S. Marine Corps and Department of Defense at Camp Lejeune, North Carolina, it was revealed that over 80 men who had lived or worked there, either as children of servicemen or as military personnel, were diagnosed with male breast cancer. Statistically, this puts them way out of range of normal male breast cancer rates and age of diagnosis within a given

population, and provides the most compelling statistical information to date linking breast cancer and environmental toxins. Toxic exposures occurred through drinking water, included perchloroethylene (PCE), trichloroethylene (TCE), benzene, vinyl chloride and strontium-90, all highly carcinogenic (Williams 2012; Camp Lejeune Toxic Water: The Few, The Proud, The Forgotten n.d.; Libert and Hardmon 2012). These heavy toxins were allowed to be illegally dumped near the marine base fresh water wells over decades, with the full knowledge of the USMC and DOD. High incidents of childhood leukemia and cancer were common among the people living and working there, and many died as a result of these exposures (Williams 2012; Libert and Hardemon 2012; Partain 2010).

In 2010, David Fox photographed fourteen of the male breast cancer survivors (Figures 13-15) from Camp Lejeune as part of a fundraising calendar for Art beCAUSE, the non-profit he co-founded and dedicated to research on linkages between environmental toxins and breast cancer following the death of his wife. The photographs present classic tropes of breast cancer imagery found in the survivor/celebratory genre, particularly black and white portraits featuring mastectomy scars and sometimes celebratory smiles. What is new and poignant, is the appropriateness and recontextualization of the concept of the cancer warrior, particularly relevant for depicting U.S. Marines engaging in the “fight” for their lives. Thus we see men posing with their medals, or with hands up in a classic boxing posture. We also see how different the impact of a mastectomy scar on a man’s chest is from the same scar appearing on a woman’s chest, and what this suggests about concepts and issues regarding gender, nudity, and standards of female beauty and male power. The poses, which are reminiscent of classic breast cancer photographs of women, provide a certain shocking element

because the gender of the subjects is unexpected. As our eyes quickly scan the photo, we have to take a second look to notice the mastectomy scars, because flat-chestedness is expected among men. We also get a sense of how these photographs challenge notions of masculinity: these are U.S. Marines, *warriors*, with a disease commonly perceived as a woman's disease. Their scars are not from battle, but rather from the debilitating process of cancer treatment, which brings one literally to one's knees, weakened beyond all recognition from radiation and chemotherapy treatments, and plagued by unique identity issues that have chipped away at their psychological frame of reference throughout the illness process. (Many male breast cancer victims have expressed initial embarrassment or even delay in seeking treatment because they had a "woman's" disease) (John W. Nick Foundation n.d., Hambleton 2013).

There is no question these are the fewest of "the few", and, in coming out as breast cancer survivors, unquestionably brave. Braver still is their willingness to talk about how the U.S. military knowingly exposed them to highly dangerous toxins over many years, during a period of time when they were devoting themselves to what they perceived as the defense of their beloved country. The sense of betrayal among not all, but many of them, is profound (Libert and Hardemon 2013; Camp Lejeune Toxic Water: The Few, The Proud, The Forgotten, n.d.).

Thus it is not just the way in which these photographs are contextualized, as a calendar devoted to raising money for research on environmental toxins that makes them so powerful. They contest notions of a benevolent country that appreciates and protects its troops; raises awareness of our assumptions about gender, sexuality and breast cancer; reframes how we think about masculine power, courage, and strength; plays off of classic

images of female breast cancer mastectomy scars; and pushes the discourse into an accusation regarding breast cancer causation, the government, weak or nonexistent enforcement of EPA standards, and the chemical industry. Further, they represent a unique irony: the key to busting through the wall of denial regarding breast cancer causation may come from a relatively small group of men who have breast cancer, rather than from the thousands of women who are diagnosed with it every year.

These are breast cancer images of the 21st century with the power to shock, as the earlier genres did in their time, to reframe the discourse around cancer, and ignite a spark for challenging policy on environmental toxins, oversight of the military/industrial complex with regard to the environment, and the colonization of the body within our own national borders.

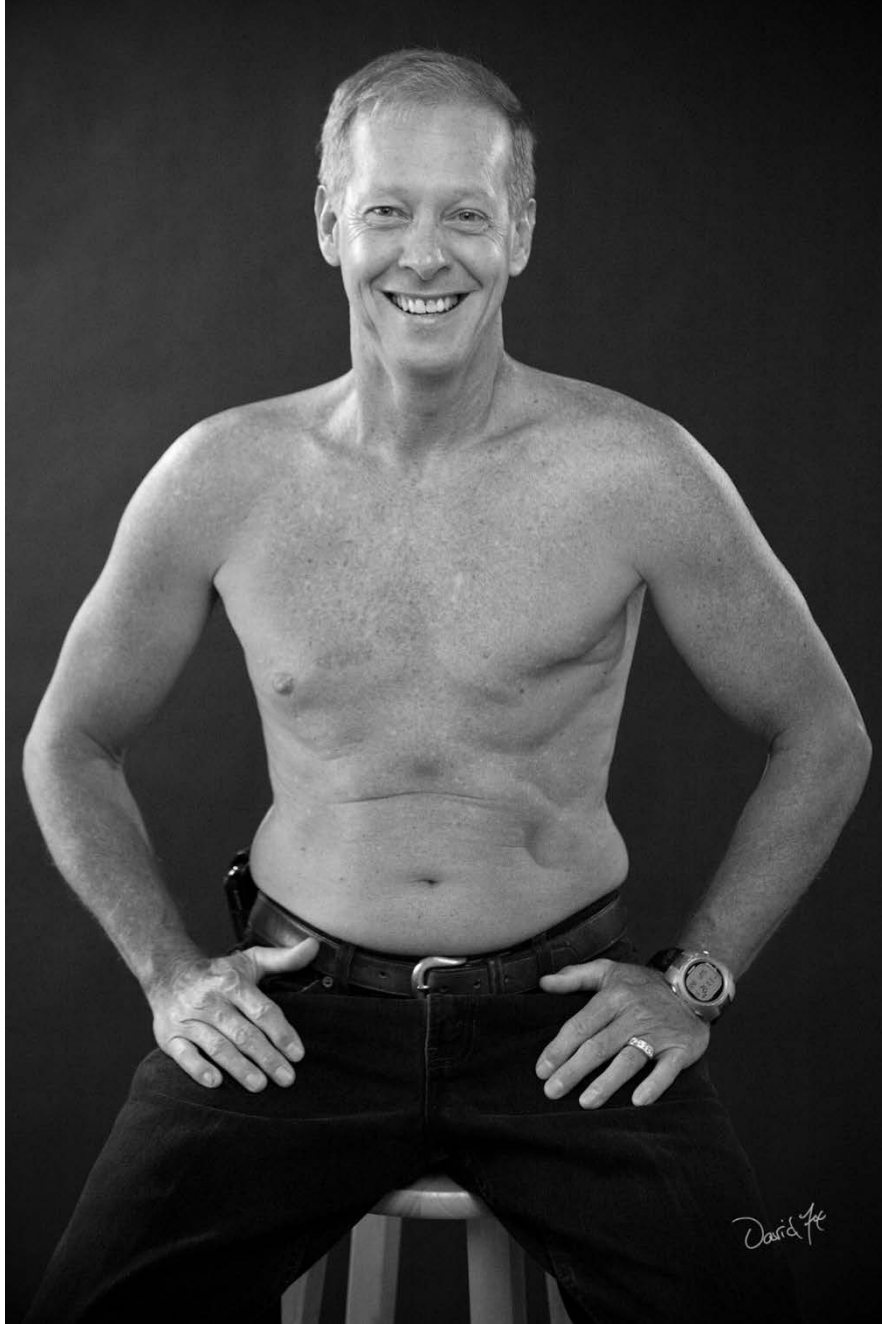


Figure 12. Photograph by David Fox. From the series “Faces of Breast Cancer: A Photographic Journey.” Used by permission, David Fox Photographer and Art beCAUSE.

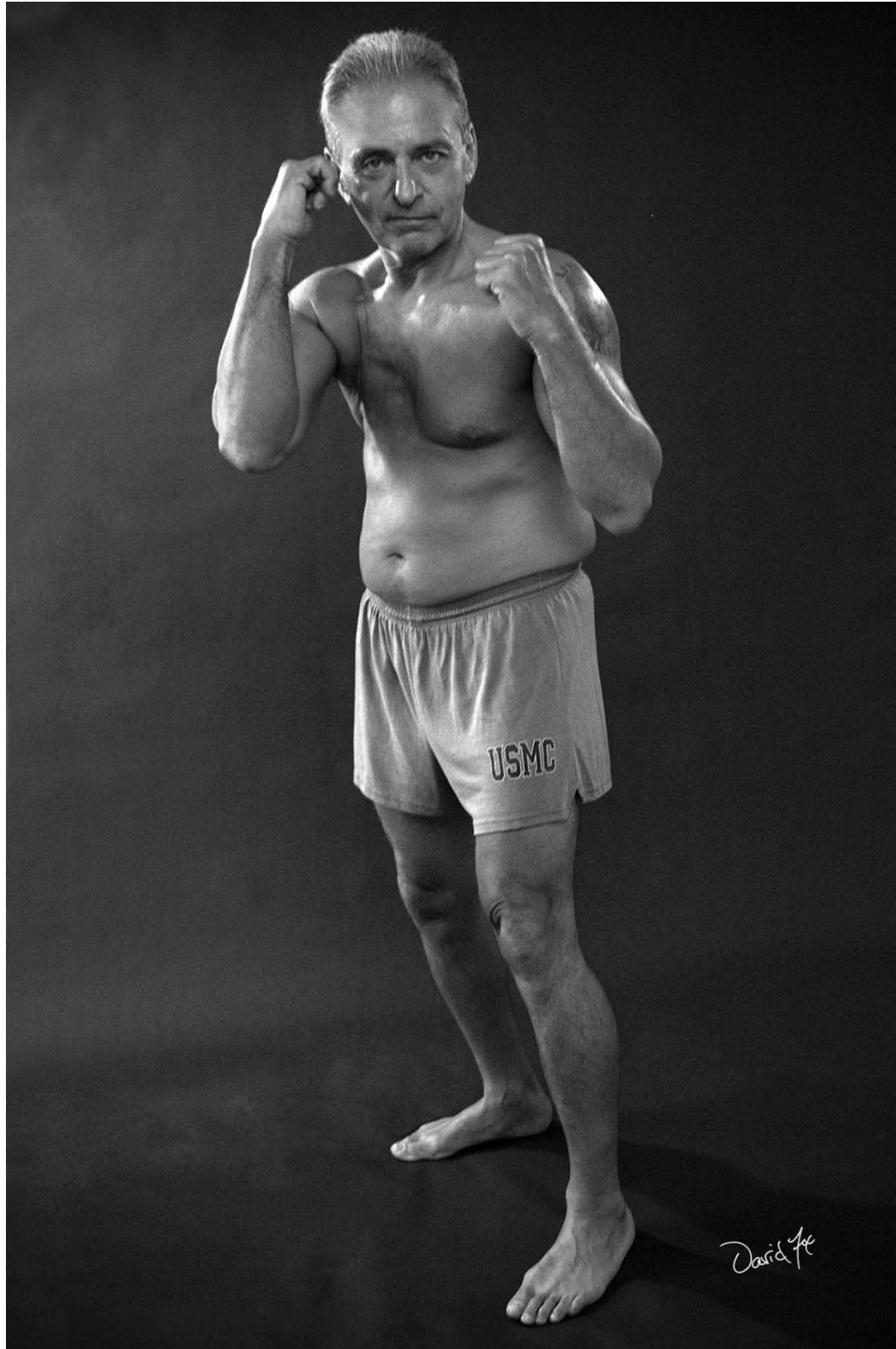


Figure 13. Photograph by David Fox. From the series "Faces of Breast Cancer: A Photographic Journey." Used by permission, David Fox Photographer and Art beCAUSE.

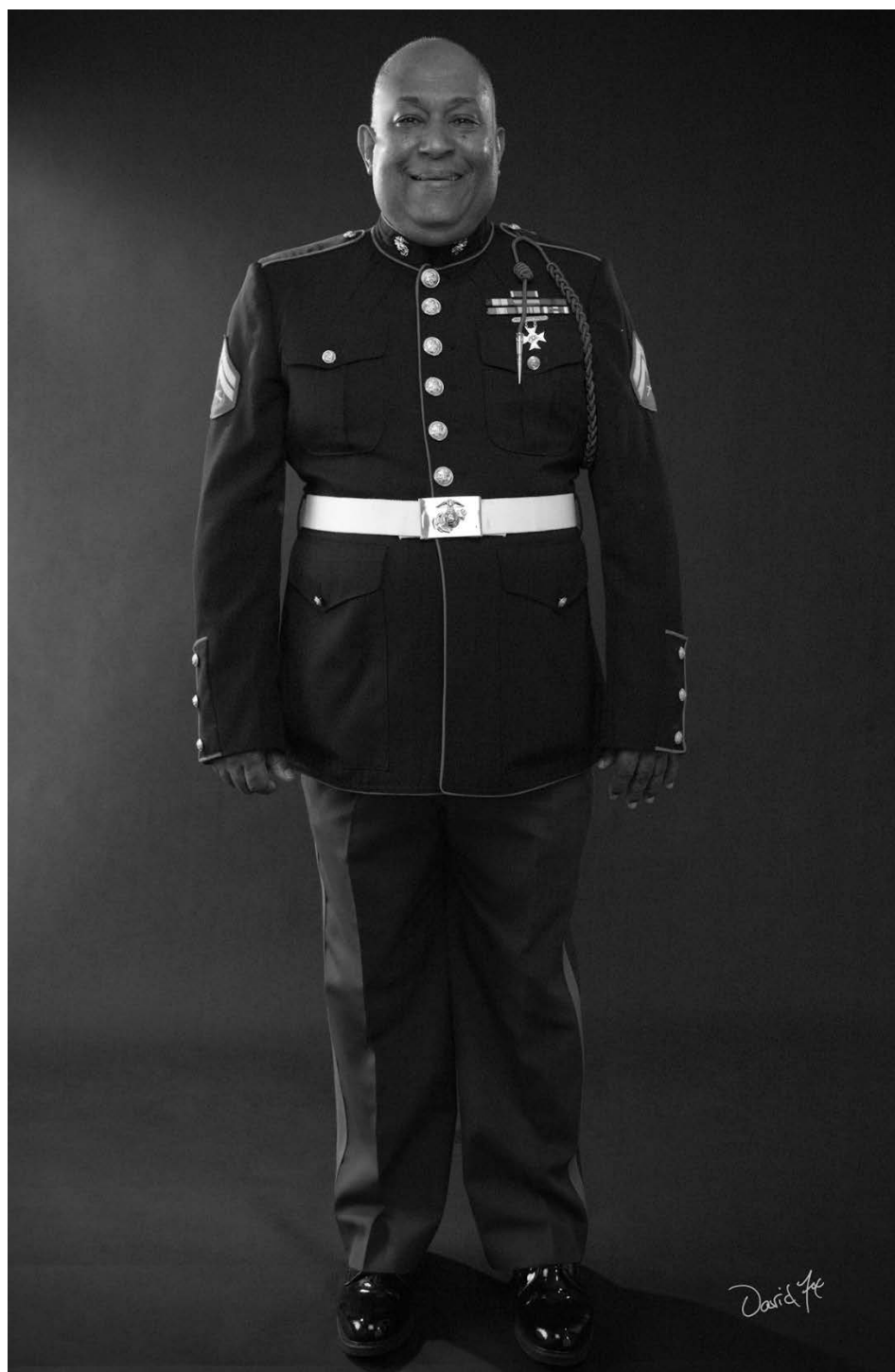


Figure 14. Photograph by David Fox. From the series “Faces of Breast Cancer: A Photographic Journey.” Used by permission, David Fox Photographer and Art beCAUSE.

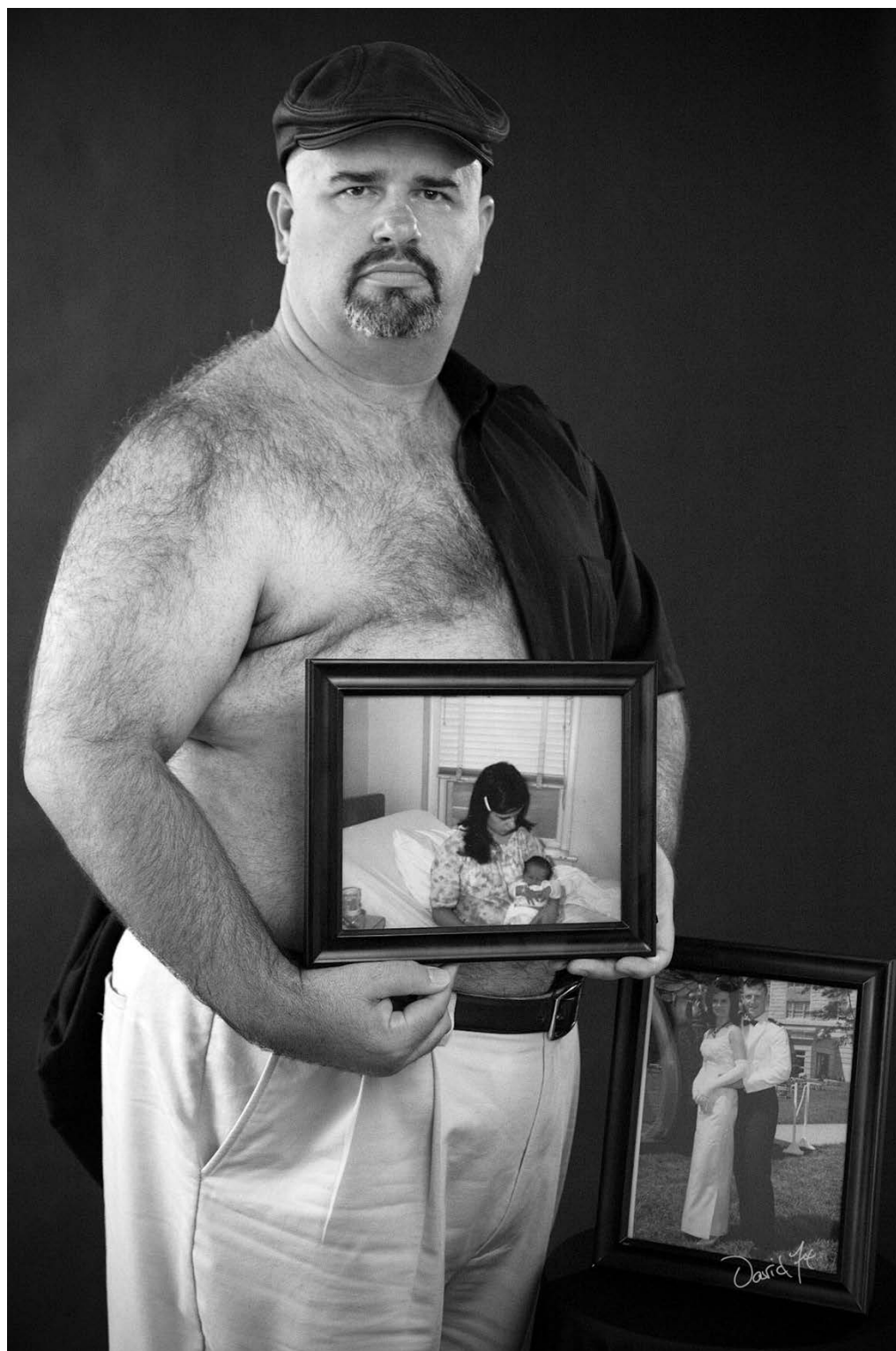


Figure 15. Photograph by David Fox. From the series “Faces of Breast Cancer: A Photographic Journey.” Used by permission, David Fox Photographer and Art beCAUSE.

Hollis Sigler and the whole picture: women, nature, environment, and disease

Perhaps no other artist has dealt as fully with all of the dimensions of breast cancer as has the painter Hollis Sigler, who developed the disease in the middle of her career as a visual artist and whose illness intervened in her work and changed its direction. Initially Hollis Sigler did not reveal that she was sick, but implied it through the symbolism in her paintings. But in 1991, after her cancer had gone into remission and then returned, she made breast cancer the clear motivation for her art. Sigler's work is unique in that it embraces all elements of breast cancer visual representation. She explores emotional, psychological, spiritual, environmental and feminist meanings surrounding her illness, critiquing biopower, linking women with nature, and poisoned nature with breast cancer causation and treatments. While breast cancer photography has overwhelmingly focused upon realistic representations of the diseased or treated body, Sigler's work is filled with surrealistic symbolism and iconography.

Her work is in many ways a visual response to Audre Lorde's *The Cancer Journals*, first published in 1980. Many of her breast cancer paintings were exhibited together in 1993, under the name *The Breast Cancer Journal: Walking With the Ghosts of my Grandmothers*, and a revised publication of the catalogue published in 1999 was called simply, *Hollis Sigler's Breast Cancer Journal*. In her work, Sigler responds to the emotional, political, feminist, and environmental implications of her diagnosis, utilizing her particular art form to question and express what is happening to her body and spirit, and addressing what she considers to be the culpability of our culture in breast cancer causation.

Sigler functions through the second-wave feminist observation that “the personal is the political,” sharing her experiences and thoughts in order to avoid complicity with silence and the subversion of what they know or suspect to be true about her illness: there is more to this diagnosis than one woman and her life. More than a medical diagnosis, breast cancer it is a symptom of our time and relationship to femininity, appearance, emotional repression, approach to illness and death, modern stress, inherited genetics and family behavior patterns, and the flagrant human befouling of our planet under the guise of progress and product. Sigler refused to wear a prosthesis, feeling it contributed to the invisibility of the disease, and that declaration became her first gesture as a breast cancer activist (24).

Sigler is also concerned with issues of silence and invisibility, the condition of our culture whereby breast cancer prevalence is under-acknowledged because it is unpleasant to consider, and threatening to those manufacturers of doubt and denial that produce toxins to huge profit. She raises concern that their disease is created, at least in part, through toxic exposures. As a multi-media, multi-genre visual artist, Sigler engaged in what Rancière considers the democratic process, bringing the concerns of the excluded into the realm of the accepted, the social, the sensible, (sensible as in common sense, or *sensus plenior*, a deeper meaning, but also *sensu*, or “in the sense of” as well as *sensus*, or feeling and perception, all of which are especially applicable to visual representation).

Sigler incorporates writing into her paintings: appearing on the frames and/or spacers are personal journal entries about her experience as a breast cancer victim, breast cancer statistics, quotes from literature or activist organizations, snippets of medical history. Thus, each work of art is not only the picture, but also the framing, which she

paints and adorns with words. These words and writings offer a gateway to understanding the visual symbolism and iconography in the surrealist/folk imagery reminiscent and clearly influenced by Kahlo (Yood 17, foreword to *Breast Cancer Journal*). Like Kahlo, Sigler mines her body and spirit for levels of understanding pain, psychological suffering, and comfort through material objects and the practice of her art. However, where Kahlo's suffering was predicated upon a singularly unusual condition brought on by a streetcar accident that resulted in her impalement through the vagina (itself eerily surreal, potentiating a horrific symbolism), Sigler is hoping to connect and address a condition (breast cancer) that she understands to be statistically advancing across a broad demographic of (mostly) women. Following Lorde, she implicates the environment in the causation of the disease, giving her work an added critical dimension. While she explores her emotional responses to her illness, the medical objectification of her body, her experiences with the confusion of cancer, the politics of breast cancer research and funding in the 1990s, and the spiritual construction of her coping mechanisms, she also addresses death, fear, and environmental degradation making her work so much more powerful and unusual. She links poisoned nature to poisoned woman, and refuses to be a happy survivor. She is a woman facing death: the death of her mother, who was diagnosed at 57, two years before Sigler was diagnosed at 37, and the looming reality of her own eventual demise.^v

Sigler was also critiqued for the highly personal nature of her work, reflective of a mainstream academic discomfort with feminist methods of politicizing the personal, and inherent critiques of patriarchal rationalism, scientific positivism, and authority. Thus, in

spite of her clear effort to link her personal experience to an epidemic affecting one in nine women (at that time), one of her reviewers critiqued her as follows:

[I]t would be difficult to walk unwarned into a room of these paintings and have any idea of what was going on or what significance it has. For Sigler, the process of producing the paintings was a way out of the isolation that cancer patients feel in a culture where cancer is still a stigmatized disease, because the paintings became her entree into the world of breast cancer activism. But that's a small world, and it will likely remain politically separated as long as breast cancer activists ignore their connections to the other ways in which human health is currently jeopardized. Outside that small world, Sigler's paintings can't really stand on their own. Her frequent use of private symbols, such as the repeated motifs of leafless trees or floating dresses, tends to render a more universal communication elusive, forcing her to rely on the written messages accompanying most of the paintings to make her meaning clear (Brady 2000, 12).

