

Purity Is Not the Point: Chemical Toxicity, Childbearing, and Consumer Politics as Care

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Abstract

Environmental chemical toxicity evokes both individual action and relational interconnection. On the one hand, there is the diffusion of risk and harm through time and space, which complicates assigning fault, responsibility, or regulatory jurisdiction. On the other hand, toxicity begs the question of what individuals can do to feel a sense of agency and mitigate the damage done by daily necessities of living. I call this tension a double bind and suggest that it is mirrored by childbearing, arguing that childbearing offers a particularly compelling site for thinking through the possibilities and limits of consumer politics as a response to chemical toxicity. Childbearing and toxicity both disturb conventional ideas about individual actors in such a way that it makes the necessity of collective political action apparent even to those most invested in consumer politics. By building on new materialist philosophy and reproductive justice critiques of consumer choice, I consider both social and ontological problems with a politics based on individual agents. Ultimately, I argue that despite their flaws, consumer choices can be important acts of care alongside collective political action, and that childbearing can be a catalyst for ecological approaches to politics in which relations of responsibility and care are foregrounded.

Introduction

I was distractedly admiring the long grey braids of the woman seated in front of

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me on the wooden pews in the Asilomar retreat and conference center just outside of Monterey, California, when Sandra Steingraber captured my attention. She was speaking to the 2012 annual meeting of the Midwives Alliance of North America, which I was attending as a burgeoning anthropologist and doula, just starting fieldwork in the Bay Area. A fair number of the women seated around me were knitting or doing other handwork in the light of big leaded glass windows, old floorboards creaking with the collective gentle shifting of our weight. Steingraber was an ecologist talking to us about biomagnification, aquatic ecosystems, and the accumulation of toxic industrial runoff in fish flesh. In some ways this conference was parading stereotypes of “midwives” before me, a femininity of soft cotton and down-to-earth sweaters, wry wisdom and practicality in boots and sandals that suited my own temperament far better than the business casual attire I was wearing. But the toxicity under discussion was jarring in this peaceful space—what did toxic ecologies have to do with birth?

Steingraber, who has written popular science books about toxicity’s impact on childbearing and cancer that draw from her own experience, explained biomagnification as the phenomenon whereby toxins become more concentrated with every link they climb in the food chain—they remain in the flesh of the consumer. Because there are so many more food chain links in aquatic ecosystems than terrestrial ones, carnivorous fish are particularly prone to carrying high concentrations of toxins. Mercury is an industrial byproduct of manufacturing some plastics; it is released into waterways, where it bonds with carbon and becomes methyl mercury, a neurotoxin, and starts making its way up the food chain. It is notoriously associated with the epidemic of neurological disease surrounding Japan’s Minamata Bay in the 1950s. During fetal development, cells that are being differentiated and knit into organs or into the nervous system are extremely vulnerable—one mistake in the unraveling of a zygote into a fetus can have consequences manifesting in birth defects and developmental abnormalities. Far from being the guardian of an impermeable bubble, the placenta actively pumps methyl mercury across the so-called placental barrier, acting more like a magnifying glass for the misidentified molecule. Because of this, there is a well-known advisory against pregnant people eating tuna, a large carnivorous fish with high mercury content. Disturbingly, Steingraber insisted that not only should tuna be avoided, but there is no fish that is safe for a pregnant person to eat—all of them embody methyl mercury and other toxins at levels that threaten fetal development. *Every fish on the planet.*

I have since learned much about the many ways reproduction and toxicity are

related, both through my interlocutors in “the field” and “the academy,” spaces and conversations that I find impossible to disentangle.¹ But this anecdote stays fresh in my memory because of an exchange that followed. Steingraber, her clear, measured voice ringing out across the wooden hall, takes a broad view of the phenomenon of toxicity, insisting that we are all interconnected and mutually implicated. She describes how water *flows*—through irrigation canals and urban river dump sites, into water tables hundreds of miles from the source of contamination, into the ocean where it evaporates and travels the sky in clouds, and rains down on a different continent. Toxins transcend national borders and their regulatory jurisdictions. Polluted water in warm countries evaporates, condenses over cold countries, and rains down on them. The environmentally conscious people of Finland have some of the most polluted fish in the world. Children living in “pristine” Arctic snow take in seven times more PCBs through breast milk than infants in California. This is called the Arctic paradox; Arctic ecosystems are some of the most contaminated on Earth due to global air currents and marine biomagnification, and people who rely on wild-caught food in the North carry some of the highest chemical body burdens in the world (see Cone, 2005). Geographical interconnection is not the only way toxins exceed expectations: American municipal water is often contaminated with agricultural runoff, and most of the exposure to toxins in water does not come from drinking, but from inhaling water vapors, so even if one buys purified bottled water to drink while pregnant, the advantage is undercut while taking a shower.² There is no escaping our planet.

Steingraber calls out and refuses to capitulate to the ideology of salvation through consumer choice. Nonetheless, a woman in the audience raises her hand and asks what fish are safe to eat during pregnancy. What can she tell her clients? Does Steingraber have a list of the most dangerous ones? Steingraber is patient, and explains that that's not the point—everyone's babies are at stake, everyone's babies matter. The woman repeats herself, becoming frustrated, asking what, then, she should tell her clients?

“Tell them to become abolitionists,” answers Steingraber after a small pause. Earlier in her talk she had drawn an explicit parallel between ending global dependence on toxic fossil fuels and abolishing slavery in the United States, stating that slavery was a deeply economically entrenched system upon which rested ways of life cherished by the powerful, a system that adversely affected everyone in society, even if they were not absorbing its worst effects. The same, she said, is true of the petroleum economy. In response to this woman's query,

she asserted that “our biggest problem” is “well-informed futility syndrome,” or feeling complacent about inaction. “Abolitionists fought and marched and died,” she says. “Political action is part of good parenting; it reassures your children that the world will be OK. Mom's on the job.”

The idea that no fish is safe encapsulates both halves of this article’s intervention. On the one hand, there is the diffusion of reproductive risk and harm through time and space (Murphy, 2013), which impacts us all and is a cause for universal concern even as it is unjustly distributed “slow violence” (Murphy, 2017; Nixon, 2011). Such uneven diffusion complicates assigning fault, responsibility, or regulatory jurisdiction, and it confounds the agency of individual actors. On the other hand, the toxic fish begs the question of what individuals can do to feel a sense of agency in the face of ill-defined threats and mitigate the damage done by daily necessities of living. Pregnant people still need to eat, after all. This tension between taking individual action and strategizing based on relational interconnection is what I call the double bind of environmental toxicity. Neither option is adequate, and both are necessary, but the two sit awkwardly together. In this article, I suggest that childbearing—bringing a new person into being—is a liminal moment where we can see this double bind in microcosm. Both Steingraber’s call to abolition and the audience midwife’s pragmatism have a place.

The double bind could potentially be resolved by reimagining relations in ways that are decolonial and non-capitalist, by understanding toxicity in terms of the reproduction of power, and by effectively reworking foundational liberal assumptions about individuals and society that permeate the globalized world. Recent academic work has called for such reimagination, claiming that toxicity turns politics on its head and incites totally new forms of responsibility (or “response-ability”) (Liboiron, Tironi, & Calvillo, 2018). Such work envisions political action that is neither heroic and achievement oriented (like abolition) nor concerned with intimate personal harm and individual action (as are consumer politics). It urges us to consider how existing ways of thinking about toxicity are “premised upon and reproduced by systems of colonialism, racism, capitalism, patriarchy, and other structures that require land and bodies as sacrifice zones” (Liboiron et al., 2018, p. 332). The politics of material purity that underlays projects of clean up, avoidance, or antidote are anachronistic approaches to change; such purity is no longer available or was never viable to begin with (Liboiron, 2016; Shotwell, 2016; Gray-Cosgrove, Liboiron, & Lepawsky, 2015; Nash, 2008; Latour, 2004). Scholars have called for a “corporeal citizenship”

approach that places bodies and toxics into a complex web of material, ecological relations entangled with the social (Scott, Haw, & Lee, 2017), or a focus on “residues” that will not be contained in time or space (Boudia et al., 2018).