Time seems to be proving Brady wrong. Paintings from the collection of work comprising Sigler's *Breast Cancer Journal* are now selling for as much as \$13,000 a piece (e-mail from the gallery). Compiled into a book with a forward by Susan Love, Sigler's work is showing itself to be relevant to our time in the prescient way that truly challenging art often is. It is unabashedly feminist in its execution; it is precisely the personal quality of her symbolism, and the titles of these paintings, that reject the depersonalizing nature of the medical-industrial complex and the patriarchal status quo in the arts and humanities. Her symbolism is no more opaque than Dali's watches, or Kahlo's bed. Backstories are a common feature in art, and insist upon a level of

knowledge gained through education, religion, generally-accepted or previously-established societal/artistic symbols, or in exhibits, described for the general public through a curator's research and comment. Through her titles, and the statements featured on her spacers and frames, Sigler steps into the role of curator, ensuring there is no misunderstanding. She is unwilling to leave room for interpretation on that score; her activism will be a part of her art, and it encompasses a critique of the stodgy patriarchal conventions of the art world even as it addresses her primary subject. Issues of joy and death, environment and cancer, mystery and despair, illness and identity, statistics and politics, these, she tells us, are common to the human condition and frightening, off-putting even, but well worth exploring.

In calling on her own experience, she invites women—especially those with breast cancer or a family history of breast cancer—to fully articulate and experience the entire range of the illness process, social, political and personal, including those aspects that are the toughest to face. But rather than being relevant to only a small group of people, Sigler's work is fully engaged in a process of decolonizing her experience as a lesbian/feminist/artist/environmentalist/ patient and hereditary recipient of a vulnerability to breast cancer.

In 1995, soon after her mother's death from breast cancer, she put together a show: *Causes and Cures*. On her motivation for the show's theme, she states: "What has become clear to me is that the causes are related to the cures. They are two sides of the same coin. If radiation can cause cancer, radiation can also cure it. Chemicals in the environment can cause the disease; chemotherapy can cure. There is a paradox at work here" (31).

Sigler's work moved further into environmental activism as she incorporated images of nature—particularly damaged, burnt, broken nature—as a means of representing the psycho-somatic experience of cancer, equating nature with body, and a symbolism that stands for both the poisoned body (through exposures and chemo) and a poisoned earth. In her paintings, which comes first is unknown; they are symbiotic, unable to be separated. The experience of cancer is the experience of toxicity. Did this come through the toxicity of the earth, or is the toxicity of the earth a result of the poisonous nature of corporatization and complacency? Sigler poses the co-equation, and leaves the answers for us to ponder.

But she leaves suggestions through the information and statistics that she paints onto the spacers of each piece. In plate number 37, "I Always Had a Feeling of Well Being," (Figure 16) we see an unpeopled suburban yard at early evening, a light on in the house, the sky darkening, and the sun—in the right-hand corner, almost like a child's drawing—yellow and then orange, a smoggy sunset. To one side are a lounge chair, book, and eyeglasses, suggesting somebody has just gotten up and will be back in a moment. In the center of the painting, the yard, and a sprinkler/fountain watering the grass and plants. The frame provides a quote from Greenpeace, the environmental activist organization: "The evidence indicates that carcinogenic and hormonally active chemicals in the environment may play a significant role in breast cancer. Among the suspects are the organochlorines." Organochlorines are most commonly occurring as insecticides, the most notorious being DDT.



Figure 16. Hollis Sigler, oil on canvas, painted in 1995. “I Always Had a Feeling of Well Being,” 1999. *Hollis Sigler’s Breast Cancer Journal*. New York: Hudson Hills Press, 71.

Organiochlorine compounds are still being produced today, and although DDT and several others have been banned, their presence in the environment remains. Sigler’s suburban image, with its lovely sprinkler and perfectly smooth yard, represents that aspect of our history, and our continuing lifestyle, which chooses to poison the environment in order to achieve an ideal of nature—the perfect lawn—with no unsightly weeds or pests. All appears smooth and serene on the surface. But we have achieved this ideal while risking illness and death, suggested by the darkening sky, the overly-orange

sunset. Her title purports denial and delusion: the acknowledgement of our tendency to ignore statistical evidence, “it won’t happen to me,” or “it won’t happen to our planet.” Placed in a suburban environment, this sense that the darkness of the world, of life, can be held at bay with pesticides, irrigated lawns, and fences that secure and separate, these are the trappings of the well-manicured defense of the American Dream. How great a shock to discover, as Sigler did, that these protective landscapes are only illusions, that they in fact, pose another risk, and one which, it turns out, is more deadly threatening than any bug, plant virus, or trespasser. But how else to explain America’s continued love affair with pesticides? In this painting, suburban nature represents a hyper-pristine ideal, an artificial landscape contrived to support a sense of immortality and perfection.

Relative to human relationships, nature and death, it represents a devaluation of the death of plants and “lower-life forms” (weeds, insects), and the narcissistic elevation of human invention, will, and command over nature. As a faux nature, it is linked to artificially-supported attitudes of security, and particularly, in the context of Sigler’s *Breast Cancer Journal*, security from sickness, disease and death.

The theme of the invisibility of poisons, and their use in the creation of a perfect nature or environment, is repeated in several paintings. Sigler juxtaposes the horror of what she now knows to be a carcinogenic life with the banal evil of its apparent perfection. In “Haunted by the Ghosts of Our Own Making,” we see a feast table laden in a green corn field, under a pastel sky, with harvest symbols of abundance in the foreground—pumpkin, squash, and fruit. All appears joyous and bountiful, except that the guests coming to the table, or possibly servers who will wait on the guests not-yet-seated, are ghostly skeletons. The frame reads: “Although the use of DDT has been

banned by the government for years, its long term effects are now being recognized. The cancer causing potential of pesticides in use today may be hidden for years to come.” As with the suburban landscape, here Sigler juxtaposes the beauty of what pesticides can do—large perfect looking fruits and vegetables, and an abundance of them—with a ghostly or hidden reality, a grim, barely-visible or uncanny aspect to their production: deadly and cancer-causing pesticides. See also plates 38, “I Thought I Was in Paradise,” and 39 “Was it There? Was it Here?” for similar treatment on the subject of pesticides and the modern domestic landscape.

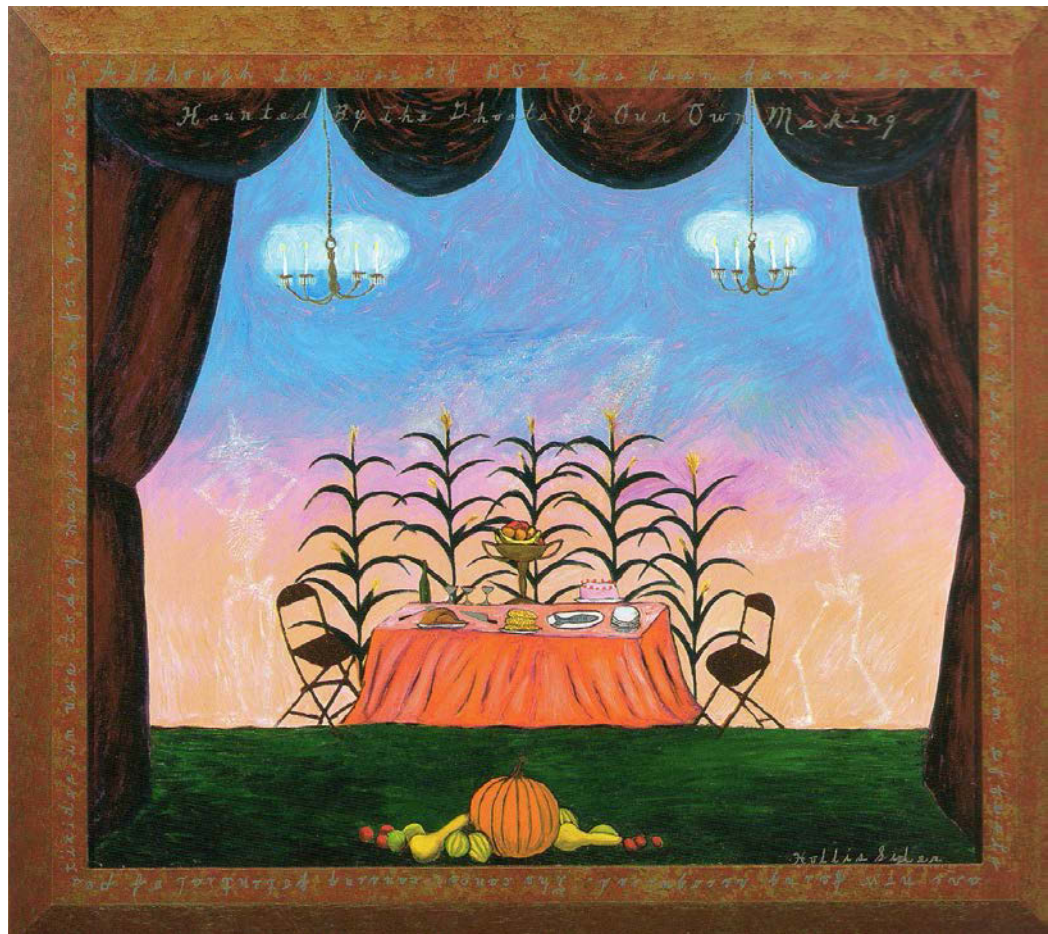


Figure 17. Hollis Sigler, oil on canvas, painted in 1995. “Haunted by the Ghosts of Our own Making”, 1999. *Hollis Sigler’s Breast Cancer Journal*. New York: Hudson Hills Press, 75.



Figure 18. Hollis Sigler, oil pastel on paper, painted in 1994. “There Are Not Many Rest Stops on this Trip,” 1999. *Hollis Sigler’s Breast Cancer Journal*. New York: Hudson Hills Press, 54.

In many of her paintings, Sigler utilizes the metaphor of a poisoned or ravaged nature as a trope for the ravages of breast cancer upon her body. One of her most potent symbols, which is used frequently, is that of leafless trees, with broken trunks and limbs that are held together, or reattached, with bandages and splints (for some of the best examples, see plates 4, 5, 18, 21, 60 in Sigler, 1999). In plate 20, “There Are Not Many Rest Stops on This Trip,” a devastated landscape, with leafless and burnt trees and an orange, smoggy sky, is interrupted by a small patch of a garden, struggling to grow in a

compromised, desert-yellow ground. A patio chair, a watering can, and a fly swatter suggest the presence of a solitary person who tends the fragile garden and rests there. This image of a woman-made, safe and greening place surrounded by a devastated earth is repeated in many forms, most particularly in the last plate, number 60, "Is This Wishful Thinking? Maybe Not." There, however, there is no greening, tended landscape, but rather, an easel with, again, the empty chair; on the easel, the non-present artist has created a drawing of a tree with leaves upon it. Where her body (represented by the earth) is devastated by death, toxicity, and pollutants, Sigler hopes and dreams of new, healthy growth.

Sigler, a self-professed feminist, has no trouble co-equating poisoned earth with a woman's poisoned body. Without the frames and spacers that posit a relationship between environmental toxins and breast cancer, we would perhaps not be able to make a clear assertion of the full breadth of Sigler's discourse; we would, however, still be able to find that she fully interrogates the relationship between a woman's body, her psycho-spiritual health, and nature. Where nature is blooming, green, lush, healthy, Sigler is representing her former, more care-free pre-cancer life, which is being encroached upon by a dark and looming future (see plates 5, 6, 8, 30), or a spirit of joyfulness, philosophy and hope (plates 19, 27, 28). When the landscape is dry, barren, damaged, burnt, in an orange and dirty sky, her frames and spacers reveal her desperation over her sick body, dying and treated with harsh chemicals that will "burn out" the cancer. It is important to note that Sigler embraces the relationship between women and nature as being a symbiotic whole; she does not shy from co-equating her personal body with a very

personal environment, including wilderness, but also domestic nature, as well as interior spaces that reflect daily life, logic, creativity, and processing.

Conclusion

Politics revolves around what is seen and what can be said about it, around who has the ability to see and the talent to speak, around the properties of spaces and the possibilities of time (Rancière 2004, 13).

Visual representations of breast cancer have become more prevalent as the disease has progressed in western culture. Artistic representations, designed to critique various aspects of the full breast cancer experience, have developed over the last few decades, incorporating new images as the disease advances throughout society. As cultural norms have changed, so too has breast cancer photography. Beginning with daring photographs of the experience of biopower, surgery, and the appearance of a radically mastectomized body, and moving through critiques of beauty, gender and sexuality, artistic representations of the breast cancer experience have brought victims out of the shadows and into mainstream culture. In recent years, as tattoos have become identity signifiers for an entire generation, we have seen images of women who have elaborately tattooed their mastectomized torsos (Figure 19), following Metzger, and we have also seen images of very young women, in their 20s and 30s, whose bodies have been severely altered through breast cancer surgery (Figure 20) at a time when they are going to school, starting careers, marrying, and having children, rites of passage that fifty years ago were rarely accompanied by a breast cancer diagnosis.^{vi}



Figure 19. *Inga Duncan Thornell*, tattoo work by Tina Bafaro, 2013. Featured in Mifflin, Margot. *Bodies of Subversion: A Secret History of Women and Tattoo*, 3rd Edition. New York: Power House Books, 2013.

Even where we find new and sometimes disturbing imagery of breast cancer in the first decades of the 21st century, as with David Jay's *The Scar Project*, we still rarely see anything that overtly points to environmental degradation and how it is affecting, specifically, women's health. In other words, we continue to remain in the pain and suffering and survivor/celebration modes far more frequently than we do in the environmental breast cancer representation subgenre. While this correlates to a general failure on the part of the heavily-publicized Pink Ribbon movement to embrace and push for breast cancer prevention laws, research, and policy, we can see that there have been



Figure 20. From *The Scar Project*, by David Jay, 2011. Used by permission.

strains of such work dating back to Hollis Sigler in the 1990s. Although Sigler works in another medium, it is unfortunate that more photographers and artists have not picked up on the important questions that she has raised and found ways of contextualizing their work, even if only to provide an artist's statement which, as David Fox and Art beCAUSE did, indicates a concern with these linkages and dedicates the work to further research on breast cancer prevention. David Jay's *The Scar Project* is beautifully and powerfully photographed, but in his mission statement he fails to make any kind of correlation between the increase in young women with breast cancer and discourse on cause or prevention.

How much more powerful is a photograph of a young pregnant woman with two mastectomy scars when it is presented, as Sigler has done, with statistics that demonstrate a positive correlation between certain toxins and breast cancer, or that now more than ever before we are seeing younger and younger women being diagnosed? Coupled with the knowledge that toxic exposures to young girls' developing breasts dramatically increase the chances of having breast cancer later in life, and that breast cancer often takes years to develop after exposure, we can begin to establish a case for concern in the public eye. When the observer has this information, either through contextualized statements or iconography and symbolism, how much more poignant and powerful is the photograph, the work of art? Rather than merely repeating the genres of pain and suffering and survivor/celebration, artists and documentarians can bring the discourse on environmental toxins and breast cancer into the realm of the sensible. The power of the image can do much more much-needed work here.

Chapter 3

Literary Geographies: Bodily Illness and Environmental Memoir

Thus we see that the story itself does not heal. The treatment does not heal. Transformation alone alters the world so that cancer no longer exists. Transformation comes from a reorganization of the elements of involved and participatory systems (organ, human, family, community, cultural) and how they communicate (or converse). Healing is an emergent property that we cannot fully understand because it seems to arise from nowhere. It emerges in communication patterns among organs and people . . .

--Lewis Mehl-Madrona, *Narrative
Medicine: The Use and History of Story in
the Healing Process*

One of the earliest writers on environmental toxins and disease, Rachel Carson, was likely motivated by her own breast cancer diagnosis, for while working on *Silent Spring*, she was also quietly and secretly undergoing treatment for breast cancer. There is no evidence that Carson even privately believed her breast cancer was brought on by, at least in part, environmental toxins. Yet it is impossible to imagine she didn't wonder about it, having done extensive research and writing on linkages between toxins and cancer. What is known was that Carson chose to keep her illness a secret because she did not want it to provide any fuel for the opposition, who were already quick to dismiss her work on the basis of her womanly emotionality and lack of a Ph.D. (Lear 2009, 428). "I am giving details to special friends like you," she wrote in a letter to her friend Marjorie Spock, "not to others, but I suppose it's a futile effort to keep one's private affairs

private. Somehow I have no wish to read of my ailments in literary gossip columns. Too much comfort to the chemical companies” (Lear 2009, 367).

This reluctance on the part of Carson to disclose her breast cancer is understandable, given the work she was trying to accomplish and the nature of the forces in opposition to her. Further, until Betty Ford came forward to openly discuss her breast cancer diagnosis and treatment, it was not a topic considered safe or appropriate for public conversation. Breasts were far too personal. To publicly refer to a part of the female body so powerfully linked in the culture to sexuality and maternity was taboo. So it is only in the last 45 years or so that women have been able to write about their own breast cancer for a public audience. And within that time, very few have been focused upon causation. As we saw with the photographic record of breast cancer, emphasis in breast cancer documentary work or memoir has focused on the pain and suffering, and/or celebration in surviving the disease, rather than revealing concerns about toxic exposures or the unsubstantiated possibility that their illness may be affected by the environment.

This chapter explores written memoirs of breast cancer, with a specific emphasis on those narratives that *have* questioned a relationship between environmental toxins and cancer. Obviously, doctors, health care specialists, and scientists studying breast cancer and toxic exposure write up their findings, but generally these findings call for more information and study and cannot make political or moral statements about the implications of cancer causation, the realities of public policy, or environmental health and risk debates. Personal memoir, particularly by women who are socially activist in their theory and approach to the study of illness, is able to broach such issues precisely because it is not bound by the same restrictions as scientific study. Carrying the authority

of personal experience, memoir can be more powerfully effective in exploring linkages between cancer and the environment, and since the 70s there have been a few writers who have focused on the subject through this genre, including Audre Lorde, Terry Tempest Williams, Barbara Ehrenreich, Sandra Steingraber, and Susanne Antonetta.

Three of these writers, Williams, Steingraber, and Antonetta, have each explored personal stories and observations concerning exposures, and her own or her family's illnesses. They have been specifically chosen for this essay because their work closely and holistically integrates their environment with their experience, making use of metaphor or other literary devices in order to establish a basis for social and scientific change. Also interesting are the ways each writer redefines notions of geographies, within and without. This essay will examine these authors' approaches to the subject of toxins and illness through the theories of Louis Mehl-Madrona and Kathleen Stewart, to examine the social, political, and community-building work accomplished through the power of the environmental illness memoir.

Terry Tempest Williams

Mother's health seems to be stable.

Great Salt Lake seems to be stable. (108)

In 1991 Terry Tempest Williams wrote a book about her family, close-knit Mormons living near the Great Salt Lake. Williams writes both as a naturalist and as a daughter and granddaughter. She is curious about the relationship between a sense of place, the landscape of home, environmental impacts of human activity, and illness.

In *Refuge: An Unnatural History of Family and Place* (1991), Williams gives equal time to a specific episode in the life history of the Great Salt Lake and the Bear River Migratory Bird Refuge—a time when the water was rising and threatening roads, railways, causeways, dams and beloved bird habitat—and her family’s recent history of cancer, most specifically her mother’s and grandmother’s simultaneous battles with breast cancer. Weaving back and forth between these two “unnatural” disasters, Williams makes a literary equation between the geographies of place and body: nature and culture are undivided. She integrates biology with emotion, human action with environmental change, landscape with death. She combines the personal with the biological and the political; her voice marries the tradition of feminine Victorian naturalist—engaged with her home and backyard or immediate landscape—with the scientific credentials of Carson.^{vii}

Williams is unabashed in her equivalencies. The landscape is feminine, mother; life but also death; ravaged and harmfully affected by man-made impingements; the waters rise and subside. Her ecofeminist correlations map physical geography with the body landscape. Each chapter begins with a measure of the lake level, so we can share the nervous observances, the gradual but relentless changes to the lake echoing not only Williams’s worry about the bird refuge, but mirroring her watchful concern over her mother’s cancer treatment and progression. The bird refuge is a place she recalls as important to her family; now it is overwhelmed with flooding, and that flooding endangers the creatures that regularly use it. As a beloved park that her family regularly visited, the threat to the refuge is also poetically, metaphorically, but also in some sense, literally read as a threat to her family and their sacred memories, a place that formed

familial identity. Meanwhile, she watches her mother and grandmother deal with the effects of ovarian and breast cancer, chemotherapy, and suffering through issues of life and death, understood as a deep blow to her family's sense of coherence and well-being. Williams is not suggesting that the metaphoric is the only way we must read the relationship between person or family identity and place. There is a literal and absolute relationship there which cannot be separated apart, if we are honest about the depth of the interaction.

What is it about the relationships of a mother that can heal or hurt us? Her womb is the first landscape we inhabit. (50)

Mother began her radiation treatment this morning. They tattooed her abdomen with black dots and drew a grid over her belly with a blue magic marker. . . .

“How do you feel, Mother?” I asked. She folded her arms across her midriff. “I feel abused.” (77)

Her memoir conflates becoming ill with human impositions upon the landscape: the surgeon's grid over her mother's belly equivalent to a blue grid on a topographic map; the cancer treatments her mother undergoes metaphorically equated with desperate interventions by civil engineers along the beloved lake shore of the Refuge. Both the surgery and the civil engineering project call for more and more human activity with increasingly uncertain outcomes. These take the form of chemotherapies and radiation for her mother, and pumps and drilling for the lake. The long-term outcomes of both are unknown, speculated, and pose risk.

Williams' family is not only metaphorically linked to the landscape, or engaged with it merely through picnics and nature walks. She herself was a naturalist-in-residence

with the Utah Museum of Natural History, and her father worked as a civil engineer. It is her father who articulates the difficulty of separating human activity upon nature from evading crises; in line to be part of the government-funded project to pump the waters of the lake in order to protect the development along its shores (130-132), he expresses the relationship between the family and the landscape, as he describes the nature of his work, the occupation that supported the family. Politics drives the decisions that lead to a contract. And yet, he states:

“Politicians don’t understand that the land, the water, the air, all have minds of their own. I understand it because I work with the elements every day. Our livelihood depends on it. If it’s a hundred degrees outside, our men suffer. And when the ground freezes, we can’t lay pipe. If we don’t make adjustments with the environment, our company goes broke.” He looked out over the huge body of water glistening with salt crystals. “Sure, this lake has a mind, but it cares nothing for ours.” (139)

Landscape and cancer ultimately come together toward the end of the book in the form of a revelation. Having made her case for the poetic and affective metaphors she draws, ultimately these are corroborated by suspicious evidence: a family memory kept buried, misunderstood for the importance it holds.

Her family on both sides have been living in the region for generations. Additionally, there is cancer on both sides of her family. Both grandmothers had breast cancer, and her maternal grandmother also suffered from Parkinson’s, a disease now linked to environmental exposure (Goldman 2014).

I belong to a Clan of One-Breasted Women. My mother, my grandmothers, and six aunts have all had mastectomies. Seven are dead. The two who survive have just completed rounds of chemotherapy and radiation. I've had my own problems: two biopsies for breast cancer and a small tumor between my ribs diagnosed as a "borderline malignancy." This is my family history. Most statistics tell us breast cancer is genetic, hereditary, with rising percentages attached to fatty diets, childlessness, or becoming pregnant after thirty. What they don't say is living in Utah may be the greatest hazard of all (281).

It isn't until her Epilogue that Williams details how she learned that her family were "downwinders," exposed to fallout from the Nevada Test Site. She recalls a recurring dream of flashes of color and light in the night that was later validated by her father as being real. The family, driving past the site one night, was exposed, and prevailing winds would have regularly exposed them over the course of the 50s and 60s.

My father's memory was correct. The September blast we drove through in 1957 was part of Operation Plumbbob, one of the most intensive series of bomb tests to be initiated. The flash of light in the night in the desert, which I had always thought was a dream, developed into a family nightmare. It took fourteen years, from 1957 to 1971, for cancer to manifest in my mother—the same time, Howard L. Andrews, an authority in radioactive fallout at the National Institute of Health, says cancer requires to become evident. The more I learn about what it means to be a "downwinder," the more questions I drown in. . . . I cannot prove that my mother, Diane Dixon Tempest, or my grandmothers, Lettie Romney Dixon and

Kathryn Blackett Tempest, along with my aunts developed cancer from nuclear fallout in Utah. But I can't prove they didn't (286).

In this last chapter Williams finally takes her observations about family, place, landscape, human activity, intervention, natural bodies out-of-balance, beyond the metaphoric and fully into the political.

Williams work is classically ecofeminist in its embrace of a metaphor that represents earth as feminine, and the feminine body as a part of the earth. Her geographies are primarily metaphoric. She encourages us to think of the earth as a part of our selves, as a mother, and to examine how when the earth is ravaged, so are we. Sandra Steingraber extends this metaphor into the realms of the interior body landscape. Steingraber's understanding of space and place moves into the realm of the molecular, but remain linked to the landscape of her home state of Illinois as well.

Sandra Steingraber

Sandra Steingraber was not a breast cancer victim, but she writes about her own experience with bladder cancer and speaks for all those whose cancers seems to be caused by toxic exposure, including breast cancer. Like Carson, Ehrenreich, and Williams, she also holds a science degree, a Ph.D. in Biology. The place where she situates her story is "downstream," a place, like "downwind" and "below," located not far from a factory, field, or landfill. Here the detritus of chemical production and use flows into the local soil, water and air, and eventually into the bodies of local inhabitants, plants, animals, and microorganisms. In *Living Downstream: An Ecologist's Personal Investigation of Cancer and the Environment*, Steingraber's localities are the places where we live, pesticide-rich farm land, choked cityscapes, suburbs adjacent to waste

dumps. They are vastly spatial, and co-populated by chemical compound molecular structures created in white-coat corporate laboratories with cooperation from modern science and released unrestricted into a global market.^{viii} Cellularly, they are the tiny places within us where cancers grow and multiply.

Steingraber explores space and time in terms of cancer. She talks about modernity and modern lives as if they were measures of time stolen away from us due to exposure to toxins. She uses time as a way to map cancer by graphing statistical data, and from this she is able to show the alarming growth rate of cancer over several decades alongside the use of chemicals in daily life, endemic since World War II when chemical development and distribution grew rapidly. Spatially, mapping localities where incidents of cancer are high provides clues to the causes.

The time trends and spatial features of cancer's occurrence around the globe clearly belie the notion that cancer is a random misfortune. Cancer associates with westernization. Whereas forty years ago, cancer was mostly a disease of wealthy nations, half of all cancers now occur in developing nations, particularly those rapidly industrializing. . . . In India, cancer incidence rose by 7 percent between 1983 and 1997. It rose by 12 percent in Latin America. . . . The cancer rate in Sumqayit [Azerbaijan] is as much as 51 percent higher than the national average . . . In China as a whole, cancer incidence increased by 33 percent between 1973 and 1997 . . . (61)

Her spatial mapping extends into the molecular structure of the body. In *Having Faith: An Ecologist's Journey to Motherhood*, Steingraber takes her concern about environmental toxins into an examination of her own body as it grows through the stages

of pregnancy. Like most pregnant women, Steingraber is concerned about what she must do as a mother to ensure her growing child will develop safely and become a healthy baby. But as a scientist and cancer survivor, she knows environmental toxins have a role to play in the interior landscape of her own body. The book is an examination of how toxins held in the mother's body can affect her baby, and introduces us to a new layer or level of geography and terrain: the inner body as polluted landscape.

How do toxic chemicals cross the tough sponge of the placenta? How do they find their way into amniotic fluid? How do they enter the milk-making globes in the back of the breast? What are the effects for the child of these earliest encounters with synthetic chemicals? The answers to these questions seemed essential to my new responsibilities as an expectant mother. And they all pointed to a simple truth: protecting the ecosystem inside my body required protecting the outside one (2001, ix).

In Part 1, Steingraber's spatio-temporal examination places dramatic impact on the nine months when a child is developing. Nine months go by, wherein Steingraber examines what is happening to the fetus as it goes through the stages of becoming a viable human being, the development of its brain, its nervous system, its appendages and organs, its awareness. At the same time, she describes the variety of ways these systems of development can be encroached upon by the mother's toxic body burden, and how toxins can affect a developing child. She examines the stories that we know: DES, lead, mercury, how these have provided us with information on the effects of an unnatural body chemistry altered through deliberate or casual exposure to unknown/untested substances. She questions the safety of common toxins we have in our blood streams for

which there is no information. Part 2 is an exploration of the relationship between maternal body burdens and infant exposure through breast milk.

Steingraber has developed a way of talking about the inner body as landscape, but she also humanizes the experience. Through her, we get a full understanding and ability to talk about chemicals such as atrazine, dioxins, PCBs, but we also come to see how these are directly related to the lives of people in close association with toxins: farmers, community members, parents, babies, and her own personal doubts and fears as a mother with a history of cancer. Where Williams' work drew metaphoric and poetic linkages between "mother" earth and her personal mother and grandmother, Steingraber makes a literal designation of the body as a valid landscape, with its own ecology so similar to that earthly ecology originally described by Rachel Carson in *Silent Spring* and her sea trilogies. Perhaps most importantly from an activist standpoint, Steingraber introduces us to the concept of "toxic trespass," the idea that those corporations deploying untested chemicals into our environment are not metaphorically, but literally deploying them into our bodies, and this means they are in fact trespassing upon our interior landscapes and severely compromising our health or even causing death. Steingraber is the first to make a direct and literal association between the corporation out there, and its presence *in here*.^{ix} She moves us away from the poetic correlation of earth and body to the realities of such, and she places a new sense of geo-terrain into the microscopic landscape of the biological body.

Susanne Antonetta

Antonetta's geography is at once broader but also more localized than Steingraber's, and her sense of environmental justice and family illness is fully formed at

the beginning of her book, *Body Toxic: An Environmental Memoir*. Where Williams comes at the end of her story to recall family exposure to radiation, and suggests linkages between her foremothers' cancers and the environment, Antonetta has no doubt. She begins her story already intending to draw direct linkages between the polluted landscape of her childhood growing up in New Jersey and the variety of illnesses: physical and mental, linked to issues of environmental justice.

In *The New York Times Book Review*, Michael Pollan refers to her memoir as "Superfund Gothic" (2001), an apt description of her story, with the polluted landscape and her family's history mired in poverty, racial mixing, and mental illness standing in for the dark gloom that conveys the gothic atmosphere of danger and misfortune. Even though Williams' landscape is being destroyed, it doesn't *look* very gloomy. Her western landscape remains, for the most part, beautiful and pristine; radiation, for the most part, contaminates without visual evidence. Steingraber's landscape, too, juxtaposes the idyllic American Gothic of Grant Wood, the dark lush breadbasket soils of Midwestern farmland, with the realities of pesticides in the waters and ditchbanks of her home. The horrors of Williams and Steingraber are unseen, "uncanny," which is part of their terror. Even with Steingraber's inner geography, what she is describing is for the most part invisible to us, and it is precisely this invisibility in the face of what seems to be ordinary, healthy, and beautiful that frightens.

But Antonetta does not come from such a place. Her home is situated near the manufacturing sites, the nuclear power plants, the waste product of an urban location dedicated to the production of energy, materials, and chemicals on a contemporary and large scale. Unlike issues of visibility and invisibility surrounding the numerous breast

cancer narratives of the past, Antonetta's toxic imaginary isn't imagined. It is visible and real, and she calls it out.

Elizabeth has an air like no other air—heavy, gray, like an odor become a scarf wrapped around your face: an olfactory purdah. The city, and Newark, which squats next to it, survives on heavy industry. They're amazing cities to see from far away: the rows of long smokestacks sticking up like goosenecks, breathing black clouds that roll together to become a lower level of the atmosphere. Sluices dripping muddy brown sludge matter-of-factly into the water. I remember how many days, especially in the summer, began with the radio describing our air quality unacceptable. Like you had a choice about whether or not to breathe (93). Ordinary plants have been known to make weird extravagant mutations near nuclear reactors: at one reactor in Sellafield, England, a white flower changed to blood red. . . A local woman who has leukemia told me she heard that the Kirkwood-Cohansey aquifer wanders cross the country and its path is visible aboveground in a long lazy river of mutated creatures: legless frogs and sexless trout, blind muskrat, pink-eyed birds (77).

Where Williams and Steingraber bring all their scientific background to discussions of the environments on which they focus, Antonetta is more interested in matching up visibilities with urban legend, and family myth with medical history. She makes correlations unabashedly, indeed it is the act of correlation that most inspires her.

I don't expect anyone to explain what's wrong with me. No one can explain what's wrong with anybody, I don't think. Though I don't believe in coincidences of this magnitude either: clusters of children with brain disorders, toxic plumes

and clouds, radiation spewing in the air. Every vital system of my body disrupted: an arrhythmic heart, a seizing brain, severe allergies, useless reproductive organs. Either it's Sodom and there is the wrath of God or it's the wrath of man, which is thoughtless, foolish, and more lasting (203).

She refers here to the multiple illnesses she has experienced, along with her family members. "I have or have had one spectacular multiple pregnancy, a miscarriage, a radiation-induced tumor, a double uterus, asthma, endometriosis, growths on the liver, other medical conditions like allergies" (27-28). She has her "blood drawn all the time to monitor various things" (28), had "much of each ovary removed" (50) and her thyroid completely removed (241). She suffers from manic-depression, a family history of it, and went through a drugs phase so severe that she stopped attending school altogether.

The information, the struggles her family endures through their inherent dysfunction, coupled with overwhelming accounts of well documented toxic exposures, and physical outcomes that read like a listing of monstrous qualities in a freak show, create a frightening documentation of suburban life in a poisoned present. Antonetta advances further than other environmental memoirists when she suggests a correlation between her and her family's histories of mental illness (schizophrenia, depression, bipolar disorder) and toxic exposure. Without dismissing poverty or family history, she nevertheless provides a compelling account of the relationship between nervous disorders and toxic exposure.

This is a far cry from the days when Rachel Carson did not feel able to discuss her cancer openly for fear of being dismissed as "too emotional." Antonetta lays all her familial cards on the table, raising the issue of mental illness as a documented

consequence. She allows the reader space to dismiss her, if they choose, to her own label: mentally unstable; hypochondriac; stress disorder brought about through racial discrimination, poverty, family dysfunction. But, as Pollan points out, this is where science is headed already. Recent studies are finding linkages between depression, stress disorders, and pesticide use (Beard et al. 2014), and Parkinson's disease (Goldman 2014). To this end, Antonetta's work takes us even further than Williams or Steingraber. We are no longer talking only about cancer, we are talking about the body's systemic breakdown. Antonetta's bodily landscape becomes a thing of the mind, a broken structure that cannot easily be defended, repaired, or halted, and which affects every other aspect of living.

Theories for the environmental memoir

The work of Kathleen Stewart is particularly relevant to this discussion, as it suggests a means for understanding, and to a certain extent counteracting, the requirement of contemporary political narratives that would dismiss correlation. The insistence upon scientific proof of causation prior to taking any meaningful action to protect public health from toxic exposures has the effect of silencing those whose illness experiences-- "anecdotal" as they may be--do not wait for scientific proof before they spring forward. As part of an individual's belief system or experience, structures of correlation between toxins and health do not have a mainstream avenue for being heard. And yet, if we are to combat silencing and invisibility, then correlative stories need telling. Stewart's concept of "ordinary affects" is not engaged in scientific, statistical analyses of the struggles within a community, but seeks to reveal the effects of pressure exerted through power structures.

“[T]he terms neoliberalism, advanced capitalism, and globalization that index this emergent present, and the five or seven or ten characteristics used to summarize and define it in shorthand, do not in themselves begin to describe the situation we find ourselves in. . . . This is not to say that the forces these systems try to name are not real and literally pressing. On the contrary, I am trying to bring them into view as a scene of imminent force, rather than leave them looking like dead effects imposed on an innocent world (2007, 1).

Through witnessing and describing these “affects” of structural violence, environmental memoirists, heroines of the Superfund Gothic, use words to make images and suggest correlation, allowing these to stand on their own, requiring no further proof.

The work of Lewis Mehl-Madrona and his ideas about “narrative medicine” are useful in giving context to a discussion about toxic exposure of the body as a type of new-style colonization. Mehl-Madrona has an M.D. from Stanford University, a Ph.D. in Clinical Psychology, and has taught courses in biostatistics, systems engineering, and epidemiology. He has served as faculty at the University of Hawaii School of Medicine, University of Saskatchewan Department of Family Medicine, University of Arizona Program for Integrative Medicine, and was program director for the Center for Health and Healing at the Albert Einstein School of Medicine in New York. In other words, Mehl-Madrona has extensive credentials in the realms of traditional western medicine, psychology, and academia. But his family background is mixed race, Scots/Cherokee on his mother’s side, and French-Canadian/Oglala on his father’s. He states that his Native American background and the stories he learned from his Cherokee grandparents

informed his decision to study Native American medicine practices even as he pursued a medical degree at Stanford (2007, 4).

Mehl-Madrona defines narrative medicine as that which is capable of embracing numerous realities in the pursuit of wellness. A conventional medical diagnosis is thus only one narrative in a situation (the illness) which is founded individually, case by case, and constructed out of multiple narratives, including familial, cultural, religious, anecdotal, and environmental. This has proven to be an important approach when dealing with people who have complex relationships between their traditional medicines and contemporary biomedical practices. “People are richer and more idiosyncratic than one simple correlation,” he explains. “One of the advantages of a ‘narrative approach’ over logical positivism is that we can accept this narrative on its own merits. We can declare its validity without reference to a normative sample” (12). Each individual’s medical story “can and does stand alone” (13).

In exploring wellness, illness, and healing from this perspective, biostatistics and current medical research do not trump individual experience and belief, but rather function as one part of an integrated whole that acknowledges the complexity of each individual case. “Consistent with indigenous approaches, a narrative approach allows us to accept the validity of people’s stories without reference to correlations or large population studies. The underlying principle is the connectedness of all things, but this manifests in different ways in different families and cultures” (13). Additionally, the folkloric is thus given a place in relationship to knowledge, or what Foucault has referred to as subjugated knowledge. Melh-Madrona illustrates:

[M]any of the indigenous people of Thailand and surrounding areas survived the tsunami that hit in 2004 because of their stories. A number of stories informed the people to run for the hills when the water receded and fish were stranded on the newly uncovered beach. Anthropologist Kathryn Coe of the University of Arizona tells a similar story about an event that occurred in Africa at the turn of the century (Coe 2003). The native people of an equatorial lake had stories that informed them never to build houses below a certain altitude above the lake. Though no scientific justification was provided, they followed these stories, unlike the Europeans, who thought such ideas were poppycock. When a large carbon monoxide bubble rose out of the lake, as it did every several hundred years, the Europeans were killed, while the indigenous people lived high enough from the surface of the lake to survive. For centuries, stories have contained perspicacious observational wisdom. These stories don't provide what biomedicine would consider a satisfactory scientific explanation, but neither did the milkmaids' cowpox story. It just told how things worked (14-15).

For decades, feminist and science theorist Sandra Harding has argued that the technologies of the constructed "other" have been disregarded and dismissed because they belong to people and cultures defined as less sophisticated and removed from structures of power (2008, 1993). She argues that as part of the postcolonial present, the concept of "modern" sciences and technologies can no longer hold, given the multiplicity of global experiences that can be determined to be "modern" (2008, 176). Contesting the binaries of modern versus traditional with regard to science and technology, Harding opens up a conversation that encourages validation of methods of knowledge dismissed

out of hand by western science. Her theories ask us to acknowledge western biases toward “traditional” technologies, and to restructure our scientific evaluation so it includes science with a long history of useful understandings, such as the situation described above.

In a discussion about the roots of a scientific empire based in Eurocentrism, Harding reminds us that contemporary scientific discovery was often built by gathering and appropriating traditional knowledge from other cultures and synthesizing these through power structures that afforded access to resources via systems of colonization. Through expeditions to previously “undiscovered” continents and people, plant lore, for example, would be shared, and then the lands where those plants thrive would be taken, developed, and exploited. Eurocentric science, evolving into what we today know as modern medicine, is thus rooted in a system of colonization and empire (2008, 136-140). She then makes an argument for the need for postcolonial work in the sciences, which would incorporate those nearly lost or diminished scientific technologies of the once- or still-colonized.

PCSTS [Postcolonial Science and Technology Studies] theorists do not propose substituting a romanticized view of non-Northern scientific and technological traditions for the prevailing dismissive or demonized view of them which has accompanied the romanticized view of Northern traditions in Northern philosophy and science studies. Rather, they call for a more balanced, objective, “robustly reflexive” account of both. They want a critical assessment of the strengths and limitations of both kinds of traditions. They want accounts that take responsibilities and accountability for knowable consequences of empirical

research, but also for consequences which are difficult or impossible to predict, such as the effects of scientific and technological projects in one part of the world on the lives of peoples in other parts. Feminist postcolonial studies want women, too, centered in these projects as agents of knowledge and history, and women's lives considered as paradigmatically human as their brothers' in thinking about science and technology projects . . . (144-45)

In considering what Harding is calling for as it might relate to breast cancer causation and treatment, pink ribbon culture, and environmental toxins, it is evident that we have not come very far in her vision of a postcolonial science. As we will see in Chapter 4, although women seem centered in the middle of the pink ribbon movement—a cure for breast cancer most obviously affecting women—pink ribbon critiques remind us that breast cancer research is deeply ensconced inside of a large, unwieldy, and classically patriarchal system in its funding mechanisms, its means and methods of training, and of course its paradigms and biases. We still have not acknowledged that women's personal stories about their breast cancer experiences, including their beliefs about causation, have been given any merit in the discussion about the disease, how to treat it, or how to eradicate it.

If we look at this paradigm of narrative medicine, we can see a number of factors in the “conventional medicine” approach previously described as relevant to breast cancer narratives surrounding causation and treatment, including viewing the individual as separate from, selected out of their environment or community; focusing on lifestyle factors or even defective inherited genes rather than the cultural, social, and environmental dysfunction of a polluted community; and the continued expression of

causation and treatment inside of an individualistic model rather than within specific groupings that might include cancer clusters, environmental and pharmaceutical exposures, issues of race or class, etc.

Mehl-Madrona's work is focused on decolonizing methodologies (although he does not use that terminology) that would incorporate all components of an individual patient's life, understanding that health and well-being is dependent upon a "network of relationships in which the particular individual is embedded and on cultural and social factors yet to be determined (see Table 1 below).

Narrative Medicine	Conventional Medicine
Multiple causality	Unilateral causality
Systemic explanations	Mechanistic explanations
Engagement; interdependence; circularity; relationship to quantum physics	Interdependent variables; linearity; cause and effect; randomized controlled trials; classical mechanics
Community focus (disease is seen as originating through relationships within a community)	Individual focus (disease is seen as originating within the individual)
Solutions do not necessarily relate to causes	Solutions arise from understanding cause, and grow logically out of one cause
Healing focuses upon restoring harmony and balance	Healing focuses upon finding a specific biological or genetic cause and fixing that
Disease arises from dysfunction; it occurs through susceptibility, which relates to imbalance and disharmony in relationship	Disease is defined by structural suffering and anomalies; caused by biological factors or genetics (cause and defect paradigm)
Relational self	Individual self
Cooperate; win-win	Compete; win-lose
Disease is found within relationships	Disease is found within individuals and specifically within organs

Table 1. Source: from Lewis Mehl-Madrona, M.D. Ph.D. 2007. *Narrative Medicine: The Use of History and Story in the Healing Process*. Rochester, VT: Bear & Company, 31.

“Disease,” he tells us, “is not purely biological or genetic.” (118) Current approaches to breast cancer treatment are focused exclusively upon genetics and biology, and relegate all other components to social workers, fund raisers, politicians, religious/spiritual leaders, and support groups. What this means is that an individual’s body becomes compartmentalized and sectioned off from everything else that supports or contributes to her diagnosis. When “lifestyle” factors are discussed, it is only within the context of causation—some might even say blame—and focuses upon the patient as an individual who is making certain mechanical choices regarding how she eats, exercises, drinks, and manages stress. “Lifestyle” factors do not involve cultural beliefs and traditions, community stressors and values, or personal and community histories relative to cultural and environmental degradation and exposures. Listening to the genetics and biology is important, but functions outside of listening to all of the other factors involved in a patient’s life. Well-being itself is segmented, with only the mechanistic component focused upon as the means to recovery.

Mehl-Madrona’s paradigm is a part of a treatment modality, but it embraces the power of narrative in the process of reaching a state of equilibrium. Narratives do not have to be “true,” the power of the narrative resides within the belief system of the individual, but in as much as any individual is situated inside of numerous contexts, their personal narrative may also engage with many communities. To narrate the individual’s illness experience is to also address those community illnesses that are part of the public health landscape. That is, to the extent that any community experiences heightened statistical unwellness, it suffers, and has been suffering, under multiple causes.

Chapter 4

Decolonizing Body, Decolonizing Self

I do not wish my anger and pain and fear about cancer to fossilize into yet another silence, nor to rob me of whatever strength can lie at the core of this experience, openly acknowledged and examined. For other women of all ages, colors, and sexual identities who recognize that imposed silence about any area of our lives is a tool for separation and powerlessness, and for myself, I have tried to voice some of my feelings and thoughts about the travesty of prosthesis, the pain of amputation, the function of cancer in a profit economy, my confrontation with mortality, the strength of women loving, and the power and rewards of self-conscious living.

--Audre Lorde, *The Cancer Journals*

A speaking being, according to Aristotle, is a political being.

--Jacques Rancière, *The Politics of Aesthetics*

This chapter will engage with breast cancer narratives that incorporate evidence linking breast cancer to toxic exposure. This interrogation includes those narratives which describe the various ways cancer patients experience oppressive losses of identity, agency, and self-determination. It will survey those aspects of the breast cancer cultural narrative that occur on a societal level among U.S. subjects through discourses of science and policy, environmental justice, biopower, pink ribbon culture, gender, the politics of visibility, and the natural phenomena of illness and pain with its organically-oppressive characteristics. Having established a basis for thinking of poison placement as a method of colonizing “inner space,” and laying out conditions that inform and direct the experience of the first-world breast cancer patient, this chapter introduces the work of scholars who have delineated decolonizing frameworks, and explore how specific methodologies, applied in the

classically-constructed colonized world (geographic, existing outside of U.S. boundaries) may be strategically useful in gaining ground on the reclamation of self-determination and agency for breast cancer victims who are concerned about toxic exposures.