While I am deeply sympathetic to this framing and its politics, and in wholehearted agreement about its necessity, such an awareness is not (yet!) woven into the ways many people frame their ethical options in daily life, especially in the white and/or “middle-class” West. This article is a think piece that draws from my ethnographic experience in the California Bay Area, offering some reflections on how these two more conventional and accessible modes of navigating toxicity’s double bind might fit together and be recruited towards less conventional ethical and political understandings. Among those I spent time with during fieldwork, and from having spent a majority of my life in Northern California, much of conducting daily life and performing quotidian practices of care operates via consumer choices. In a market society oriented around purchasing goods and services, ethical thinking is somewhat inevitably framed by consumption. In the Bay Area, which has long been a crucible for “alternative lifestyles,” consumption practices readily take on a political cast. Additionally, political activism via demonstrations and social mobilization has a deep history in this place, offering itself as an alternative model, albeit one far less woven into the fabric of daily life. Although this article does not make an ethnographically based argument, ethnographic experience informs its stakes—that is, how do we, activists and scholars and concerned individuals, get from the options conventionally presented to us to the alternative political models toxicity requires of us?

I suggest that childbearing offers a particularly compelling site for thinking through the possibilities and limits of consumer politics as a response to chemical toxicity. Childbearing and toxicity both disturb conventional ideas about individual actors in such a way that it makes the necessity of collective political action apparent even to those most invested in consumer politics. By building on “new materialist” philosophy and reproductive justice critiques of consumer choice, I consider both social and ontological problems with an ethics and politics based on individual agents. Because the social and material are relentlessly interwoven, I advance an ecological conceptual framework that encompasses both sorts of relations. Ultimately, I argue that despite their flaws, consumer choices can be important acts of care alongside collective political action. Childbearing can be a catalyst for ecological approaches to politics—that is, approaches in which relations of responsibility and vulnerability are foregrounded

over individual rights.

Below, I first lay out issues with consumer politics, then outline new materialist critiques pertaining to toxicity and childbearing. Following that, I discuss how childbearing is a “critical period” in which senses of urgency, intimacy, responsibility, and consequence are heightened; environmental chemical toxicity is hard to ignore in childbearing both because it is particularly consequential and because childbearing is a highly relatable experience. In conclusion, I suggest ways my claims relate to current scholarship about the ecological politics of fluidity and kinship.

Consumer Politics and “Choice”

Consumer choice and the informed consumer are powerful ideologies of response to social problems in upper- and middle-class communities in wealthy market societies. They are powerful both in the sense of effecting some social change, and in stubbornly presenting themselves as the only options by which to do so. This ideology is aligned with both the fundamental liberal assumptions underlying such societies and recent neoliberal developments, particularly in the United States. Liberal societies are predicated on the idea of rights-bearing, contract-making individuals interacting in the public sphere for both business and politics.³ Increasingly, the “public sphere” is the marketplace in which individuals participate as consumers, while those with business interests in producing and selling are very large corporations. These conditions are related to at least three developments: the scaling back of social welfare programs and regulatory oversight since the 1970s to “free” the market as arbiter of the public good, while emphasizing individual responsibility (Harvey, 2007); citizenship becoming located in the intimate sphere, defined by personal and private acts instead of civic ones, and epitomized by the infant/fetus (Berlant, 2007); and the consolidation of corporate power, notably the 2010 *Citizens United* US Supreme Court ruling granting corporations personhood and first amendment protections. Consumer decisions largely pertain to the intimate realm of household and family provisioning.

Decisions made as a consumer (as opposed to a customer, a shift related to increasing anonymity and lack of accountability between parties in the marketplace), then, have become “consumer politics” and a site for public discourse. By using their “purchasing power” to support products and practices of which they approve, or by advocating for changes in the regulatory order of the marketplace—such as legal access to procuring the services of a homebirth

midwife, or protection from GMOs through labeling or a ban—consumers “talk back” to diffuse, anonymous corporations and engage with civil policymakers and legislators. Amidst the proliferation of products, brands, and consumer options in recent decades, notably the boom in manufactured chemicals and plastics after World War II, consumer strategies have also become a nuanced site for managing health, hygiene, well-being, and identity.