Barriers to awareness of poison placement

The political forces that work to keep people uninformed or unfocused on issues of toxins and public health represent one of the most organized systems of oppression in the field of human illness. This is not surprising. It is apparent how corporations, the defense industry, and government have addressed the threat of global warming to capitalist profits, spending millions on a campaign of climate change denial even while the consensus among scientists is alarmingly consistent in verifying that climate change is here, and a product of human activity brought on by polluting industries and practices (Goldenberg 2013, Michaels 2008). Corporate-backed associations of scientists, chemical industries, and big polluters form coalitions, funded with unlimited dollars, to create doubt in the public's mind regarding chemicals, toxicity, and health (Michaels 2008). Some of these groups are formed under the auspices of concern for public health, when in fact they are operating for chemical manufacturers and other polluters. Examples include Citizens for the Environment, a front group for the Koch brothers; the Alliance for Air Policy, represented by chemical lobbyist Jeffrey Holmstead; and the Center for Consumer Freedom, originally financed by Philip Morris and now advocating against organic produce and GMO labeling (Johnson 2011, Shabecoff 187-188).

In her talk given at the Breast Cancer and the Environment Research Program (BCERP) conference November 16, 2012, science writer Liza Gross, from the Public Library of Science, reported on the efforts of the chemical manufacturers to defeat

California state legislation on banning PBDE flame retardant requirements in home furnishings.^x

Since 2007 five bills had been introduced in California to regulate flame retardants, and all of them had failed. In her analysis of campaign donations to California state legislators and their voting records, she found that since 2007 the chemical industry had spent at *least* \$2.3 million to influence lawmakers, with 97% of those dollars going to lobbying efforts. Of the top four legislators who received campaign donations from the chemical lobby, none voted for flame retardant regulation. Speaking on the same panel, California State Senator Mark Leno said, “The entire lobbying effort is 100% fraudulent. Industry doesn’t give a damn what we do—regulate, deregulate—as long as we stuff their pockets with money.” In discussing the front group Citizens for Fire Safety, Leno explained they were created by a public relations firm, Burston-Marsteller, which was the same group hired by the tobacco lobby during the years when it struggled against efforts to have tobacco labeled as carcinogenic. (See also Shabecoff 187-188; Callahan 2012.)

Government organizations such as the FDA, EPA, CDC, and the Department of Health and Human Services—to name only a few—have also become places of political intervention, with the Bush II administration notoriously appointing business-friendly people to powerful positions.

By 2006, over nine thousand top U.S. scientists, including Nobel laureates, medical experts, university science professors and chairpersons, and former heads of federal agencies, signed a statement expressing distress about what they saw as “the misuse of science by the Bush Administration.” The statement, distributed by the Union of Concerned Scientists, charged that “when scientific knowledge has

been found to be in conflict with its political goals, the administration has often manipulated the process through which science enters into its decision” (Shabecoff 155).

Appointing anti-science experts to scientific panels, boards, and executive positions has severely eroded the power of various publicly-funded agencies founded for the purpose of protecting public health. The EPA, for example, has questionably dismissed numerous valid studies while co-engaged in research that has egregiously overlooked ethical human subject research standards, called for reduction in air and water pollution requirements, consistently sided with the military on dangerous chemical pollutants, failed to create new standards for known carcinogens, and staffed itself with people like Jeffrey Holmstead, a notorious chemical industry lobbyist who worked in the 90s to oppose pesticide regulation. (Holmstead also worked as Mitt Romney’s energy advisor during his failed 2012 campaign for president.) (Shabecoff 154-157; Johnson 2011).

More positively, government-led studies are beginning to focus upon concerns regarding the toxic burden that our bodies are carrying, and the resulting organic dysfunction. In 2007, U.S. Representative Nita Lowey sponsored the Breast Cancer and Environmental Research Act into the House, which mandated the establishment of an Interagency Breast Cancer and Environmental Research Coordinating Committee, to be made up of federal and non-federal members. Their task was to report back on what is known in current research, and make recommendations for future grant-funded research. The bill passed with 287 cosponsors (76 Republicans and 211 Democrats). In February 2013, their published report found that more emphasis and research needs to be placed on

the link between environmental factors and breast cancer. In 2009, President Obama assigned a task force, the President's Cancer Panel, to study and report back on cancer cause and prevention. This group came out with a similar admonishment indicating a greater need to work on cancer prevention with regard to toxicants in the environment. Proposed bills such as Trevor's Law, which focuses on childhood cancer and toxins, or the Safe Chemicals Act, recently reintroduced to Congress, promote the precautionary principle with regard to toxic body burdens and disease.

Although these approaches to addressing policy and research are important, they are slow-moving and have not yet resulted in effective legislation that will protect the public. It has been six years since the Breast Cancer and Environmental Research Coordinating Committee was formed, and in 2013 they finally came out with a report calling for further research, yet no substantial revision to the outdated Toxic Substances Control Act has passed. In 2013 Senator Lautenberg reintroduced the Safe Chemicals Act in 2013, after having initially failed in 2011 (Senator Lautenberg had been working on advancing some type of chemicals safety legislation since 2005; he died in 2013 without any significant legislation on what he had hoped would be one of his legacy projects) (Frank R. Lautenberg, United States Senator for New Jersey 2013; Salant 2015). In 2015 a chemical safety act was proposed by New Mexico Senator Tom Udall and Louisiana Senator David Vitter, and passed. It is perceived by environmentalist groups and leaders, including California Senator Barbara Boxer and activist Erin Brochovich, to be essentially an ineffective, and in some ways even watered-down, version of the TCSA of 1976. Boxer suggests the bill appears to have been written by the \$8 billion chemical industry itself, and the Chemical Council's financial support for Udall's reelection

campaign is a bit suspicious (Lipton 2015). In response, Boxer had introduced tougher legislation which, given the industry-friendly Republican Congress, was less desirable and did not gain momentum (Wheeler 2015).

In October 2012, the Breast Cancer and the Environmental Research Program (BCERP) hosted research scientists working on issues of toxic exposure and breast cancer at their annual conference. BCERP, founded in 2003, is funded by the NIEHS and the National Cancer Institute for the purpose of exploring how childhood exposures from conception forward may affect the development of breast cancer.

A few examples of the types of research being conducted today in cancer laboratories throughout the U.S. are listed below as relevant examples of the discussion on the role of science in the establishment of toxin / breast cancer linkages. These were all presented at the October 2012 annual meeting of the Breast Cancer and the Environment Research Program (BCERP). Founded in 2003, BCERP is funded by the NIEHS and the National Cancer Institute for the purpose of exploring how childhood exposures from conception forward may affect the later development of breast cancer in adulthood. Dissemination of research findings are a part of the BCERP mandate, and their annual conferences are focused on providing latest research in terminology easily understood by the general public.

1. A study funded by NIH grants and a VA merit award explored the exposure of BPA to pregnant rats, and evaluated any significant changes to the offspring with regard to genitalia and terminal end bud proliferation. They report: “[D]aughters born to dams fed HFB (high fat butter) and a low dose BPA diet had (1) a delay in vaginal opening, (2) an increase in the number of terminal end buds (TEB), and (3)

significant increases in TEB cell proliferation. Importantly, daughters born to dams fed with HFB diet and a low dose BPA exhibited a significant increase in tumor incidence (90%) observed 90 day (sic) after DMBA-treatment on PND50 when compared to other HFB + higher BPA groups (50-60%)” (Breast Cancer and the Environment Research Program 2012, 11).

2. Another study, funded by the Cancer Institute of New Jersey, the Komen Foundation, and the New Jersey Commission on Cancer Research, looked at a sampling of 163 girls aged 9 and 10, and measured urinary mycoestrogens present in an effort to tie mycoestrogenic properties to sexual development and physical growth. Findings “suggest that ZEA mycoestrogens may exert anti-estrogenic effects similar to those reported for isoflavones,” with more research on mycoestrogens needed (Breast Cancer and the Environment Research Program 2012, 14).

3. A poster presentation funded by NIEHS, NCI, the National Center for Research Resources and the National Center for Advancing Translational Sciences (NIH), explored the efficacy of certain methods designed to keep young girls involved in extended longitudinal studies, and concluded that the girls were “most aware of ‘getting a study t-shirt’ (99%), ‘having fun at the visit’ (97%), and ‘being rewarded with cash’ (96%)” (Breast Cancer and the Environment Research Program 2012, 39).

These examples are not intended to de-value the efforts made by various scientists, research laboratories, and funding institutions, or diminish the importance of understanding the role of environmental factors in the development of breast cancer. They are cited to demonstrate the types of work, the extreme detail, and the minute level of progress made toward better comprehension of breast cancer, and the extraordinary

time and expense involved in making these various assessments. Additionally, there are known and well-evaluated concerns regarding the translation of any kind of research that is ethically bound by human subject protection. Research on rats has generally not been relevant to medical conditions in humans because we cannot knowingly withhold treatment from sick people or induce illness in healthy people, meaning researchers are limited in the types of studies they can design. Undoubtedly, these researchers and organizations are deeply committed to the task at hand, but at the current pace science's ability, indeed its *qualifications*, to adequately address this issue head-on, and in a timely fashion, is questionable.

What is more, the breast cancer research machine is extraordinarily well-funded, with some of the largest dollars being contributed by Susan G. Komen, Avon, and the Department of Defense. Ironically, Avon produces cosmetics that do not pass the Environmental Working Group's standards for safety regarding chemical components in their products (Environmental Working Group 2013). The Department of the Defense is responsible for 148 superfund sites in the U.S. alone (Georgia Air Force Base 2012), owning over 1400 sites with TCE contamination – a proven carcinogen (Shabecoff 166) and one of the contaminants in the famous Camp Lejeune male breast cancer epidemic (Williams 2012). Susan G. Komen has been the primary proponent of the pink ribbon culture's corporate program, which encourages the purchase of products—some which contain BPA or known carcinogens—as a fund-raising mechanism. We might well ask if there are not conflicts of interest present within the research funded by such organizations, but to do so may be to close the few doors currently open to the advancement of breast cancer treatment research. Nevertheless, differences in the amount

of money focused upon prevention and treatment versus causation tell where the biases lie. Nobody knows exactly how much money is spent on cancer research. The Breast Cancer Action website gives statistics for 2007 that show \$572.4 million were spent by the National Cancer Institute (NCI), the National Institutes of Health (NIH) spent \$705 million, and Susan G. Komen for the Cure Foundation spent \$162 million (Breast Cancer Action 2016). In 2013 breast cancer research from the NCI, NIEHS, Komen, Avon, and the Breast Cancer Research Fund totaled over \$1 billion annually and did not include information from state-funded research programs, hospital and medical school funding, private foundations, non-profit allocations under \$1 million, or pharmaceutical research (Breast Cancer Consortium 2016). Nearly all of this money goes toward prevention or cure; very little is proportionately spent on causation. For example, \$70 million has gone to the NIEHS Breast Cancer and the Environment Research Project from 2003 to 2013 (Sheridan 2013).

Without diminishing the powerful work of activist organizations, journalists, environmentalists, scholars, and theoreticians, resulting in significant, if slow-moving, advances to change policies and regulations, there continues to be a significant avoidance in the public mind toward the insidious nature of poison placement. The work of addressing toxins in our bodies has taken place largely in the arena of public activism, with the goal being to force legislation that will restrict and reduce distribution. However, beyond the activities of these committed groups, a large percentage of the American population continues to embrace plastics, pesticides, herbicides, toxic soaps and cosmetics, without knowing—or choosing to ignore—how seriously toxic exposures may be affecting their health. Just as the pink ribbon campaign focused on breast cancer

awareness, we need to vigorously advance public awareness about the prevalence and danger of our toxin-saturated culture; this will be the key to counteracting the prevailing forces of the chemical and defense lobbies.

Environmental justice

The war against environmental toxins has been historically fought as an issue affecting the wilderness. In spite of Rachel Carson's narrative picture of a suburb with no birds, a far more prevalent idea of environmentalism maintains an ideology of nature as wilderness, plants and landscape in pristine condition, unused and remote (Cronon 1996). This model presents nature as someplace "over there," not where we live and work every day, and certainly not in our bloodstream which is categorized under the regimes of science and medicine. Far less emphasis has historically been placed on environmentalism as an aspect of "nature within," or public health. In the few instances where these arguments have been made, they are framed around environmental justice issues, and focus on diseases of racial minorities and the poor, easy targets of blame for their "lifestyle" factors. Public apathy to these causes has been high since Ronald Reagan and the rise of neoliberalism, so environmental justice advocates who do address the critical aspects of our avoidance are not winning the public relations war, itself a result of institutionalized racism and classism. Some writers and activists focus on the dangers of toxic exposure to children, confident that nobody would dare openly suggest that the health concerns for children are not important. Groups, such as Moms Clean Air Force, carry a broad appeal across the socio-political spectrum by calling on all mothers to come out in favor of a healthy environment for their children. Nevertheless, while concern for the wellbeing of its children is the mark of a civilized society, far more is at stake.

There are some clear iniquities in the incidence of breast cancer across race and class. High-quality neighborhoods offering healthy amenities are the least affordable for low-income people. Consistent with the geography of racial and class-based distributions, living and/or working near industrial pollution is more likely to lead to a higher incidence of environmental illness than daily life spent further away from dirty air, buildings, earth, and water.

We also know that obesity is an important factor in developing breast cancer. Obese women are 1½ times more likely to be diagnosed with breast cancer after menopause, and are more likely to be diagnosed at later stages. Higher amounts of physical activity, leading to lower risk of weight gain in adulthood, is an important factor in reduced occurrence, but low-income people are less likely to get sufficient, high-quality exercise. In addition, research shows that low income neighborhoods attract more fast-food outlets and convenience stores, stocked primarily with fats, cheap carbohydrates, and sugars, as opposed to full-service supermarkets and grocery stores with fresh produce and protein. Affluent neighborhoods provide more good restaurants, fresh food options, and opportunities for safe physical activity, than poor neighborhoods. “It is economic deprivation that is obesogenic, and one key predictor of weight gain may be low diet cost” (Drenowski 2009).

Obesogens are certain toxins that affect the endocrine system and are related to the development of uncontrollable weight gain. Endocrine imbalances disrupt hormone regulation, effect metabolism, and promote mutation. Endocrine disruption is one of the most overt symptoms of toxic exposure. Thus there is a strong correlation between toxins to obesity, and obesity to cancer, pointing back to poison placement affecting our bodies

in ways that have too frequently been defined as lifestyle factors, blaming the cancer victim or diabetic for failing to exercise and eat right when there is overwhelming evidence to suggest that these lifestyle choices alone may not be sufficient to combat weight gain/loss. Exercising and eating nutritiously are important, but we are being made fat (and thus ill, debilitated, blamed, discriminated against, and shorter-lived) by our exposures (Grün and Blumberg 2009).

In her study of breast cancer activism, Barbara Ley demonstrates how focusing on lifestyle factors as a means of empowering women can backfire when looking at issues of race and class. Specifically, she cites a brochure distributed by the Breast Cancer Fund of San Francisco, one of the most prominent activist groups dedicated to addressing breast cancer and toxicant linkages, that explains how women can diminish their exposure through consumer choices. In addition to mentioning healthy food choices and exercise, the brochure suggests limiting use of hormonal birth control methods, avoiding HRT through natural, herb-based interventions, purchasing green cleaning products, purchasing only canned goods that are BPA-free, and buying water filters for their homes (Ley 2009, 151-152).

These interventions tend to be cost-prohibitive for people living in high-stress situations on a budget that is already too small. Low-income women may be unable to use other forms of birth control, such as IUDs, which don't add hormones to the body. Condoms and other one-time methods of birth control are expensive, not covered by insurance, and may not provide enough security for women who cannot afford to become pregnant. Herbal remedies are extremely expensive, with most single-ingredient herbal capsules selling for five to fifteen dollars for one-months' supply, and again, these are not

covered by insurance. BPA-free cans are generally only found in specialty grocery stores such as Whole Foods, not the WalMart or dollar stores low-income shoppers frequent. Apartments that are affordable for low-income women often come with a directive to comply with pesticide spraying, which is invariably laced with harsh toxins. Therefore, even if these women are willing to make the lifestyle changes suggested for avoiding toxic exposures and reducing cancer risk, they may not have the agency to be able to act on those recommendations.

Direct exposure to toxins based on geographic location, such as living next to a coal plant, or work-related exposure—with lower income workers often taking jobs that have the highest risks—is common (White 1998). Within these poor, toxin-saturated neighborhoods, there are probably insufficient numbers of medical clinics, safe parks, community centers, gyms, swimming pools, and other amenities, that would allow residents to participate in healthy lifestyle activities. Place is therefore now understood as a more complex contributor to the development and survival of cancer than simple proximity to a polluting industry or poisoned soil and water. Safety determines whether a child can walk to school, exercise outside, or visit a playground. If grocery stores are far away, people without automobiles make do with convenience stores and processed foods, if a medical presence is not established in underdeveloped neighborhoods, people are less likely to visit a doctor with a nagging concern (Keiser 2012). Lower-income people are more likely to put off getting a diagnosis due to limited, substandard insurance plans with high deductibles that may also fail to cover the latest treatment protocols. Recent research shows that African-American women are not offered participation in clinical trials as frequently as white women (Keiser 2012). White women are more likely to undergo

advanced surgical techniques, including sentinel lymph node biopsies, than black women (Dallas 2012).

Breast cancer statistics with regard to race and class show significant disparities among women, often in complex formulations. For example, statistically, we know that white women are the most likely racial group in the U.S. to be diagnosed with breast cancer, but they are also the mostly likely to survive, when survival rate is measured at the 5-year mark (91%), even with equal treatment between racial groups. While white women are more likely to get breast cancer, African-American women are more likely to die from it; breast cancer is the leading cause of cancer death among African-American women in the U.S. between the ages of 45-64. In this same age group, black women are 60% more likely to die from breast cancer than white women. Under age 50, black women have a higher incidence of breast cancer *and* higher death rate, as well as a lower survival rate (Keiser 2012). Among Latinas, the diagnosis rates are much lower, but they also are diagnosed much younger, with more aggressive versions of breast cancer, and their 5-year survival rate is as low as African-American women. For both African-American and Latina women, even when there is equal access to good health care, disparities are still present. In other words, although these women may be receiving the same kind of quality healthcare as white women, their survival rates are lower. The same is true for Native American women, who have the lowest survival rate of any racial category in the U.S. at 60% (Keiser 2012). Explanations for these disparities are at this point unclear, but environmental factors are a chief consideration. If treatments are equalized, but survival rates remain disparate, then clearly other determinants are at play, and these may well include the presence of toxins during what the research community

calls “windows of opportunity,” those periods in a girl’s or woman’s life when her body is most susceptible to change and mutation.

Research now indicates that in the U.S. breast cancer rates are rising among younger (20s, 30s) women. According to Rebecca Johnson, leader of a recently released study of breast cancer in younger U.S. women, rates have been going up 2% every year since 1976, from one in 65,000 to one in 34,000. Johnson suspects environmental causes and endocrine-disrupting exposures including birth control. “We think that the likelihood is that since this change has been so marked over just a couple of decades, that it’s something external, a modifiable lifestyle-related risk factor, or perhaps an environmental toxic exposure” (Reuters 2013).

This phenomenon is also seen in developing countries, such as Haiti, which have become toxic dumping grounds for U.S. industrial waste (Silberner 2012). If exposures are occurring among young girls during these window-of-opportunity periods, the timing for the development of cancer would result in elevated numbers among younger women. Where before breast cancer was tied to aging, it is now quickly becoming an illness for every age, with environmental justice and the age and degree of exposure being key determining factors in who gets diagnosed, treated, and who survives.

Biopower and powerlessness: the double-victim

In Chapter 1 it was determined that, in some instances, it is realistic to talk about toxin-induced cancer as a byproduct of an actual, not metaphoric, colonization of the human body. The experience of illness can be likened to a colonizing experience in that patients’ bodies are handed over to power figures (doctors, hospitals, technicians, surgeons, nurses) who determine what will happen to them.

Just as political and economic colonialism took over geographic areas, modernist medicine claimed the body of its patient as its territory, at least for the duration of the treatment. “When we’re admitted to a hospital or even visiting a doctor,” writes Dan Gottlieb, who as a quadriplegic has extensive experience with such visits, “the forms ask for ‘Patient Name.’ We stop being people and start being patients. . . . Our identity as people and the world we once knew both are relinquished; we become their patients and we live in their hospital.”^{xi} Gottlieb’s anger reflects a widespread resentment against medical colonization. (Frank 10)

Indeed, the experience of being ill has often been defined by a sense of powerlessness brought on by the implied (sometimes overt) assumption of power imposed by health care professionals and institutions.

In *The Birth of the Clinic*, Foucault describes how the process of the medical gaze fundamentally overlooks or diminishes the personhood of the patient, even as it explores in microscopic detail the symptoms and physiology of the problem. “In order to know the truth of the pathological fact, the doctor must abstract the patient . . . the medical reading must take him into account only to place him in parenthesis” (1994, 8). What is more, the patient comes to be a representative “portrait” of the disease: “he is the disease itself, with shadow and relief, modulations, nuances, depth . . .” (1994, 15). As a member of what Susan Sontag has dubbed “the kingdom of the sick,” (1977, 3) the medicalized patient is removed from the family, “the natural locus of life” (Foucault 1994, 17), and into the medical gaze, where “The hospital doctor sees only distorted, altered diseases, a whole teratology of the pathological” (Ibid.). Thus the patient merges with the monstrousness of her biological distortion, classically termed *karkinos*, Greek for “the

crab,” because “The tumor, with its clutch of swollen blood vessels around it, reminded Hippocrates of a crab dug in the sand with its legs spread in a circle” (Mukherjee 2010, 47).

Foucault carries the spatialization of illness to the seclusion of the ill in hospitals, clinics, and rehab centers, where people are removed from productive society and become a doubly burdensome social problem, in that they must be cared *for*, and they can no longer produce through work. In this way, the kingdom of the sick becomes subsumed by the power of the state, which is called upon to administer and regulate the conditions of the practice of medicine, and of public health in general.

In *Discipline and Punish* (1977), Foucault extends his analysis of public health to the role of the hospital in imposing a disciplinary role upon the populace, made possible in part when the doors of the hospital were opened to the lower classes. Here they were treated by upper-class physicians, thus reenacting an old social hierarchy within the establishment of a new institution: the lower-class patient defers to the middle-class physician. Through the reporting of data and statistics regarding public health, and the enforcement of quarantines, institutionalization, and other methods of bodily control, the hospital becomes a means of state surveillance. David Armstrong carries this analysis forward to the doctor-patient relationship, whereby the ill body is scrutinized by the medical gaze:

In this way the various clinical techniques which doctors have used to study the body as an object are not merely the symbols of a repressive force but are components in the productive assembly line through which reality is created. The humble stethoscope, invented by Laennec in the early nineteenth century is

simply made up from rubber tubing, ear pieces, and a bell, but it functions as a complex piece of machinery in constructing bodies (23-24).

If standard biomedical treatments construct bodies, they also construct illness and the heroic narrative. Jackie Stacey defines this as “the appeal of the masculine hero narratives of science” where “your body becomes the battleground between good science and bad disease. If you give yourself up to their wisdom and follow their instructions, you stand the best chance.” Failure to do so can cause patients to be labeled as uncooperative, radical, dangerous (11-12).

Gender and breast cancer

There are difficulties in gathering statistical information on lesbian healthcare, including the obvious one of women not self-identifying as lesbian to their healthcare providers, for any number of reasons. Too, it is possible that the surveillance and depersonalizing experience of the medicalized patient may be a contributing factor as to why lesbians are less likely to seek early diagnosis and treatment for breast cancer. The Health Resources and Services Administration of the U.S. Department of Health and Human Services reported *for the first time* in 2011 on disparities in health care for lesbian and bi-sexual women indicating that contributing factors include higher rates of obesity, mental health problems, substance abuse, higher cigarette and alcohol use, lower incomes, poor patient-provider relations, and poorer health care options (Maril 2011).

In describing some of the factors surrounding the poor data on lesbians and breast cancer, Licensed Clinical Social Worker Liz Margolies writes:

I live in New York City and do not have cancer. Sometimes, I imagine a lesbian who has just been diagnosed with cancer and is living in a small town in Utah or

Iowa, not in one of the few cities with lesbian cancer programs. I wonder if it is safe for her to be out to her oncologist. This woman doesn't have the option of joining a lesbian cancer support group. Will she go to a group that is comprised of heterosexual women? Will she feel safe being out there? Her partner can't go to a caregiver group for lesbians. And do we really think she'll be comfortable talking about the effects that chemo has on her sex life in a roomful of men? I picture the two of them using the internet to learn more about their cancer and survivorship issues. Whenever I visit a website, I pretend I am this couple and type the word "lesbian" in the search box. More often than not, the search produces no results. Invisible still (2011).

Jackie Stacey argues that cancer and lesbianism are united through the cultural taboos that encompass both as elements of monstrosity and horror; both have been historically dominated by discourses of "the unnatural." Further, correlations between the polluted, or filthy female body, and the pollution of cancer to the body's natural well-being, recall feminist discourses on boundaries and the body. Cancer, as a boundary-crossing aberration, mirrors those homophobic discourses which insist on women's behaviors and women's bodies falling in line with the *status quo*. Quoting Kristeva, Stacey argues "If 'abjection is the horror of not knowing the boundaries of distinguishing "me" from "not me",' then this pertains to both the C word and the L word as they have been constructed in the popular imagination of this culture" (78). If we accept Stacey's premise, that both cancer and lesbianism startle the public imaginary in similarly confrontational and disturbing ways, it is not difficult to imagine how complicated it could be for lesbian women to approach their cancer.

Men who have breast cancer also have unique difficulties associated with diagnosis. Many men do not know that they are able to get breast cancer; others avoid going to the doctor because they are embarrassed, frightened, or unaware of the warning signs of breast cancer. Obviously, delays in diagnosis and treatment affects outcomes with regard to metastaticization and survival. “I’m kicking myself I had not gone earlier,” said one 46-year old man with a breast cancer diagnosis. “I should have gone right away. [But] my major worry during this time — and I wrote this down — is looking foolish and having my wife look at me: ‘Are you kidding?’ So I didn’t say anything to anybody” (Hambleton 2013).

Correlations between evidence of extreme toxic exposure at the USMC Camp Lejeune military base and the highly unusual prevalence of breast cancer in men who lived there are garnering a great deal of attention, in part because it is one of those grim cancer clusters that cannot be reproduced in a laboratory, and because the evidence linking the grossly polluted drinking water (benzene, perchloroethylene, and trichloroethylene most notably) with this unusually high rate of male breast cancer is so compelling. It is somewhat ironic that one of the best breakthrough cases of actual linkages between toxins and breast cancer is coming through men, rather than women, but part of the genius of this phenomenon is the simplicity of the male body, as compared to women. Because women go through so many “windows of opportunity” with regard to hormonal exposures, including menarche, menstruation, birth control, pregnancy, lactation, HRT, and menopause, correlations between environmental toxins and natural exposures to fluctuating hormones are that much more difficult to measure and study. Men present no such complications (Williams 2012). More about Camp Lejeune and its

importance to discourses about environmental toxins and breast cancer has been discussed in Chapter 2.

Objectification and blame in the kingdom of the sick

In addition to the experience of being managed, controlled, unheard, overpowered, and depersonalized by the medical institution (and its implements), and the subject position of racialized minorities, the poor, men with breast cancer, lesbians, and other marginalized people, the experience of illness in and of itself is one which severely challenges one's sense of personhood. In *Illness as Metaphor*, Susan Sontag writes her thoughts and experiences of being ill based upon her own diagnosis with breast cancer in 1976. She explores the stereotypes and projections that society places upon the ill--the romance of consumption, the cold dispossession of the cancer patient, or the assumption that the patient deserves their illness due to a bad or melancholy temperament. Indeed, the notion that we are responsible, to blame even, for our own diseases is one which has not abated to date, and which well-serves those industries that would prefer not to be deemed responsible for contributing to debilitating human illness. Lisa Diedrich argues that "in the 1990s the emerging politicization that can be discerned in the illness narratives of Sontag, Lorde, and Sedgwick gets covered over by a neoliberal mode of being ill and doing illness that emphasized the discourses and practices of personal responsibility in matters of health" (27).

This critique has exploded into the discourses of those who find a conservative, neoliberal agenda at the heart of the Susan G. Koman For the Cure Foundation, with its lopsided emphases upon research and lifestyle, and virtually no acknowledgment of environmental risk factors and cancer prevention programs There is no profit in cancer

prevention, but there is a great deal of money to be made not just in the manufacture and sale of toxicants, but also in research, healthcare, mammography, treatment, and selling products with pink ribbons on them (King 2006, Sulik 2011, Shabekoff 2010).

Conversely, there is a great deal of money to be lost if protective legislation, such as GMO labeling or the precautionary principle, were to be enacted.

Most commonly, the causes of cancer have been attributed to lifestyle issues. These include such factors as diet, exercise, stress, and mental health, and contribute to a great deal of confusion among the general populace, as they regularly read reports which first claim a particular food or beverage, for example, causes cancer, and later are told those studies were incomplete and inaccurate. This back-and-forth goes on so consistently, people can easily wind up making no lifestyle changes with regard to their health.

Our heads are kept spinning with conflicting information, so much so that there is nothing to do but stand still and wait for the hurricane of information, disinformation, studies funded by questionable organizations, studies that are improperly designed, studies that are misinterpreted, to stop swirling around and *conclude something*. This can translate into a very personal sort of paralysis by analysis, a sense that one can or should be doing something to save one's own life, but unable to take *any* kind of action for fear of choosing the wrong path. A glass of red wine per night, for heart health, or not, as a cancer preventative? To chemo or not? Chemo and radiation, or will one be just enough? Prophylactic mastectomy? Quit the job to reduce stress, or risk induced stress due to a lower income? Throw out the old water bottle made of BPA plastic, and take your

chances with a new type of plastic that has not been sufficiently studied yet? Purchase only organics, but eat less often as a cost-cutting measure?

Sontag points out that historically cancer patients were deemed to have fallen ill due to their own personality disorders, with cheerfulness offered as a preventative for breast cancer in 1885. Seen in today's terms, this is a recipe for repression, leading to . . . cancer (53).

Ostensibly, the illness is the culprit, but it is also the cancer patient who is made culpable. Widely believed psychological theories of disease assign to the luckless ill the ultimate responsibility both for falling ill and for getting well. And conventions of treating cancer as no mere disease but a demonic enemy make cancer not just a lethal disease but a shameful one (Sontag 1976, 57).

This mandate to be cheerful continues into the 21st century, and figures as a form of “tyranny,” according to Barbara Ehrenreich, another cancer victim (2009). *Pink Ribbons, Inc.* (King 2006) and *Pink Ribbon Blues* (Sulik 2011), provide thorough documentation of the manifold ways in which contemporary women are expected to remain cheerful throughout their experience with breast cancer. Audre Lorde, another breast cancer victim, has critiqued “looking on the bright side of things” as “a euphemism used for obscuring certain realities of life, the open consideration of which might prove threatening or dangerous to the status quo” (Lorde 76).

In Samantha King's book, and Lea Pool's film by the same name (based upon King's work)—*Pink Ribbons, Inc.*—are documented the experiences of women who find that the expectation placed upon them as breast cancer victims is one of *survivorship*. They are not expected to die from breast cancer, which is messy and depressing,

decidedly uncheerful, certainly unsuccessful. Rather, the emphasis is upon survival, an uplifting message of heroic (or “she-roic” to borrow from Gayle Sulik) proportions that sends a positive message to other breast cancer victims. As King points out, following Lorde, to die from breast cancer might be dangerous to the petro-chemical hegemony—an act that could dim the cheerful, pink world of the breast cancer warrior-goddess and survivor, and eventually point to the culpability of the cancer-industrial complex (104). Indeed, many breast cancer victims have expressed a sense of being double-victimized: to die is to be weak, to have failed to fight back hard enough, to let the others down, or to have been a neurotic person with a “cancer personality” (Pool 2011, Michaels 2008).

This results in a representation of breast cancer as being; something that somebody “fights,” and survives. Women who fail to take on the responsibility to be aggressively positive about their illness are deemed as subversive, and this follows into every aspect of breast cancer patienthood, including maintaining a presentable appearance. Audre Lorde describes her experience of visiting her treating physician’s office, post-op, without a prosthesis:

When I walked into the doctor’s office, I was really rather pleased with myself, all things considered, pleased with the way I felt, with my own flair, with my own style. The doctor’s nurse, a charmingly bright and steady woman of about my own age who had always given me a feeling of quiet no-nonsense support on my other visits, called me into the examining room. On the way, she asked me how I was feeling.

“Pretty good,” I said, half-expecting her to make some comment about how good I looked.

“You’re not wearing a prosthesis,” she said, a little anxiously, and not at all like a question.

“No,” I said, thrown off my guard for a minute. “It really doesn’t feel right,” referring to the lambswool puff given to me by the Reach For Recovery volunteer in the hospital.

Usually supportive and understanding, the nurse now looked at me urgently and disapprovingly as she told me that even if it didn’t look exactly right it was “better than nothing,” and that as soon as my stitches were out I could be fitted for a “real form”

“You will feel so much better with it on,” she said. “And besides, we really like you to wear something, at least when you come in. Otherwise it’s bad for the morale of the office.” (60)

Lorde explains that she had a difficult time finding the words to express her outrage to the nurse at the time. But in her journal she writes:

For me, my scars are an honorable reminder that I may be a casualty in the cosmic war against radiation, animal fat, air pollution, McDonald’s hamburgers and Red Dye No. 2, but the fight is still going on, and I am still a part of it. I refuse to have my scars hidden or trivialized behind lambswool or silicone gel. I refuse to be reduced in my own eyes or in the eyes of others from warrior to mere victim, simply because it might render me a fraction more acceptable or less dangerous to the still complacent . . . (61-62)

In what has come to be a characteristically ironic twist, the Look Good, Feel Better program was developed by the Cosmetic, Toiletry, and Fragrance Association

Foundation (cosmetics and fragrance are known to feature carcinogenic and nano-chemicals, continue to be unregulated, and are, as with so many household toxins, ubiquitous). The program, working in conjunction with the National Cancer Society, was founded upon the idea that women who appeared normal, through the use of masking techniques such as wigs, prostheses, and cosmetics, would better recover from the assault on their traditional femininity—their appearance, and their two perfectly balanced breasts. For some women, this is undoubtedly helpful, but also sends a troubling message about the politics of femininity and appearance, survivorship and invisibility (Sulik, 38-39). The masking of a breast cancer victim's experience of mastectomy, chemotherapies, radiation, and neurological damage—to name only a few—encourages victims to blend into the norm, effectively relegating their experience invisible, and thus less troubling to society. As Lorde experienced, for those women who do not care to participate in performative normativity, the reactions to their chosen appearance can be critical, harsh, attacking, and oppressive.

Objectification and dignity in the kingdom of the sick

Those who are ill . . . suffer insult to their whole being. They experience a series of intimate insults to the aspects of their existence most integral to being human. Because of the event of illness, these patients lose their freedom to act; they lack the knowledge upon which to make rational choices or to regain their freedom to act; they must place themselves in the power of another human, as petitioners, to regain their humanity; their integrity (i.e. self-image) is shattered, or at least threatened. In short, those patients who have just experienced illness as an acute event or who have lived with it as a chronic accompaniment of life are deprived in

varying degrees of those things which distinguish humanity from other forms of existence (Pellegrino 2008, 94).

However much an individual suffers loss of identity and autonomy, vulnerability, depersonalization, institutionalization, projection, and other degrading experiences related to personal worth, and due to the nature of socio-biomedical institutions and treatment protocols, there is still the matter of the basic assault upon an individual's dignity that is inherent to the experience of being ill. As Lisa Diedrich puts it, "illness in general and terminal illness in particular is precisely about the relationship of the social and individual self to loss" (87). What is lost is health; well-being; the ability to make one's own decisions on matters where she has some knowledge (daily life); a sense of autonomy; privacy—bodily, financially, statistically; the ability to be dominant, to lead, to be self-reliant; to take care of one's self with regard to even the most basic of tasks; and to function in society, to be productive, to contribute. Evaluating Oliver Sacks' description of his innermost feelings at a time when he had broken his leg, Diedrich highlights his experience of an *instantaneous* change to his overall sense of self. He becomes dependent upon the medical establishment to restore himself to *himself* (86). As Sontag has pointed out, this transition from the kingdom of the well to the kingdom of the sick can happen instantaneously, and has dramatic effects upon an individual's identity and sense of freedom, security and safety (1977).

The isolation of being in pain can add to this sense of loss, in that pain is inherently indescribable. As Elaine Scarry explains, the terminology that we use to describe pain is based upon other kinds of action verbs that in reality have little to do with the felt experience of pain: stabbing, throbbing, shooting (5). Efforts are made to

find things to compare pain to (“It’s worse than childbirth”), or to put it on a scale from 1 to 10, but these are so greatly limiting in accuracy as to be useful only in a very generalized sense. “Physical pain does not simply resist language but actively destroys it” (Ibid.). As a result, pain is uniquely able to bring someone to a state of isolation. When one is in pain, one is aware of entering a world that the unpaired, the healthy, the helpers, are free from inhabiting, at least in that moment. The separation between those in pain and those out of pain is as real as if a glass wall were dividing them, and this also contributes to a loss of identity, and a greater sense of vulnerability and weakness. Where once you were somebody living an ordinary life and conducting ordinary activities, now you are somebody else, a person others can’t relate to, a person alone with their pain. According to Scarry, the inexpressibility of pain also causes difficulty in being believed, in having one’s pain “politically represented.” Because, as she explains, pain is unique to an individual and its presence is impossible to share, therefore it is split between the awareness of the person in pain, who is quite certain it exists, and the person who witnesses another’s pain and may have doubts. The person in pain must make themselves believed. Children learn this early: if they cry out, or exaggerate their symptoms, they are more likely to receive attention to their pain than if they calmly register a physical complaint.

It is not simply accurate but tautological to observe that given any two phenomena, the one that is more visible will receive more attention. But the sentient fact of physical pain is not simply somewhat less easy to express than some second event, not simply somewhat less visible than some second event, but so nearly impossible to express, so flatly invisible, that the problem goes beyond

the possibility that almost any other phenomenon occupying the same environment will distract attention from it (Scarry, 12).

The politics of invisibility

Although breast cancer is likely to hit one out of every seven women in the United States, for the most part it is a disease of invisibility. As mentioned previously, there is considerable pressure for women to disguise the effects of her disease through the use of cosmetics, wigs, prostheses, and clothing choices. To be an identifiably ill woman with breast cancer may evoke difficult feelings for people who see her in public, and for her and her family, who will be aware of the challenge that the performance of illness through signifiers such as a bald head, and a flat or lopsided chest, has upon themselves and other people (Lorde 1997). To present oneself as ill, and to refute the diminishment that is inherent to the label, is a test of character and identity that some people simply cannot address when they are feeling poorly, in pain, challenged, or off-kilter. If the patient's cancer responds to treatment positively, in time her hair, eyebrows, and nails will grow, she will discover the style of clothing that makes her the most comfortable, and for the most part she will blend in when out in public; she may return to work, resume her life, and her disease status will be visibly hidden, even if she in fact has not yet made it to the five-year "survivor" marker. If a breast cancer patient dies, the invisibility is complete.

This invisibility is part of what the "breast cancer awareness" movement is responding to: we must be made aware of the epidemic through advertising campaigns and pink ribbons. "Out of sight, out of mind" is one of those maxims of human nature that is all too true in this instance: we are challenged to remain vigilant over things that

cannot be perceived. This absence of perception is also one of the features of the toxic environment. Chemicals are rarely visible, or are disguised through color and other additives. Thus when we are talking about breast cancer and environmental toxins, we are often referring to things that do not seem to be part of an ordinary life or an ordinary day. Both are difficult to perceive. And yet, we are swimming in a toxic soup, and surrounded by people made ill through exposures, be it asthma and other respiratory problems, diabetes, cancer, metabolic syndrome, autism, or other illnesses currently suspected and being studied for their relationship to toxic exposures. It is also this aspect of invisibility that causes people to become highly fearful of their daily environment. Once we begin to research the extent of our ordinary exposures we come to find that toxins are everywhere and nowhere, all around us, and unable to be seen, sometimes inducing a mock paranoia that ultimately may be emotionally unsustainable by the average citizen.

In researching nuclear New Mexico, Joseph Masco identifies and names this particular aspect of the radiation landscape as “the nuclear uncanny,” a term which fuses Freud and science fiction, describing the fear, doubt and confusion that people experience when they live near sites of suspected radiation. In classic Freud, the uncanny refers to “a psychic process whereby sensory experience becomes haunted and untrustworthy . . . a sudden loss (or distrust) of one’s senses” (28); Masco deploys this term as a means of describing the strange psychological territory that people find themselves in when they are fearful of that which cannot be perceived, not unlike a fear of ghosts or spacemen. What is even more disturbing, however, is that it is more than a little realistic to suspect that radiation *has* permeated the Los Alamos landscape, particularly among local sites where toxic waste was dumped back in the 40s and 50s. Thus, the nuclear uncanny goes

beyond the primitive fear of things that go bump in the night to become a reality of contemporary existence. Borrowing from Masco, then, we could easily move from a discussion of the “nuclear uncanny” to one of the “toxic uncanny,” with an understanding that in both cases there is a “colonized psychic space” (Masco 28) that oppresses upon the individual’s sense of well-being, agency, and ability to take action toward self-preservation.

Extensive surveillance has developed as a consequence. Until very recently, older women were encouraged to get a mammogram every one to two years, exposing the breast to ionizing radiation in an effort to see cancer early, the cancer industry apparently deciding that it was more important to detect cancer than to avoid X-rays. The U.S. Preventive Services Task Force recommendations on this changed in 2009, in response to new evidence indicating that frequent mammograms may be the cause of unnecessary treatment and surgery for early detected breast cancers that are non-threatening, but still bear the frightening “C-word” label. Once the primary method of breast cancer prevention, mammograms are now revealed to release a small, but significant, source of radiation exposure that can lead to breast cancer, and recommendations have changed the age for scheduled testing from 40 to 50. Mammograms are also not fool proof, with roughly 10% of all cancers missed due to breast density. Although some women feel strongly that mammograms saved their lives, new evidence indicates that the effectiveness of mammography as a breast cancer prevention tool is negligible (Orenstein 2013). The history of the mammogram demonstrates how the relationship between economics, women’s health, and ever-changing scientific facts result in an inexact truth being marketed as a positive benefit with potentially harmful results.^{xii}

Deploying decolonizing methodologies

In response to the numerous ways in which the breast cancer victim experiences a real and metaphoric colonizing experience, methods of decolonization can be powerful in showing cancer patients how they can reclaim identity, understand the possible causes for their illness, and motivate others to examine their own illness experiences within the larger picture of toxins, neoliberalism, biopower, social justice, and everyday unregulated exposures.

In her discussion of the conditions of postmodernism, and suggestions for countering neocolonialism, Chela Sandoval suggests that the work that has already been accomplished by marginalized people throughout the world can serve as a model for an oppositional approach to the postmodern, postcolonial condition. In her discussion regarding Jameson's manifesto, *Postmodernism, or The Cultural Logic of Late Capitalism*, Sandoval argues against what she perceives to be Jameson's critique of discourses of identity and difference. While acknowledging the difficulties inherent in combating postmodernity, with its ability to co-opt whatever stands in its path, Sandoval judges that the manifestation of the work of various theories including postcolonialism, poststructuralism, feminism, queer studies, global studies, and ethnic studies, offer a particular alerity that can be utilized in a way that modernism and grand metanarratives never could, precisely because they are unrestricted by classical architectures and boundaries of structural reality. She goes on to say that the work that has been and continues to be performed through decolonizing methodologies, which have been of great significance in addressing third-world conditions, can and should be looked to as methods that first world activists can adopt when addressing the underlying conditions of

postmodernity and neocolonialism that has come to characterize contemporary life. She states:

If, as Jameson argues, the formerly centered and legitimated bourgeois citizen-subject of the first world (once anchored in a secure haven of self) is set adrift under the imperatives of late-capitalist cultural conditions, if such citizen-subjects have become anchorless, disoriented, incapable of mapping their relative positions inside multinational capitalism, lost in the reverberating endings of colonial expansionism, and if Jameson has traced well the psychic pathologies brought about in first world subjectivity under the domination of neocolonial drives in which the subject must face the very “limits of figuration,” then the first world subject enters the kind of psychic terrain formerly inhabited by the historically decentered citizen-subject: the colonized, the outsider, the queer, the subaltern, the marginalized. So too, not only are the “psychopathologies,” but also the survival skills, theories, methods, and the utopian visions of the marginal made, not just useful but imperative to all citizen-subjects, who must recognize this other truth of postmodernism—another architectural model for oppositional consciousness in the postmodern world (27).

A medical model from first nations peoples can serve as an apt metaphor here: the shaman is one who has already been through serious illness or disability and found a way not only to survive, but to guide others through the underworld of mental confusion, sickness, even imminent death, back to health. We can think about the condition of first world colonization, with its present inability to fully grasp the ungroundedness of its postmodern positionality, as the patient who is subject to the illnesses imposed by the

colonial condition. The act of looking to those in the postcolonial world who have grappled with this condition already is practical, efficient, and effective. “The countries with large and influential indigenous populations are well in the lead in seeking to preserve the planet,” points out Noam Chomsky, “while the civilized and sophisticated scoff at this silliness” (2013). This model is also subversive, creative, and necessary because it acknowledges the scholarship and activism of the othered and marginalized. Those who were dismissed in the past have become experts on fighting against colonial affects, carrying wisdom we desperately need.

As an antidote to the despair that Sandoval finds Jameson slipping into, with his dismissal of identity politics and difference as being too shallow to avoid cooptation into the vacuous pastiche of postmodernism, Sandoval suggests a “methodology of oppression” which is structured upon the notions of survival, particularly among U.S. third world feminists. She defines this movement as the critical driver that formulated a powerful feminism able to best respond to the various aspects of women’s experiences, including racial, ethnic, gendered, and queered. Developing out of critiques about 70s feminism, with its tendency toward hegemonic whiteness as the all-encompassing women’s experience, and its goal of being included in the world of white men, U.S. women of color found themselves being forced to move within and throughout women’s groups, because there was such difficulty in finding just one organization that could address each of their diverse experiences and satisfactorily express their unique and intra-conflicting needs, goals and demands. As a result, U.S. women of color developed a form of feminism that Sandoval refers to as

“ ‘differential,’ insofar as it enables movement ‘between and among’ ideological positionings.” This differential consciousness “functioned as a central locus of possibility, an insurgent social movement that shattered the construction of any one ideology as the single most correct site where truth can be represented,” and “depends upon the practitioner’s ability to read the current situation of power and self-consciously choosing and adopting the ideological stand best suited to push against its configurations, a survival skill well known to oppressed peoples” (58-60). Her “methodologies of the oppressed” pivot upon the idea of the differential, movement around and through various social constructs and ideologies as a means of reformulating and reappropriating meanings so they support social justice.