The California Bay Area, where I conducted ethnographic research on childbearing from 2013 to 2016, is host to trendsetters in consumer goods and services, “green” and “non-toxic” options foremost among them. While I will not detail the scene here as it was not the focus of my ethnography, consider one illustrative anecdote (see MacKendrick’s (2014, 2018) excellent work for a sociological elaboration of mothers’ green consumption practices). Natural Resources, a longstanding San Francisco–based childbearing store and community center, started offering “Non-Toxic Baby and Toddler” and “Non-Toxic Pregnancy and Nesting” classes in 2018. The email promotion details how the problem and its solution are posed as exclusively about consumer purchases and domestic habits, not around activist outlets for concerned parents:

Detoxify Your Habitat! Research has shown that pregnancy and the early years are an important time for child development, and that small behavior and purchasing changes do matter, with some having an almost immediate positive effect...[L]earn about how the environment you create in your home can impact your health and get for simple tips to protect yourself and your growing baby. You will leave with the knowledge and confidence to make science-based informed choices and decisions in this critical period of your babys [sic] life.

Becoming a parent and having the responsibility for the health and well-being of a brand new human is an awesome and scary proposition for many. Concerns that may have been just fleeting thoughts become of paramount importance when it comes to protecting your little one. For example...are the chemicals in the products you use every day safe or how can pollutants in the environment affect a child's development?

We know it's easy to get overwhelmed by all the information on the internet and not really know what is going to actually make a difference for the health of you and your family. At Natural Resources, we strive to make some choices a little easier by providing you with safe products like organic clothing & stainless steel baby bottles. We

also offer workshops to educate you so you can make the best decisions for you and your family...from pregnancy thru parenting.

Organic clothing and stainless steel baby bottles are significantly more expensive than more conventional options, which makes such “good choices” an exclusive option. Making savvy consumer decisions requires copious amounts of information about health research, environmental science, and often the ethics of production and labor, as well as knowledge of current trends, as this email indicates. In the United States, this is happening in a context of increasing deregulation—also in 2018, the Environmental Protection Agency placed the director of its own Office of Children’s Health Protection on “administrative leave,” raising concerns about closing the office, which has argued for tougher regulations on industrial pollutants (Landrigan & Goldman, 2018). The “informed consumer” as a moral ideal has dual valences that will be discussed more below—namely, it allows a degree of satisfying agency yet can slip into a bottomless responsibility that frames undesirable outcomes as personal failures. It is also part of changing relationships to “expert knowledge” that challenge institutional authority and trustworthiness (Ehrenreich & English, 2005/1978; Corburn, 2005).

Consumer politics is essentially a politics of choice, which is a prerogative of individuals. Of course, for as much as liberal societies emphasize individual persons (Dumont, 1992), particularly the United States with its founding settler mythology of freedom and self-making, individuals are always enmeshed in—and dependent upon—social relationships with one another. Indeed, “the social” is an idea predicated on interactions between individuals (Young, 1980). Laws and policies shape these interdependencies between citizen and state, parent and child, clients and providers, and consumers and sellers. Legislation can protect consumers from harmful options, and/or protect corporate “freedom” from accountability for the effects of their products. Consumer politics are an attempt to shape such relations. They are predicated on collectivity because enough people have to act similarly to have an effect, even while the framework foregrounds individual action.

“Individuals” and “relations” are not opposed, and hardly mutually exclusive, but by focusing on one or the other different things come to the fore. In general, neoliberal reforms and market strategies emphasize individual “freedoms” from relations, obligations, and responsibilities external to oneself, while movements for social justice emphasize structures and histories that put people in unequal relation with one another. As a strategy for social justice, consumer politics is limited; more comprehensive and inclusive justice strategies point out how only a

privileged subset of middle- or upper-class, usually white, people can “express” their values, needs, and desires via consumer choices. They point out how discourses of individual freedom or personal responsibility erase relations of structural and historical violence that condition and limit the possibility for individual agency (Ross & Solinger, 2017).

Childbearing is an interesting site where liberal political assumptions break down. The pregnant person, and to some extent the potentially pregnant person, nursing person, or caretaker of an infant, is implicated with the fetus, infant, or child such that interpreting either as independent, rights-bearing, choice-making individuals is complicated. This difficulty is epitomized in abortion politics, although it is also present in discussions about maternal-fetal medical care (Casper, 1998), reproductive technologies (Franklin, 2006), and child protective services. Debates about fetal and embryonic rights (Cromer, 2018; Roberts, 2011) can be seen as a doubling-down of insistence on liberal conceptions of personhood. In abortion and related issues, this conception of persons frames fetal and pregnant people as having competing claims on rights. Misogynist discourse about fetal personhood often sidelines or outright erases the pregnant person’s subjectivity (Bordo, 2004), related to the “privatization of citizenship” in which the fetus/infant is the ideal, innocent citizen (Berlant, 2007). Asking whether the fetus’s “right to life” trumps the mother’s “right to choice” frames the discussion in terms of individual, separable persons, no matter which side one argues for, including strident advocates of abortion as a social good (Pollitt, 2014). In the immediate term there are important consequences for how fetal vs. maternal rights are prioritized, but my point here is that the fundamental concepts, figures, and categories used to negotiate life in wealthy, liberal societies fit awkwardly with childbearing. Childbearing is a liminal phase during which social organization is differently visible, both weakened and, consequently, reinforced (Davis-Floyd, 2004/1992).