Kelly Oliver describes how the enacting of decolonizing methods creates a fluidity between an individual’s subject position (“one’s position in society and history as developed through various social relationships”) and subjectivity, (“one’s sense of oneself as an ‘I’, as an agent”) (72). Subject position and subjectivity operate together; however, while subject position is far more fixed (although not entirely immovable), subjectivity can be adversely affected by states of oppression, causing melancholy, suffering, pain, depression, shame, anger alienation (88). Oliver describes these common postmodern phenomena as affective responses introjected through the colonial subject position, and she applies the concept of the colonization of psychic space as “the occupation or invasion of social forces—values, traditions, laws, mores, institutions, ideals, stereotypes, etc.—that restrict or undermine the movement of bodily drives into signification” (43). This activity, “sublimation,” is the psychological process of redirecting primal aggressive and energetic drives into creative and active social

production, and according to Oliver is the key alchemical process that changes the mud of despair into the gold of self-expression and subjectivity; the inability to sublimate is the most devastating psychic oppressive affect of the colonizing experience.^{xiii}

Unlike subject position, which is far more rigid in its overdetermined state, subjectivity can be developed through the fluid, energetic action of resistance. Oliver explains: “If racist alienation undermines subjectivity and agency by turning the colonizer’s violence, and hatred inward against the oppressed self, then resistance can return that violence and hatred to the colonizer in ways that act as an antidote to the psychic infection and pathological subjectivity formed within the colonial context by reauthorizing and empowering colonized subjectivity” (73-74). Thus, the action of sublimation becomes important not only to the individual, but to the community which receives the redirected energies: the colonized.

In her work *Decolonizing Methodologies: Research and Indigenous Peoples*, Linda Tuhiwai Smith identifies “Twenty-five Indigenous Projects,” that have been utilized by indigenous researchers in order to gather evidence about their communities. This methodology circumvents hegemonic forms of research that have long traditions developed outside of third-world issues, although she acknowledges that many of these methods are also found in traditional academic fields of study, such as the social sciences. Nevertheless, these “projects” are undertaken with the understanding that they are able to provide their communities with a sense of taking back “control of our destinies.” She goes on to say, “These imperatives have demanded more than rhetoric and acts of defiance. The acts of reclaiming, reformulating and reconstituting . . . have required the mounting of an ambitious research programme, one that is very strategic in its purpose

and activities and relentless in its pursuit of social justice” (141). Among these projects are testimonies, storytelling, celebrating survival, remembering, connecting, representing, gendering, envisioning, reframing, naming, creating, and sharing.

Some of these methods have already been employed by feminists, patients’ rights advocates, medical practitioners and bioethicists to help patients negotiate the “kingdom of the sick.” That being said, few breast cancer patients have been willing to cross beyond the boundary that the medical establishment sets up with regard to their cancer causation. Medical practitioners, particularly those who work directly with patients, act as a bridge between science and human experience. They are, however, primarily trained in the sciences, not the humanities, and as such they align with those discourses that cannot corroborate linkages between toxins and breast cancer. Through examining the self-narrative work of breast cancer victims who have fought against the extreme loss of identity, personal power, and determination over one’s course in life, some cancer patients have already mapped a path that can be followed by others who want to fight not only for their own individual lives, but for those who will come after them. Some choose to frame their personal subjugated knowledge about their own cancer causation through the utilization of decolonizing methodologies outlined here, stepping beyond standard biomedical discourses into the sanctum of personal intuition and a knowingness unacknowledged, but not unimportant; the “work” of the critical discourse of subjugated knowledge that Foucault outlines.

In addition to the personal survival mechanisms that these methodologies deliver to individuals, this work is important collectively. As more opportunities to link breast cancer causation with environmental toxins appear, such as with the Camp Lejeune

cancer cluster, victims will follow these methodologies in order to assist with the hard work of pressing for legal damages and regulatory change. Acknowledging and documenting the levels of loss and pain experienced by cancer victims as a result of extravagant negligence will help establish the assignation of damages, which assists with the work of holding agents of poison placement responsible and forcing remedial action.

Keeping in mind these various factors of oppression breast cancer victims face as they go through their diagnosis, disease, treatment process, and survivorship or death, individual narratives can address the personal, social, and medical issues surrounding breast cancer, illness, and the environment. When self-stories and visual storytelling incorporate not only the experience of being critically ill, but also information about the various modes of oppression, including environmental toxins, visited upon the breast cancer victim, the messaging power of decolonizing texts becomes that much more devastating, inspiring, and proactive.

Conclusion

In this project I have explored cultural narratives surrounding linkages between environmental toxins and breast cancer. My purpose has been: to establish a basis for talking about environmental toxins and breast cancer causation that is grounded in a variety of cultural narratives, including but not limited to the state of the science; to examine how current discourses on place, space, neoliberalism and biotechnology might frame current conditions regarding the toxic body and breast cancer causation; to review visual and written cultural products on breast cancer for evidence of voices that express underlying beliefs about toxic exposure and breast cancer; and to examine how people with breast cancer engage with the biopower and environmental conditions that oppress them.

By basing this project upon Foucault's architectures of archaeology, genealogy, and subjugated knowledges, I have been able to privilege how people outside of standard biomedical discourses think, feel, and express their views on breast cancer, causation, the environment, and the experience of "knowing" or believing that their bodies are disrupted through toxic exposure, placing these knowledges on an even playing field with science and biotechnologies of breast cancer. I have also sought out and examined theoretical discourses to unearth a cultural history for how we think about the body, its relationship to the earth, issues of place and space, and political/economic theory regarding resource consumption and management. Through this examination, and in agreement with scholars, artists and activists such as Melinda Cooper, Hollis Sigler, David Fox, Susanne Antonetta, and critics of the pink ribbon movement Samantha King and Gayle Sulik, I conclude that we might well consider that our bodies are part of a neocolonial experiment

that brings corporate politics into the inner workings of the body, places I refer to as microgeographies. Further, that traditional decolonizing methodologies might well serve as a means for broadening the cultural conversation about breast cancer specifically, but also, I hope, for many serious illnesses that might be (or have already been shown to be) linked to toxic exposures. This is critical. Whoever controls the public discourse greatly influences what eventually happens to our bodies; it is crucial that we find ways to openly bring our subjugated realities regarding toxins and the body into public consciousness.

Summary, and Opportunities for Further Research

In Chapter One I sought out and examined a variety of theoretical narratives that unearth a cultural history regarding the body as a landscape, its relationship to the earth, issues of place and space, and political/economic theory regarding resource consumption and management. By engaging with the work of geographer Doreen Massey (1994), we found a narrative that supports reimagining the inner body as a collection of places with all of the political and social relations attendant upon that terminology. As such, the inner body can be subject to all the uses and abuses as any external place on the map. In reviewing theories of the postcolonial and neocolonial, such as those provided by Mbembe (2003) and Venn (2006), we have found a way to talk about what is happening in “inner” space in a way that places it inside of classical and contemporary discussions of colonization: its methods, transitions, motivations, subjectivities, and the like. Melinda Cooper’s work (2008) on the relationship between biotechnology and neoliberal economic theory was used as a neoliberal narrative template, as she lays out the key philosophical components upon which these theories are grounded; her work helps us

understand how important the virtually limitless innovative and profit-making opportunities inherent in inner space are to the neoliberal approach. To understand this is to at last see what biotech and pharmaceuticals have been seeing for a long time, the stories upon which their power is constructed: fresh terrain for a free and unregulated market which brings us to the borders of science fiction, biotech thrillers, and the realms of infinite corporate/governmental/military/industrial opportunities for development, exploration, and exploitation. Her work, and others like it, thus ignite opportunities and a desperate need for critical cultural analysis. Through examining these neoliberal narratives, juxtaposed against classical colonization theories, I argue that current conditions of the toxic body and the biotech industry are effectively another means of neocolonialism, opening up new opportunities for discourse, models for thinking about microgeographies and inner space, and reviewing previous means and methods of decolonization for mobilizing efforts to resist and address poison placement.

Ultimately, the lag time between where the captains of biotechnology have been dreaming of their infinite opportunities, and the point where cultural theorists and researchers are able to fully understand the depth of the neoliberal model as it relates to biology is deeply problematic. It is why I have proposed two methods for breaking through to ordinary people about such complicated cultural dynamics that are swift, simple, and potentially broad: images and memoir.

Chapters Two and Three covered personal narratives that are organized around the idea of a relationship between the toxic environment and the toxic body. Adopting the toxic body as a colonized object, we examined how decolonizing methodologies that engage with individual acts of representation (the image, the memoir) can serve to

contextualize an illness narrative so that it encompasses not only matters of the illness experience, but also illness causation. This is important on more than an individual basis because it has the potential to erupt into the arena of public discourse and change the level of acceptance of a new model that moves the locus of responsibility for the contraction of illness away from the individual, and into social and environmental factors, where it rightly belongs. Through the photographic work of David Fox (2010) and the paintings of Hollis Sigler (1999) we find opportunities for thinking of how the visual artist might engage with issues of toxicity and breast cancer causation that have not become part of the traditional breast cancer visual culture to date.

Further work could explore the power of social media in the transformation of discourse on this topic. Throughout the period of time while I have been conducting research for this study, I have seen changes taking place in the way that the public is approaching public health and the environment, particularly with regard to toxins and water. Most particularly, the situation in Flint, Michigan, whereby newer and cheaper means of treating water meant that chemicals corrosive to water pipes were delivered into the system and, in violation of Federal law, treatment to mitigate that corrosion was not added, creating lead contamination levels in the water that have serious health consequences for the public, and especially for children and their developing brains (Cable News Network 2016). That Flint, Michigan, is a poor and predominantly African-American community, and that local officials and the governor of the state failed to adequately notify the public when they first realized the problem, increasing and extending the exposure time for the public, has only added fuel to the discourse which now runs along the lines of “deliberate poisoning” and “overt racism” (Graham 2016;

Martinez 2016). In my Facebook and Twitter newsfeeds, constant posting on issues of water quality and weak government oversight written by not only environmental groups but also mainstream news sources reveals the extent to which this topic has taken hold in the minds of the general population. Further, the Flint, Michigan, disaster has brought new attention to old issues regarding water quality and environmental justice, particularly the uranium contamination in the Navajo Nation, and has also prompted other communities to more closely examine their water and discover breaches in the way that their water has been treated and water quality un/regulated (Norrell 2016). Since the issues surrounding Flint, Michigan, first came to her attention, activist Erin Brockovich has been travelling on an exhaustive schedule, from community to community, helping others address their concerns regarding toxic water. The tone of her posts is gradually becoming more and more angry, frightened, and frustrated (Brockovich 2016).

Photographer Mark Colman, of Portland, Oregon, has been conducting a visual campaign to address air and water quality, and posting his images on his Facebook page. These feature members of the community holding signs with statements such as “Please update pollution controls DEQ” (held by a child in a gas mask) and “Merecemos aire que sea limpio & puro” (held by a Latina in a flowered shawl). Somewhat reminiscent of the work of David Jay (2011), some of Colman’s images feature pregnant women and children, but place the photographs deliberately into the context of environmental concerns by featuring handwritten signs—the written word—insisting upon an environmental context, as with the work of Hollis Sigler. Unlike Richards, Jay, Matuschka, and other photographers, Colman does not overtly address illness, but his linkages are clear: these populations are vulnerable to environmental disease. The image

he took of Brockovich (Figure 21) was one she posted herself on her Facebook page, writing “They say a picture is worth a thousand words. I am sick and tired of the deception and the politics. In a modern society drinking water and air is a basic human right. And a slight subtle message attached. Can you see it?” Here she refers to her middle fingers holding up the sign (Facebook, Inc. 2016).



Figure 21. Facebook, Inc. “Mark Colman’s Facebook page.” Last modified April 17, 2016. Accessed April 17, 2016. <https://www.facebook.com/superkram?fref=ts>

Brockovich has become many communities' go-to person for finding out the truth about their water quality. Unable to trust the public figures who tell them their water is safe to drink when it is not, over and over again communities turn to a woman who has devoted her life to taking on government and corporations. Brockovich, of course, is not the only activist working in this arena. However, she is the only one who has had an Academy-Award-Winning film made about her life, with a glamorous movie star playing her, and a happy ending for members of the community who were made sick by the criminal actions of a big polluter. Unfortunately, in the real world, most activists are not movie-star beautiful, many do not win big settlements for the people they represent, and most big polluters continue to get away with egregious activity.

And yet the Brockovich phenomenon I mention refers back to Rancière (2009) and the process of discourse entering the realm of the sensible discussed in Chapter 2, and it is why I believe so strongly in utilizing artistic methods as a means of not only decolonizing our bodies, but of transforming our discourses, placing discussions of illness, particularly those suspiciously linked to cancers, Parkinson's, autism, and the rise of other mystery diseases of late capitalism at the crux, in the crosshairs, of our public conversation. To the extent that social media has functioned as a sort of collective living room for these conversations, and observing other ways that social media has ignited political action, I suggest this as a topic for further research relative to environmental justice. What large-scale Hollywood movies can do is entertain and shine a light on certain issues, but they cannot keep their films in the news cycle for much longer than it takes for an Academy Awards season to come and go. Social media functions as entertainment, social discourse, short news cycles, and continuous bombardment (which

can limit interest, too, however). Images that grab and affect do get shared; good ones have the advantage of making their point quickly, and the venue encourages text, much as Hollis Sigler's work did (1999). Powerful images of linkages between environmental toxins and illness seem to still require some kind of contextual language, but it is likely that as environmental toxins continue to be revealed as purveyors of deep illness, image-makers may no longer need to make context: it will be an acknowledged "truth" inside the cultural sensible.

As we saw in Chapter 3, the field of environmental memoir that Antonetta (2002) has opened up will hopefully inspire many more such works, incorporating a decolonizing methodology with the subjective voice. This form of memoir, what Pollan called the "superfund gothic" (2001) is not meant to be scientific, as was Carson's *Silent Spring* (1961), or even Steingraber's science/memoir *Having Faith* (2001). Rather, Antonetta's work dismisses the need for scientific corroboration of her story, advancing her personal subjugated knowledge as primary. She's telling what it's like to grow up in a toxic mess and, oh, by the way, everybody's sick, an inversion of Terry Tempest Williams' everybody's sick and, oh, by the way, my family are all downwinders (1991). It is my hope that more memoirs using this particular template will continue to appear, and that the superfund gothic will become a college-course-worthy genre in the field of memoir. With new evidence linking trauma to illness, and the inheritance of that trauma and proclivity for illness, hopefully we will see more people coming from disadvantaged and colonized backgrounds to tell not only about the political and social determinants of their behavioral and physical health, but the environmental ones.

Clearly Carson did not feel she had that choice, nor for her time would it have even crossed her mind to do such a thing. As a serious scientist, she sought to ground her controversial work in scientific evidence, validating her call for action through alignment with science. And yet the question remains, what would an environmental memoir by Carson have read like? Knowing that Carson suffered breast cancer while she worked on *Silent Spring*, is it possible to find her own environmental memoir written between every line? Certainly she continues to be a rallying icon for those on the political right who do not trust environmental theoreticians in any event, science or no. Such being the case, would she have dared to discuss her breast cancer, make linkages between the topographic environment and the internal? From her letters there is evidence she did believe there was a possibility of a correlation between her illness and environmental toxins, as Williams had felt about her family's history of cancer and exposure to radiation.

The step that Antonetta takes builds off of the work of Steingraber, Carson, Lorde, and Williams, pushing against the limitations of the scientific narrative that tell us we cannot know what is causing our cancers. It is her maneuvering around the science in order to foreground the anecdotal, a subjugated knowledge that is casually dismissed and silenced among breast cancer treatment protocols, which does the work of questioning the limits of science in a race against time.

Audra Lorde, who had mentioned in *The Cancer Journals* (1997) her concern with environmental poisoning and her own illness, had, in so many ways including this one, led the way on the discussion of breast cancer politics, writing as an African-American lesbian with breast cancer, and delivering a politicized breast cancer critique

still powerful today. Carson, Steingraber, and Williams are all middle-class white women, and this should not be overlooked. One of the things that attracted me to this topic in general was the idea that environmental toxins, and indeed breast cancer, does not discriminate along race/class/ethnicity boundaries. However, the inequity of exposure and treatment, as was discussed in Chapter 4, is a real factor. Possibly the inequity of education and life chances that enable memoir writing and publishing are equally real factors. Environmental memoirs written by members of minorities and poorer neighborhoods are needed. With the uranium water in Navajo land returning to the news cycle, and children being poisoned by lead in Flint and countless neighborhoods across the country, I hope we will have more poor and minority people writing literary memoirs about their personal, subjective, familial experiences in the toxic zone as a means of challenging standard biomedical narratives about the relationship between toxic exposure and all manner of diseases that inequitably affect the poor at higher rates.

Chapter 4 examined the numerous ways that poverty, race, gender, cultural expectations of beauty, and the role of “sick person” contribute to a breast cancer experience, and how activists, policy makers, critics, and other people evaluating the breast cancer experience are engaged in rewriting cultural narratives that do not serve issues of causation, such as the pink ribbon movement. This process, which is ongoing, serves to destabilize--decolonize--those narratives which support biopower and limit the opportunities that could be available for people with cancer to talk about their perception of their disease in a clinical environment; decolonizing processes help open up the conversation for those who want to get themselves and their families away from environmental toxins as a precautionary measurement, who want to identify for

themselves what they believe their cancer diagnosis means, and want to find treatment modalities and services that acknowledge this gap.

The role of social determinants in the contraction of breast cancer, diagnosis, and treatment is ready for further exploration with regard to issues of trauma, epigenetics, and illness. We now know that trauma has a strong effect on mental health, much more than was realized, in that this can actually be a physiological effect, not merely a socio-psychological one. As psychologists now believe, adverse childhood experiences (ACEs) are determinants for many conditions that lead to death in adulthood, including likely diseases such as depression and substance abuse, but also illnesses more frequently attributed to general wear and tear or lifestyle factors such as overeating or drinking, including heart disease, liver disease, and cancer. Many of these ACEs are familiar in impoverished communities: parental mental illness, substance abuse, neglect, imprisonment or criminal behavior, sexual abuse, violence, or verbal abuse. The groundbreaking study (1998) found “a significant . . . dose-response relationship between the number of childhood exposures and the following disease conditions: ischemic heart disease, cancer, chronic bronchitis or emphysema, history of hepatitis or jaundice, skeletal fractures, and poor self-rated health” (Felitti, et al., 250). What is more, of the over 17,000 people who participated in that study, the majority were middle-class and college educated, so poverty was not considered as one of the ACE indicators. The more ACEs that someone had, the higher their risk for poorer health outcomes in adulthood, including cancer. Someone with a high ACE score could, on average, have a life expectancy 20 years shorter than someone without any ACEs. Further studies have shown that ACE trauma can lead to permanent neurological damage, resulting in a

variety of illnesses, but also epigenetic changes (changes to the gene structure) that can be passed down from one generation to the next. What these studies suggest is that cancer can be caused by trauma, trauma that occurred during but also before one's own lifetime. And new studies show that exposure to toxins cause epigenetic changes (Singh and Li 2012).

Opportunities for breast cancer causation and prevention research based upon these findings and specific to traumatized populations abound. New understandings of what toxic exposure, poverty, and ACEs can mean for a family in generations to come suggest that we must take more seriously those exposures we allow today and provides new ammunition for activism based upon science. The family narrative among Jewish Holocaust survivors or the Native American genocide, the story that asserts that the trauma is “in their bones,” has been proven to be an accurate story scientifically. The story about being exposed to HRT or BPA is equally deserving of respect for the truth it carries. The subjugated knowledges of these people are at last scientifically corroborated; for some people, however—those who died without being heard—it is too little too late. Privileging science to the point of exclusion of subjugated knowledges can be inefficient, negligent, dismissive, and violent.

Epilogue

My love of art, and its ability to interject new challenges into what Rancière theorized as the political realm of “the sensible” (2009) has enabled me to see a possibility in changing the discourse of cancer causation from an outlier into a primary discursive topic. While art and memoir are by no means the only vehicular possibilities, they have the ability to transform personal experience into the public sphere in a

particularly compelling way. What begins as a lowly anecdote about a believed trigger for a deadly disease moves through the decolonizing territory of healing the wounded self, transfers into the process of healing the transgressed community, and pushes outward with a strong visual and metaphoric presence that requires no language in order to impact and compel.

A photographer friend of mine asked me: after having done all of this research on breast cancer, prevention, and art, how will this affect my own work? He knew I had intended to contribute an art and ethnography project to this dissertation, one that I could not get past the IRB because it included women self-identifying as breast cancer patients, being featured in photographs with their identities intact, and putting their illness identity, race, class, ethnicity, and possibly sexual orientation on display. At the time, my work included images of people with breast cancer, but didn't incorporate issues of prevention into the photographic frame. My intention now is to finish that project, and to consider the work of those I have discussed in this document who have come forward in making the correlation between illness of the human body and a toxic environment. I am particularly intrigued by the work of Hollis Sigler.

I had a conversation with a pediatric emergency physician and licensed hypnotherapist not long ago. When I described this project to him, he was particularly interested in the question I frequently ask people I meet who have had breast cancer: "What do you think caused your breast cancer?" I had told him they always had an answer, and often it was exposure to environmental toxins of some kind. This intrigued him. He felt that it was something he could use to help his hypnotherapy clients (many of whom were cancer patients) in dealing with the difficulties posed by their illness.

Empowered with an awareness of a client's belief and illness narrative, the antidote of a counternarrative might make all the difference.

Afterword
Decolonize This

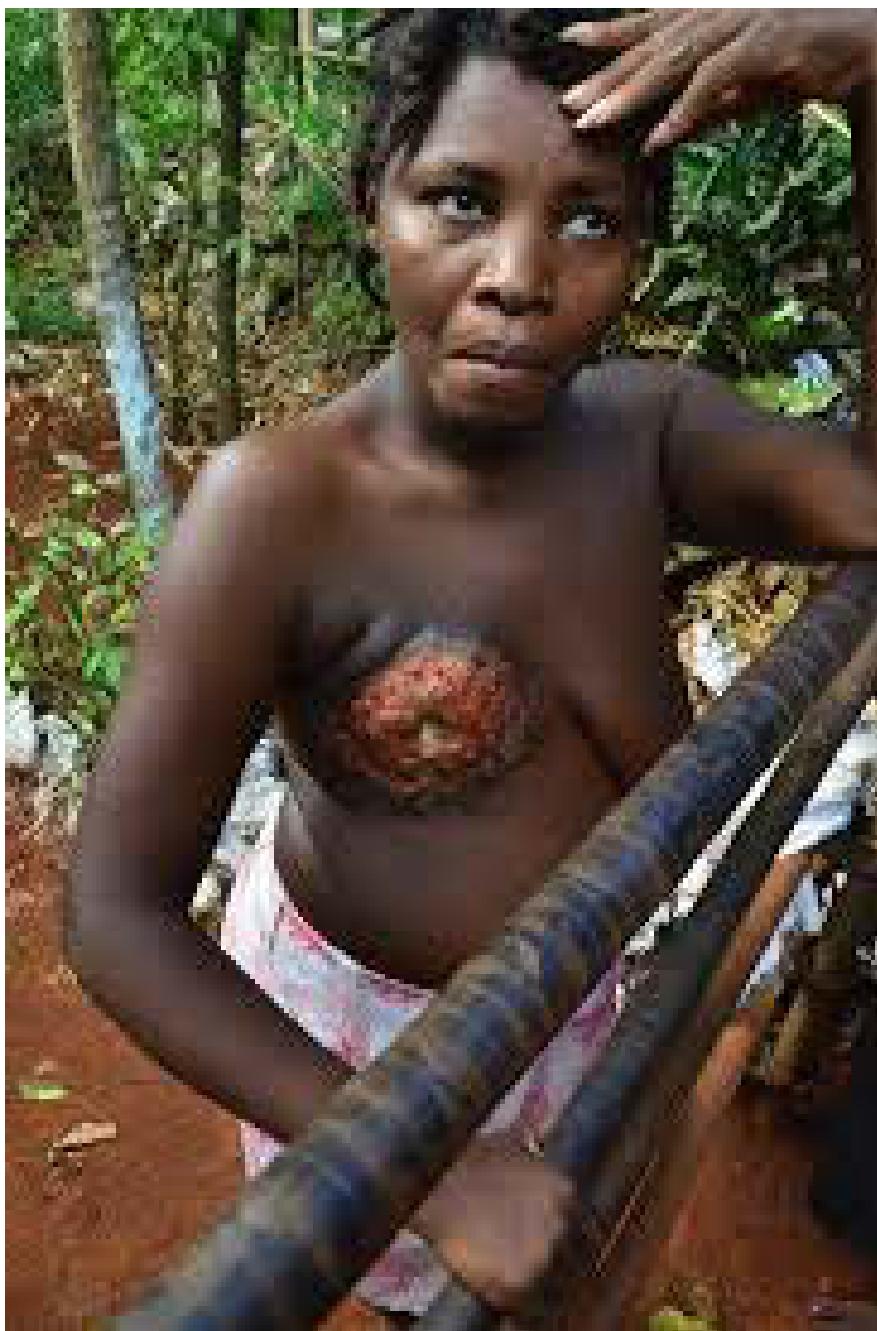


Figure 22. Photograph by John Carroll, M.D. *Counterpunch* 2013.

Both in the traditional sense and in the sense proposed throughout this work, conditions of colonization are strongly represented in this photograph of a Haitian woman, surrounded by nature, with untreated breast cancer: race, poverty, absence of adequate treatment, failure to treat pain.

“Most Haitians have very difficult lives and many of them suffer from painful conditions that are never treated. And their pain is ignored too, not because “Haitians have a higher pain tolerance,” but because Haitians are poor. . . .

Cervical and breast cancer plagues Haitian women. . . . Yet in over thirty years of working in Haiti, I have never seen morphine ordered even once.” (Carroll 2012)

There are additional aspects of her colonization, digitally deployed via Google. I came across this photograph through a search where I typed in “medical photograph of woman with breast cancer” and then hit the image tab (February 26, 2013). The first thing I noticed was a general overall impression of the colors of the search: white flesh color, deep blue medical imaging, and a preponderance of pink. Ten percent of the photographs featured an easily-visible pink ribbon. Roughly one-third—129 photographs—featured what I call “pink placement,” the deliberate use of the graphic designer, photographer, performer, or other contributor to the construction of the image in choosing the color pink because the photograph is a representation of some aspect of breast cancer (a medical technician wears a pink blouse underneath her white coat, for example). In spite of the wording of the search, out of 398 images, there were only three photographs of visibly cancerous breasts, two white women, whose cancers are early stage and are receiving treatment, and then this one black woman, clearly without

treatment of any kind. Of those three photographs, only the black woman's face is shown. Ostensibly, the white women are protected by the state through laws and medical ethics practices which do not permit revealing the cancer patient's identity. The Haitian woman receives no such protection. In this way, she is also the victim of the photographer's gaze: her identity is at once revealed and subsumed by the image, because she is now merged with her disease. There is no other women, only this one, with the critically diseased breast and, as the caption suggests, untreated pain.

Visually, this photograph is a reminder of the "National Geographicization" of exotic bare-breasted women, usually black, living under colonial conditions. In addition, here we are treated to the erotics of pain, the pornography of a decaying breast on a living woman, the monstrosity of who she is and what has happened/been done to her only adds to her colonized condition. In Haiti, most women are now getting breast cancer at a younger age, in the 20s and 30s (Silburner 2012). Is this because they have been exposed to toxins from a very young age during what researchers refer to as "windows of opportunity"? Haiti has become an environmental catastrophe, a toxic waste dump for the U.S., where industrial wastes, labeled as inert recyclables, are spread across the fields of third-world countries, including Haiti, as fertilizers, sold as fuel for incinerators, or simply dumped on the beaches (AP 1988; Cohen 2010). What corporations are floating through *her* biosphere, the landscape, the microgeography, of her inner body? If she could speak, beyond the boundaries of the photograph or the limits of her subject position, what would she tell? In the Google search, so many rosy-tinted images, but only one like her, a small dark box in a sea of Caucasian-colored flesh tone and pink ribbon, barely visible at all.

End Notes

ⁱ Currently one out of eight women will receive a breast cancer diagnosis in her lifetime, and while screening and treatments have improved the life expectancy of a cancer patient, the probability of having breast cancer has been rising, particularly among younger women. *United States Cancer Statistics: 1999-2012 Incidence and Mortality Web-based Report*. (Atlanta, GA: Department of Health and Human Services, Centers for Disease Control and Prevention, and National Cancer Institute; 2015).

ⁱⁱ As I write this chapter, I am intrigued by Foucault's bold engagement and outright embrace of "antiscience." He was delivering this lecture in 1976. In today's public discourse regarding science, moved as it is by the far right wing's refusal to accept all scientific evidence of climate change and its causation by human activity, or its outright rejection of the theory of evolution, or even the biological means by which a woman can be raped and impregnated, accusations of "antiscience" are coming out of the scientific community's frustration with such blatant refusals to accept even the fundamentals of scientific reason and analysis. With regard to certain issues, such as GMOs, however, it is predominantly the left which finds itself accused of being "antiscience." (See Figure 1, below.) Although the basis for rejections of science on the right and left differ (one tends to support or promote corporate neoliberalism *vis a vis* questioning the need for any governmental regulation based upon science, while the other critiques that relationship), the accusation remains particularly potent: it excoriates the rejection of power institutions (science/technology or government) with accusations of ignorance, poor education, or magical thinking. The points of view which are in contention with the state of the science today can thus be considered subjugated knowledges, and yet in today's political climate such knowledges span the political spectrum. In 2015, cultural discourses surrounding vaccination have become hotly contested, based in part upon a belief among some parents that standard practice childhood vaccinations have caused their children's autism. These beliefs are compounded by a lay reading of the circumstances surrounding the period of time when a child's autism presents, coupled with a mistrust of what scientists and medical practitioners say and which may refute or fail to consider the individual's personal observation and experience, and the very real track record of scientific research and public relations, which often contradicts previous discoveries and research, or in some cases has been revealed to be funded or too closely associated with for-profit ventures, including "Big Pharma" and the chemical industry.

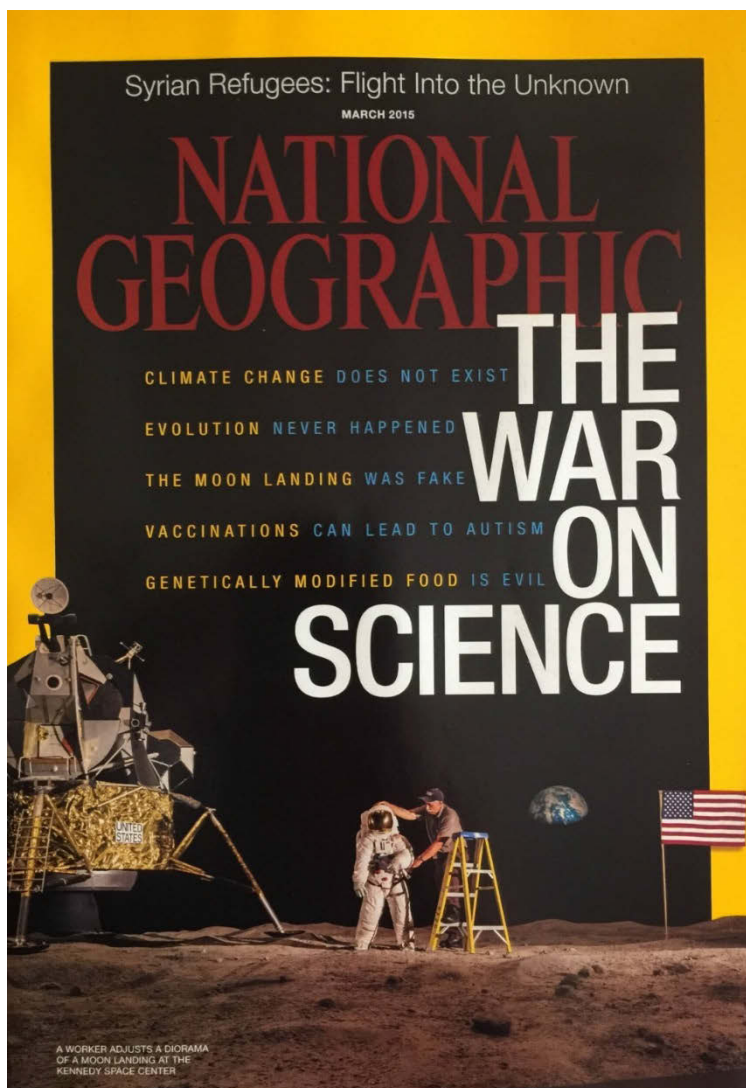


Figure 1. *National Geographic*, March 2015.

iii “The colonies are not organized in a state form and have not created a human world. . . . the colonies are the location par excellence where the controls and guarantees of judicial order can be suspended—the zone where the violence of the state of exception is deemed to operate in the service of “civilization” (Mbembe 2003, 14).

iv The photo essay does, however, feature a small number of photographs featuring semi-nude women or women draped to reveal their mastectomy scars; even these are demure, classic studio portrait photographs, the subjects smiling and triumphant.

v In this way, her perspective is reminiscent of Terry Tempest Williams’ book, *Refuge*, which came out in the early 90s, and addressed generational breast cancer in her own family. Williams also implicated poisoned nature as the source of her family’s breast

cancer mutation, describing how they were downwind from the Nevada Test Site, and regularly exposed to radiation as a result.

^{vi} As a widely-publicized public relations maneuver, Facebook recently announced that it would allow photographs of women's mastectomy scars, as long as no representation of a breast appears, effectively sanctioning/preferring mastectomized women's bodies over healthy ones (Goldhill 2013; Greenfield 2013). Nevertheless, when photographs of mastectomy scars reach a certain critical mass in social media, perhaps we will see more and more people beginning to question the information, or lack thereof, regarding environmental toxins and cancer.

^{vii} For a full discussion of the traditional role of feminine naturalist as practiced from the American Victorian era through to mid-century, see Norwood, *Made From This Earth*.

^{viii} "Of the eighty thousand or so chemicals now believed to be circulating (no one knows for sure), only 2 percent of them (this is the General Accounting Office's best guess) have been thoroughly assessed for toxicity. The only possible conclusion is that many chemical carcinogens remain unidentified, unmonitored, and at large." (Steingraber 2010, 102)

^{ix} As discussed in a previous chapter, I have concerns with the idea of "toxic trespass," as it evokes ideas of private property. I suggest instead that we examine the economic basis for this form of necropolitics, or the placing of human lives at risk for the profit of some, not unlike slavery or colonialism. See Chapter 1 for a full discussion.

^x Flame retardants—PBDEs—are suspected endocrine disruptors that show up in extremely high levels among U.S. infants, who are more exposed to flame retardants than any other humans on the planet. They appear in 97% of adults, are found in high concentrations in breast milk, and are linked to decreases in mental ability (Callahan 2012; Cranor 112; Legler and Brouwer 2003).

^{xi} Dan Gottlieb, "Patients must insist that Doctors see the Face behind the Ailment," *The Philadelphia Inquirer*, July 4, 1994.

^{xii} As with other routine medical surveillance equipment, such as dental X-ray machines, mammograms are money-makers for the health care industry.

^{xiii} In opposition to Freud's notion of sublimation as a male process whereby sexual tensions are released in socially acceptable avenues, Oliver redirects sublimation to a social process, one which is particularly difficult for marginalized social actors (159).

References

- Adams, Mike. 2009. "Martek Biosciences, Infant Formula, and the Toxic Solvent Hexane--a Natural News Investigation." *Natural News*. May 22. Accessed January 12, 2013. http://www.naturalnews.com/026315_Martek_DHA.html.
- Agamben, Giorgio. 1998. *Homo Sacer: Sovereign Power and Bare Life*. Translated by Daniel Heller-Roazen. Stanford: Stanford University Press.
- Alaimo, Stacy. 2000. *Undomesticated Ground: Recasting Nature as Feminist Space*. Ithaca and London: Cornell University Press.
- Amaya, Hector. 2004. "Photography as technology of the self: Matuschka's art and breast cancer." *International Journal of Qualitative Studies in Education* 17 (4): 557-573.
- Antonetta, Susanne. 2002. *Body Toxic*. New York: Counterpoint.
- Anway, M., A.S. Cupp, M. Uzumcu, and M.K. Skinner. 2005. "Epigenetic transgenerational actions of endocrine disruptors on male fertility." *Science* 308: 1466-1469.
- Armstrong, David. 1994. "Bodies of Knowledge/Knowledge of Bodies." In *Reassessing Foucault: Power, Medicine and the Body*, edited by Colin Jones and Roy Porter. New York: Routledge.
- Associated Press. 1988. "U.S. - After Two Years, Ship Dumps Toxic Ash." *New York Times*. November 28. Accessed March 7, 2013. <http://www.nytimes.com/1988/11/28/us/after-2-years-ship-dumps-toxic-ash.html>.
- Banet-Weiser, Sarah. 2012. "Editor's Note." *American Quarterly* June 2012: vii-viii.
- Beard, J.D., D.M. Umbach, J.A. Hoppin, et al. 2014. "Pesticide exposure and depression among male private pesticide applicators in the agricultural health study." *Environmental Health Perspectives* 122(9), 984-91. Accessed July 13, 2016. Doi10.1289/ehp 1307450.
- Belenky, Mary Field, Blythe Mcvicker Clinchy, Nancy Rule Goldberger, and Jill Mattuck Tarule. 1986. *Women's Ways of Knowing: The Development of Self, Voice and Mind*. New York: Basic Books.
- Booth, Alison. 1999. "The Mother of All Cultures: Camille Paglia and Feminist Mythologies." *The Kenyon Review, New Series* 21 (1): 27-45.
- Braidotti, Rosi. 1994. *Nomadic Subjects: Embodiment and Sexual Difference in Contemporary Feminist Theory*. New York: Columbia University Press.
- Breast Cancer Action. 2016. "The Cancer Industry." Accessed April 24, 2016. <http://www.bcaction.org/the-cancer-industry/>

- Breast Cancer and the Environment Research Program. 2012. "Annual Extended Environmental Exposures Conference: Windows of Susceptibility." *Windows of Susceptibility*. San Francisco: BCERP.
- Breast Cancer Consortium. 2016. "How much money goes to breast cancer research?" Accessed April 24, 2016. <http://breastcancerconsortium.net/resources/beyond-awareness-workbook/background/research-dollars/>
- Cable News Network. 2016. "Flint Water Crisis Fast Facts." *CNN*. March 7. Accessed April 17, 2016. <http://www.cnn.com/2016/03/04/us/flint-water-crisis-fast-facts/>
- Callahan, Patricia and San Roe. 2012. "Fear fans flames for chemical makers." *Chicago Tribune*. May 6. Accessed February 23, 2013. <http://www.chicagotribune.com/news/watchdog/flames/ct-met-flame-retardants-20120506,0,1627036.story?page=1>.
- Camp Lejeune Toxic Water: The Few, The Proud, The Forgotten*. n.d. Accessed October 15, 2013. <http://www.tftptf.com/5873.html>.
- Carl Hammer Gallery, email from Carl F. Hammer to Cynthia L. Martin re: Hollis Sigler inventory and prices. May 3, 2013.
- Carroll, John. 2013. "Pain Relief in Haiti." In *Counterpunch*. Accessed July 4, 2016. <http://www.counterpunch.org/2013/02/20/pain-relief-in-haiti/>
- Carson, Rachel. 1962. *Silent Spring*. New York: Houghton Mifflin Company.
- Cartwright, Lisa. 2000. "Community and the Public Body In Breast Cancer Media Activism." In *Wild Science: Reading Feminism, Medicine and the Media*, edited by Janine Marchessault and Kim Sawchuk. London and New York: Routledge.
- Casper, Monica J. and Lisa Jean Moore. 2009. *Missing Bodies: The Politics of Visibility*. New York, London: New York University Press.
- Center for Disease Control and Prevention. n.d. *Center for Disease Control National Biomonitoring Program: Organochlorine Pesticides Overview*. Accessed December 29, 2013. http://www.cdc.gov/biomonitoring/Mirex_BiomonitoringSummary.html.
- Center for Disease Control and Prevention. 2005. *Third National Report on Human Exposure to Environmental Chemicals*. Accessed January 30, 2016. <http://stacks.cdc.gov/view/cdc/21811>.
- Center for Disease Control and Prevention. 2009. *Fourth National Report on Human Exposure to Environmental Chemicals* Accessed December 29, 2013. <http://www.cdc.gov/exposurereport/>.

- Chomsky, Noam. 2013. "Can Civilization Survive Capitalism?" *Alternet*. March 5. Accessed March 12, 2013. <http://www.alternet.org/noam-chomsky-can-civilization-survive-capitalism>.
- Clayton, Jay. 1996. "Concealed circuits: Frankenstein's monster, the Medusa, and the cyborg." *Raritan* 15, 53. *Biography Reference Bank (H.W. Wilson)*, EBSCOhost. Accessed January 22, 2013.
- Coe, Kathryn. 2003. *The Ancestress Hypothesis*. New Brunswick, NJ: Rutgers University Press.
- Cohen, Mitchel. 2010. "Dumping Ground of the Caribbean: Haiti and Toxic Waste." *Counterpunch*. January 22-24. Accessed March 7, 2013. <http://www.counterpunch.org/2010/01/22/haiti-and-toxic-waste/>.
- Cooper, Melinda. 2008. *Life as Surplus: Biotechnology and Capitalism in the Neoliberal Era*. Seattle and London: University of Washington Press.
- Cranor, Carl F. 2011. *Legally Poisoned: How the law puts us at risk from toxicants*. Cambridge and London: Harvard University Press.
- Cronon, William. 1996. "The Trouble with Wilderness; or, Getting Back to the Wrong Nature." In *Uncommon Ground: Rethinking the Human Place in Nature*, edited by William Cronon. New York, London: W. W. Norton & Company.
- Dallas, Mary Elizabeth. 2012. "Racial disparities still seen in use of breast cancer treatment." *Moving Beyond Pink to End Breast Cancer Disparities*. December 5. Accessed March 7, 2013. <http://www.healthyblackwomen.org/news/2012/12/05/breast-cancer/racial-disparities-still-seen-in-use-of-breast-cancer-treatment/>.
- Daniels, Les. 1999. *Batman: The Complete History*. D. C. Comics.
- Davenport, Coral, and Ashley Southall. 2014. "Critics Say Spill Highlights Lax West Virginia Regulations." *New York Times*. January 12. Accessed July 17, 2015. http://www.nytimes.com/2014/01/13/us/critics-say-chemical-spill-highlights-lax-west-virginia-regulations.html?_r=1.
- Democracy Now! 2013. *Breast Cancer Patients Declare Victory as Supreme Court Bars Patenting of Human Genes*. June 14. Accessed February 23, 2014. http://www.democracynow.org/2013/6/14/breast_cancer_patients_declare_victory_as
- Diedrich, Lisa. 2007. *Treatments*. Minneapolis: University of Minnesota Press.
- Dodd, Elizabeth. 2003. "Beyond the Blithe Air: Williams's Postnuclear Transcendentalism." In *Surveying the Literary Landscapes of Terry Tempest Williams*, by Katherine R. and Melissa A. Goldthwaite Chandler. Salt Lake City: The University of Utah Press.

- Doggart, Sebastian. 1996. *Latin American Plays: New Drama from Argentina, Cuba, Mexico and Peru*. London: Nick Hern Books Limited.
- Douglas, Mary. 1970, "The Two Bodies." *Natural Symbols: Explorations in Cosmology*. London and New York: Routledge.
- Drenowski, Adam. 2009. "Obesity, diets, and social inequalities." *Nutrition Reviews* 67 (Suppl. 1): S36-S39.
- Ehrenreich, Barbara. 2009. *Bright-Sided: How Positive Thinking is Undermining America*. New York: Metropolitan Books, Henry Holt and Company, LLC.
- Environmental Working Group. 2013. *EWG's Skin Deep Cosmetics Database - Avon*. Accessed May 1, 2013.
http://www.ewg.org/skindeep/company/Avon_Products%2C_Inc./.
- Esteller, Manuel. 2011. "Epigenetic Changes in Cancer." *F1000 Biol Reports* 3 (9): 3-9. Accessed March 14, 2015. doi:103210/B3-9.
- Facebook, Inc. "Erin Brockovich's Facebook page." Last modified April 17, 2016. Accessed April 17, 2016.
<https://www.facebook.com/ErinBrockovichOfficial/?fref=ts>
- Falco, Miriam. 2008. "FDA Sets 'Safe' Levels for Melamine in Baby Formula." *CNN.com/US*, November 28, 2008. Accessed January 30, 2016.
<http://www.cnn.com/2008/US/11/28/infant.formula.melamine/>.
- Felitti, Vincent J., Robert F. Anda, Dale Nordenberg, et al. 1998. "Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults: The Adverse Childhood Experiences (ACE) Study." *The American Journal of Preventative Medicine*, 14(4), 245-258.
- Foucault, Michel. 2004. *The Birth of Biopolitics: Lectures at the College of France 1978-1979*. New York: Palgrave MacMillan.
- . 2003. *Society Must be Defended: Lectures at the College de France, 1975-76*. New York: Picador.
- . 2002. *The Archaeology of Knowledge*. London and New York: Routledge.
- . 1994. *The Birth of the Clinic: An Archaeology of Medical Perception*. Translated by A. M. Sheridan Smith. New York: Vintage Books, a division of Random House, Inc.
- . 1977. *Discipline and Punish: The Birth of the Prison*. New York: Random House.
- . 1973. *The Order of Things: An Archaeology of the Human Sciences*. New York: Vintage Books.

- Fox, David, interview by Yolanda Cellucci. 2012. *David Fox, Photographer Interview with Yolanda Cellucci* WCAC TV. Waltham. April 20. Accessed September 26, 2013. <https://www.youtube.com/watch?v=4wVayFj3DaY>.
- Frank R. Lautenberg, *United States Senator for New Jersey*. 2013. Accessed April 30, 2013. <http://www.lautenberg.senate.gov/newsroom/record.cfm?id=341330>.
- Frank, Arthur. 1997. *The Wounded Storyteller: Body, Illness, and Ethics*. Chicago, London: The University of Chicago Press.
- Fred Hutchinson Cancer Research Center. 2013. *News Releases: Endometriosis Linked to Two Pesticides*. November 4. Accessed December 29, 2013. <http://www.fhcrc.org/en/news/releases/2013/11/endometriosis-risk-linked-to-two-pesticides.html>.
- Georgia Air Force Base, CA. 2012. *Hazardous Toxic and Radioactive Waste Department of Defense Superfund Sites - 148*. June 25. Accessed April 30, 2013. <http://www.georgeafb.info/reference/superfund/sites/department-of-defense-dod-superfund-sites>.
- Goldenberg, Suzanne. 2013. "Billionaires Secretly Funded Vast Climate Denial Network." *Mother Jones*. February 15. Accessed March 1, 2013. <http://www.motherjones.com/politics/2013/02/donors-trust-climate-denial>.
- Goldhill, Olivia. 2013. "Facebook allows mastectomy photos after breast cancer patient's petition." *The Telegraph*. June 13. Accessed January 30, 2016. <http://www.telegraph.co.uk/technology/facebook/10118016/Facebook-allows-mastectomy-photos-after-breast-cancer-patients-petition.html>
- Goldman, Samuel M. 2014. "Environmental Toxins and Parkinson's Disease." *Annual review of Pharmacology and Toxicology* 54: 141-164. January. Accessed July 11, 2016. <http://www.annualreviews.org/doi/full/10.1146/annurev-pharmtox-011613-135937>
- Goodnough, Amy, Monica Davey, Mitch Smith. 2016. "When the Water Turned Brown." *The New York Times*, January 23. Accessed January 29, 2016. http://www.nytimes.com/2016/01/24/us/when-the-water-turned-brown.html?emc=edit_th_20160124&nl=todaysheadlines&nliid=72205500&_r=0
- Graf, Thomas. 2014. "Cell replacement therapies: iPS technology or transdifferentiation?" *EuroStemCell*. November 13. Accessed March 14, 2015. <http://www.eurostemcell.org/commentanalysis/cell-replacement-therapies-ips-technology-or-transdifferentiation>.
- Graham, David A. 2016. "What Did the Governor Know About Flint's Water and When Did He Know It?" *The Atlantic*, January 9. Accessed April 17, 2016. <http://www.theatlantic.com/politics/archive/2016/01/what-did-the-governor-know-about-flints-water-and-when-did-he-know-it/423342/>

- Gray, Chris Hables. 2001. *Cyborg Citizen: Politics in the Posthuman Age*. New York and London: Routledge.
- Greenfield, Beth. 2013. *Facebook Allows Mastectomy Photos: Tattooed Model In Controversial Picture Speaks Out*. June 13. Accessed October 9, 2013. <https://www.facebook.com/WhyWeInk/posts/322976534502103>
- Griffin, Susan. 1978. *Woman and Nature: The Roaring Inside Her*. New York: Harper & Row.
- Grün, Felix and Bruce Blumberg. 2009. "Endocrine disruptors as obesogens." *Molecular and Cellular Endocrinology, Special Edition: Endocrine Disruptors From the Environment in the Aetiology of Obesity and Diabetes* 304 (1-2): 19-29.
- Gupta, Akhil and James Ferguson. 1997. "Beyond "Culture": Space, Identity, and the Politics of Difference." In *Culture, Power, Place: Explorations in Critical Anthropology*, edited by Akhil Gupta and James Ferguson. Durham, NC: Duke University Press.
- Hambleton, Laura. 2013. "Because male breast cancer is rare, many cases aren't caught till later stages." *Washington Post*. February 25. Accessed May 1, 2013. http://articles.washingtonpost.com/2013-02-25/national/37286948_1_sharon-giordano-breast-cancer-mammogram-and-biopsy.
- Haraway, Donna J. 1997. *Modest_Witness@Second_MillenniumFemaleMan_Meets_Onco_Mouse*. Routledge: New York and London.
- . 1991. *Simians, Cyborgs, and Women: The Reinvention of Nature*. New York: Routledge.
- Harding, Sandra. 2008. *Sciences From Below: Feminisms, Postcolonialities, and Modernities*. Durham and London: Duke University Press.
- Harvey, David. 2005. *A Brief History of Neoliberalism*. Oxford: Oxford University Press.
- . 1990. *The Condition of Postmodernity: An Enquiry into the Origins of Cultural Change*. Malden, Massachusetts: Blackwell Publishers, Inc.
- Huang, Yi, Shweta Nayak, Rachel Jankowitz, Nancy E Davidson, and Steffi Oesterreich. 2011. "Epigenetics in Breast Cancer: What's New?" *Breast Cancer Research* 13 (6): 225. Accessed March 14, 2015. doi:10.1186/bc2925.
- Jameson, Fredric. 1991. *Postmodernism, or, the Cultural Logic of Late Capitalism*. Durham: Duke University Press.
- Jay, David. 2011. *The Scar Project: Breast Cancer is Not a Pink Ribbon*. Accessed October 9, 2013. <http://www.thescarproject.org/>.

- John W. Nick Foundation, Inc. n.d. *MaleBreastCancer.org*. Accessed November 5, 2013. https://malebreastcancer.org/Home_Page.php.
- Johnson, Brad. 2011. *Romney Getting Energy Advice From Bush Pollution Lobbyist Jeffrey R. Holmstead*. May 11. Accessed May 1, 2013. <http://thinkprogress.org/climate/2011/05/11/175018/romney-jeff-holmstead/?mobile=nc#>.
- Keiser, Sahru. 2012. *Inequities in Breast Cancer: Race and Place Matter*. May 15. Accessed January 30, 2016. <http://bcaction.org/resources/webinars/inequities-in-breast-cancer-race-and-place-matter/>
- Kennedy, Merrit. 2016. "1st U.S. Uterus Transplant Fails Amid 'Sudden Complication'." NPR. March 10. Accessed April 17, 2016. <http://www.npr.org/sections/thetwo-way/2016/03/10/469913316/1st-u-s-uterus-transplant-fails-amid-sudden-complication>
- King, Samantha. 2006. *Pink Ribbons, Inc.: Breast Cancer and the Politics of Philanthropy*. Minneapolis, London: University of Minnesota Press.
- Klawiter, Maren. 2008. *The Biopolitics of Breast Cancer: Changing Cultures of Disease and Activism*. Minneapolis: The University of Minnesota Press.
- Kohn, Margaret and Keally McBride. 2011. *Political Theories of Decolonization: Postcolonialism and the Problem of Foundations*. Oxford: Oxford University Press.
- Kushner, Rose. 1975. *Breast Cancer: A Personal History & an Investigative Report*. New York and London: Harcourt Brace Jovanovich.
- Koepfel, Barbara. 2015. "U.S. Nerve Gas Hit Our Own Troops In Iraq." *Newsweek*. March 27. Accessed March 30, 2015. <http://www.newsweek.com/how-us-nerve-gassed-its-own-troops-then-covered-it-317250>.
- Kushner, Rose. 1975. *Breast Cancer: A Personal History & an Investigative Report*. New York and London: Harcourt Brace Jovanovich.
- Lear, Linda. 2009. *Rachel Carson: Witness for Nature*. Boston, New York: Mariner Books, Houghton Mifflin Harcourt.
- Lefebvre, Marc-Andre, Wim J.A. Meuling, Roel Engel, et al. 2012. "Consumer inhalation exposure to formaldehyde from the use of personal care products/cosmetics." *Regulatory Toxicology & Pharmacology* 63 (1): 171-176.
- Legler, Juliette and Abraham Brouwer. 2003. "Are brominated flame retardants endocrine disruptors?" *Environment International* 29: 879-885.

- Ley, Barbara. 2009. *From Pink to Green: Disease Prevention and the Environmental Breast Cancer Movement*. New Brunswick, NJ and London: Rutgers University Press.
- Libert, Rachel and Tony Hardmon. 2012. *Semper Fi – Always Faithful*. Sundance Institute and Film Festival. Directed by Rachel and Tony Hardmon Libert.
- Lipton, Eric. 2015. "Tom Udall's Unlikely Alliance With the Chemical Industry." *New York Times*. March 6. Accessed March 30, 2015.
<http://www.nytimes.com/2015/03/07/us/tom-udalls-unlikely-alliance-with-the-chemical-industry.html>.
- Lorant, Terry, Loren Eskanazi, Susan Love. 2001. *Reconstructing Aphrodite*. Syracuse: Syracuse University Press.
- Lorde, Audre. 1997. *The Cancer Journals (Special Edition)*. San Francisco: Aunt Lute Books.
- Love, Susan M., M.D. 2005. *Dr. Susan Love's Breast Book, 4th ed.* Cambridge, MA: DaCapo Press, Perseus Books Group.
- Lykke, Nina. 1996. "Between Monsters, Goddesses and Cyborgs: Feminist Confrontations with Science." In *Between Monsters, Goddesses and Cyborgs: Feminist Confrontations with Science, Medicine, and Cyberspace*, edited by Nina and Rosi Braidotti. London and New Jersey: Zed Books.
- Lynch, Dorothea and Eugene Richards. 1986. *Exploding Into Life*. New York: Aperture and Many Voices Press.
- Maher, Chris. n.d. *Etsy.com "Energy Work"*. Accessed April 2, 2015.
https://www.etsy.com/listing/221374456/5368-venus-landscape-elegant-bw?show_panel=true.
- Margolies, Liz. 2011. *Lesbians and Breast Cancer Risk*. February 5. Accessed May 1, 2013. http://www.cancer-network.org/cancer_information/lesbians_and_cancer/lesbians_and_breast_cancer.php.
- Maril, Robin. 2011. *Federal Report Shows Stark Health Disparities in Lesbian and Bisexual Women*. November 2. Accessed May 1, 2013.
<http://www.hrc.org/blog/entry/federal-report-shows-stark-health-disparities-in-lesbian-and-bisexual-women>.
- Martinez, Michael. 2016. "Flint, Michigan: Did race and poverty factor into water crisis?" *CNN*, January 28. Accessed April 17, 2016.
<http://www.cnn.com/2016/01/26/us/flint-michigan-water-crisis-race-poverty/>
- Masco, Joseph. 2006. *The Nuclear Borderlands: The Manhattan Project in Post-Cold War New Mexico*. Princeton and Oxford: Princeton University Press.

- Massey, Doreen. 1994. *Space, Place & Gender*. Minneapolis: University of Minnesota Press.
- Mbembe, Achille. 2003. "Necropolitics." *Public Culture*. Duke University Press 15(1): 11-40.
- McClure, Laura. 2010. "Which infant formulas contain secret toxic chemicals?" *Mother Jones*, July 12. Accessed January 30, 2016. <http://www.motherjones.com/blue-marble/2010/07/infant-formula-similac-enfamil-melamine-bpa>.
- Mehl-Madrona, Lewis, M.D. Ph.D. 2007. *Narrative Medicine: The Use of History and Story in the Healing Process*. Rochester, VT: Bear & Company.
- Merchant, Carolyn. 1980. *The Death of Nature: Women, Ecology and the Scientific Revolution*. New York: Harper Collins.
- Merendino, Angelo. 2013. *The Battle We Didn't Choose: My Wife's Fight With Breast Cancer*. Accessed October 2013. <http://mywifesfightwithbreastcancer.com/>.
- Metzger, Deena. 1997. *Tree: Essays and Pieces*. Berkeley: North Atlantic Books.
- Michaels, David. 2008. *Doubt is their Product: How Industry's Assault on Science Threatens Your Health*. Oxford, New York: Oxford University Press.
- Mifflin, Margot. 2013. *Bodies of Subversion: A Secret History of Women and Tattoo, 3rd Edition*. New York: Power House Books.
- Mignolo, Walter. 2000. *Local Histories/Global Designs: Coloniality, Subaltern Knowledges, and Border Thinking*. Princeton: Princeton University Press.
- . 2005. *The Idea of Latin America*. Malden, MA: Blackwell.
- Monakhova, Yulia B, Thomas Kuballa, Gerd Mildau, et al. 2013. "Formaldehyde in hair straightening products: Rapid 1H NMR determination and risk assessment." *International Journal of Cosmetic Science* 35 (2): 201-206.
- Moss, J.I. 2013. "Gulf War illnesses are autoimmune illnesses caused by increased activity of the p38/MPAK pathway in CD4+ immune system cells which was caused by nerve agent prophylaxis and andrenergyc load." *Med Hypothesis* 81 (6). doi:10.1016/j.mehy.2013.09.014.
- Mukherjee, Siddhartha. 2010. *The Emperor of all Maladies: A Biography of Cancer*. New York: Scribner.
- Murphy, Dave. 2014. *Supreme Court Denies Family Farmers Right to Self-Defense from Monsanto Abuse*. January 14. Accessed February 23, 2014. <http://www.osgata.org/2014/supreme-court-denies-family-farmers/>.

- Nestle, Marion. 2010. "Functional ingredients in infant formula: Are these about health or marketing?" *Food Politics*, June 9. Accessed January 30, 2016.
<http://www.foodpolitics.com/2010/06/additions-to-infant-formula-health-or-marketing/> .
- Norrell, Brenda. 2016. "Navajo Water Contamination More Horrific Than Flint, Michigan's." *The Narcosphere*. January 25. Accessed April 17, 2016.
<http://narcosphere.narconews.com/notebook/brenda-norrell/2016/01/navajo-water-contamination-more-horrific-flint-michigans>
- Oliver, Kelly. 2004. *The Colonization of Psychic Space: A Psychoanalytic Social Theory of Oppression*. Minneapolis: University of Minnesota Press.
- Orenstein, Peggy. 2013. "Our Feel-Good War on Breast Cancer." *New York Times Magazine*. April 25. Accessed April 30, 2013.
http://www.nytimes.com/2013/04/28/magazine/our-feel-good-war-on-breast-cancer.html?smid=fb-share&_r=0&pagewanted=all.
- Oreskes, Naomi, Erik Conway. 2010. *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming*. London, New York: Bloomsbury Press.
- Oxy. n.d. *Oxy: Historical Highlights*. Accessed December 29, 2013.
<http://www.oxy.com/aboutoxy/whoweare/pages/historicalhighlights.aspx>.
- Partain, Michael. 2010. *Testimony of Michael Partain*. September 16. Accessed November 8, 2013.
<http://gop.science.house.gov/Media/hearings/oversight10/sept16/Partain.pdf>.
- Paz, Octavio. 1996. "Rappaccini's Daughter." In *Latin American Plays: New Drama from Argentina, Cuba, Mexico and Peru*, by Sebastian Duggart. London: Nick Hern Books Limited.
- Pellegrino, Edmund D. 2008. "Humanistic Basis of Professional Ethics." In *The Philosophy of Medicine Reborn: A Pellegrino Reader*, edited by Jr., H. Tristram and Fabrice Jotterand. Notre Dame, IN: University of Notre Dame Press.
- Peterson, Jennifer and Matuschka. 2004. "Interview with Matuschka: breast cancer, art, sexuality and activism." *International Journal of Qualitative Studies in Education*, 493-516. doi: 10.1080/09518390410001709562.
- Pickersgill, Martyn, Jorg Niewohner, Ruth Muller, Paul Martin, and Sarah Cunningham-Burley. 2013. "Mapping the new molecular landscape: social dimensions of epigenetics." *New Genetics and Society* 32 (4): 429-447.
 doi:10.1080/14636778.2013.861739.

- Pollan, Michael. 2007. "Unhappy Meals." *New York Times Magazine*. January 28. Accessed March 3, 2013. http://www.nytimes.com/2007/01/28/magazine/28nutritionism.t.html?pagewanted=all&_r=0.
- Porteous, J. Douglas. 1986. "Bodyscape: The Body-Landscape Metaphor." *Canadian Geographer / Le Géographe canadien* 30 (1): 2-12.
- Rajan, Kaushik Sunder. 2007. *Biocapital: The Constitution of Postgenomic Life*. Durham: Duke University Press.
- Rancière, Jacques. 2009. *The Politics of Aesthetics: The Distribution of the Sensible*. Translated by Gabriel Rockhill. London and New York: Continuum.
- Redgrave, Lynn and Annabel Clark. 2004. *Journal: A Mother and Daughter's Recovery from Breast Cancer*. Brooklyn: Umbrage Editions.
- Reuben, Suzanne H. for The President's Cancer Panel. 2010. "Reducing Environmental Cancer Risk: What We Can Do Now." U.S. Department of Health and Human Services, National Institutes of Health, National Cancer Institute, Washington D.C.
- Reuters. 2013. *Cases of advanced breast cancer inching up in young women*. February 27. Accessed March 12, 2013. <http://www.reuters.com/article/2013/02/27/health-breastcancer-idUSL4N0BR01K20130227>.
- Roan, Shari. 2012. "Arsenic found in some infant formula, cereal bars." *Los Angeles Times*. February 16. Accessed January 11, 2013. <http://articles.latimes.com/2012/feb/16/opinion/le-heb-arsenic-20120216>.
- Robin, Marie-Monique. 2008. *The World According to Monsanto: Pollution, Corruption, and the Control of the World*. New York: The New Press.
- Rose, Nikolas. 2007. *The Politics of Life Itself: Biomedicine, Power, and Subjectivity in the Twenty-First Century*. Princeton: Princeton University Press.
- Russia Today. 2014. *Supreme Court hands Monsanto victory over farmers on GMO seed patents, ability to sue*. January 13. Accessed February 23, 2014. <http://rt.com/usa/monsanto-patents-sue-farmers-547/>.
- Salant, Jonathan D. 2015. "U.S. Senators Introduce Chemical Safety Act Named for Lautenberg." *NJ.com*. March 10. Accessed March 30, 2015. http://www.nj.com/politics/index.ssf/2015/03/us_senators_introduce_chemical_safety_act_named_for.html.
- Sandoval, Chela. 2000. *Methodology of the Oppressed*. Minneapolis, London: University of Minnesota Press.

- Sandra Steingraber's War on Toxic Trespassers*. Produced by Bill Moyers & Company. 2013. Performed by Bill Moyers and Sandra Steingraber. Accessed July 19, 2015. <http://billmoyers.com/segment/sandra-steingrabers-war-on-toxic-trespassers/>.
- Scarry, Elaine. 1985. *The Body in Pain: The Making and Unmaking of the World*. New York and Oxford: Oxford University Press.
- Shabecoff, Philip and Alice. 2010. *Poisoned for Profit: How Toxins Are Making Our Children Chronically Ill*. White River Junction, VT: Chelsea Green Publishing.
- Sheridan, Kerry. 2013. "Surprises in hunt for environmental links to breast cancer." *Medical Xpress*. November 10. Accessed April 24, 2016. <http://medicalxpress.com/news/2013-11-environmental-links-breast-cancer.html>
- Shiva, Vandana. 2013. "Seed Freedom." *Resurgence & Ecologist*, May 1: 9-10.
- Sigler, Hollis. *Hollis Sigler's Breast Cancer Journal*. New York: Hudson Hills Press, 1999.
- Silberner, Joanne. 2012. "Cancer's New Battleground: In Haiti, breast cancer presents stark choices." *PRI's The World*. December 5. Accessed March 7, 2013. <http://www.pri.org/stories/health/global-health/cancer-s-new-battleground-in-haiti-breast-cancer-presents-stark-choices-12280.html>.
- Singh, Sher and Steven Shoei-Lung Li. 2012. "Epigenetic Effects of Environmental Chemicals Bisphenol A and Phthalates." *International Journal of Molecular Sciences*, 13(8), 10143-10153.
- Skinner, M.K. and M.D. Anway. 2005. "Seminiferous cord formation and germ-cell programming: epigenetic transgenerational actions of endocrine disruptors." *Annals of the New York Academy of Science* 1061: 18-32.
- Slack, Jonathan M.W. 2002. "Conrad Hal Waddington: the last Renaissance biologist?" *Nature Reviews Genetics* 3: 889-895. Accessed March 14, 2014. doi:10.1038/nrg933.
- Smith, Linda Tuhiwai. 2012. *Decolonizing Methodologies: Research and Indigenous Peoples, 2nd ed.* London, New York: Zed Books.
- Sontag, Susan. 2003. *Regarding the Pain of Others*. New York: Picador and Farrar, Straus and Giroux.
- . 1978. *Illness as Metaphor*. New York: Farrar, Straus and Giroux.
- . 1977. *On Photography*. New York: Picador and Farrar, Straus and Giroux.

- Soto, A. M., C. Brisken, C. Schaeberle, and C. Sonnenschein. 2013. "Does cancer start in the womb? Altered mammary gland development and predisposition to breast cancer due to in utero exposure to endocrine disruptors." *Journal of Mammary Gland Biology and Neoplasia* 18: 199-208.
- Spretnak, Charlene. 1990. "Ecofeminism: Our Roots and Flowering." In *Reweaving the World: The Emergence of Ecofeminism*, by Irene and Gloria Feman Orenstein Diamond. San Francisco: Sierra Club Books.
- Stacey, Jackie. 1997. *Teratologies: A Cultural Study of Cancer*. New York: Routledge.
- Steingraber, Sandra. 2010. *Living Downstream: An Ecologist's Personal Investigation of Cancer and the Environment*. Philadelphia: Da Capo Press, Perseus Books Group.
- . 2001. *Having Faith*. Cambridge, MA: Perseus Publishing.
- Stern, Victoria. 2015. "Mythbusters: Does This Cause Cancer?" *Medscape Oncology*. March 4. Accessed March 9, 2015. <http://www.medscape.com/viewarticle/840559>.
- Sulik, Gayle A. 2011. *Pink Ribbon Blues: How Breast Cancer Culture Undermines Women's Health*. Oxford, New York: Oxford University Press.
- Szabo, Liz. 2012. "Sexy breast cancer campaigns anger many patients." *USA Today*, October 30. Accessed January 30, 2016. <http://www.usatoday.com/story/news/nation/2012/10/30/patients-decry-sexualization-of-breast-cancer/1630911/>.
- Tuan, Yi-Fu. 1978. "Sign and Metaphor." *Annals of the Association of American Geographers* 68(3): 363-372.
- United States Department of Health and Human Services, President's Cancer Panel, 2008-2009. *Reducing Environmental Cancer Risk: What We Can Do Now*. April 2010.
- United States Department of Justice. n.d. *U.S. V. Occidental Chemical Corp. (Love Canal)*. Accessed December 29, 2013. <http://www.justice.gov/enrd/3635.htm>.
- Uroff, M. D. 1972. "'The Doctors in Rappaccini's Daughter'." *Nineteenth-Century Fiction* University of California Press. 7(1): 61-70.
- Uter, Wolfgang, Kerem Yazar, Eva-Maria Katz, et al. 2014. "Coupled exposure to ingredients of cosmetic products." *Contact Dermatitis* 70 (4): 219-226.
- Venn, Couze. 2006. *The Postcolonial Challenge: Towards Alternative Worlds*. London: Sage Publications Ltd.
- Waddington, Conrad H. 1940. *Organisers and Genes*. Cambridge: Cambridge University Press.

- Wald, Patricia. 2012. "American Studies and the Politics of Life." *American Quarterly*, June 2012: 185-204.
- Wheeler, Lydia. 2015. "Boxer introduces her own chemical reform legislation." *The Hill*. March 12. Accessed March 30, 2015. <http://thehill.com/policy/energy-environment/235504-boxer-introduces-her-own-chemical-reform-legislation>.
- Whelton, Andrew J., LaKia McMillan, Matt Connell, et al. 2015. "Residential Tap Water Contamination Following the Freedom Industries Chemical Spill: Perceptions, Water Quality, and Health Impacts." January 20. *Environmental Science and Technology*. 49: 813-823. Accessed July 19, 2015. doi:10.1021/es5040969.
- White, Harvey L. 1998. "Race, Class, and Environmental Hazards." In *Environmental Injustices, Political Struggles: Race, Class, and the Environment*, edited by David E. Camacho. Durham: Duke University Press Books.
- Williams, Florence. 2012. *Breasts: A Natural and Unnatural History*. New York and London: W. W. Norton & Company, Inc.
- . 2012. "How a Bunch of Scrappy Marines Could Help Vanquish Breast Cancer." *Mother Jones*. May/June. Accessed October 13, 2013. <http://www.motherjones.com/environment/2012/05/camp-lejeune-marines-breast-cancer-florence-williams>.
- Williams, Terry Tempest. 1991. *Refuge: An Unnatural History of Family and Place*. New York: Pantheon Books.