Following abortion politics, much reproductive rights activism centers on “choice.” Although the 1973 *Roe v. Wade* US Supreme Court ruling that legalized abortion did not protect women’s choice or adjudicate between competing rights of persons—it protected the right to privacy between a doctor and patient, a special type of relationship—pro-abortion advocacy almost ubiquitously gets turned into “choice” in popular discourse, sidelining relationships in favor of individual prerogative. Yet the ability to choose assumes any number of relational privileges, such as access to health care and absence of coercive medical practices that have long been part of marginalized people’s reproductive history (Roberts,

1997; Washington, 2006). In this way, the freedom to make reproductive choices is analogous to the freedom to make consumer choices. The most prominent feminist advocacy for reproductive choice tends to represent the interests of white, middle-class women and follow a consumer politics logic, whether for access to contraception, abortion, or homebirth midwifery; critiques of these movements note their exclusivity while recognizing their importance (Craven, 2010).⁴

Frameworks based on choice have been critiqued by many intersectional feminist scholars, especially pertaining to reproduction. Reproductive justice scholars and activists have produced a large body of work that embraces freedom from coercion while moving beyond that to insist that all people need good options from which to choose (see Ross and Solinger's 2017 summative introduction to the field; also Roberts, 1997 and many others). Discourses of choice tend to hold individuals accountable for situations beyond their control, individualizing responsibility while overlooking systemic injustice. Ensuring general access to good options, by contrast, requires thinking systemically and historically and adopting some degree of collective responsibility for the situation in which we each find ourselves. A justice lens will bring into focus the ways some people have better options than others due to systematic inequality, and not personal merit. In the case of abortion, for example, in order to actually have "free choice" among options, pregnant people need not only legal abortion but an accessible facility with a (culturally) competent and affordable provider, access to the means of supporting a child should they want one, a safe community in which to raise the child, and so on.

Where childbearing and chemical toxicity overlap, the limits of choice and consumer politics are evident. Sociologist Norah MacKendrick (2018) shows how putting the onus of protection on consumers through a "better safe than sorry" model of green shopping barely scratches the surface of the toxicity problem. In addition to being socioeconomically exclusive, looking to consumer choices for solutions puts a huge share of the burden on women, especially mothers, who do most of the quotidian shopping and household management. Such "precautionary consumption" (MacKendrick, 2018, p. 4) is a costly and time-intensive practice, one that is connected to cultural ideas of femininity and good motherhood (MacKendrick, 2014). Choosing food and household products that are safer from a toxicity standpoint requires vast amounts of label reading, mental tabulation of brands and ingredients, less-efficient routines, and efforts to become informed, on top of the greater burden of domestic and reproductive

work which women already bear. It also requires that accurate information be accessible to consumers, which is often not the case, due partially to inadequate labeling but moreover to the dearth of research about many chemicals' effects. Of the 85,000 chemicals registered for use in the United States, only a small proportion have undergone environmental and health screening, which can be interpreted as a major failure on the part of the federal government to respect the state–citizen relationship, at least by providing information with which consumers can make “informed choices,” if not protective legislation relieving them of that burden.

The politics of maternal responsibility extends beyond “green” consumption. In work on epigenetics and pregnancy, anthropologists Natalie Valdez (2018) and Janelle Lamoreaux (2016), working in the US/UK and China, respectively, emphasize how women’s bodies are treated in science and policy as womb-environments that can pollute the fetus.⁵ This not only demonstrates the willingness to subordinate a mother’s personhood, needs, and desires to those of the child, but disconnects the maternal body from the environment in which it is itself immersed, looking past the shared responsibility for that environment by targeting interventions at pregnant women’s decisions and lifestyles. Thinking about women’s bodies as carriers of future persons who take precedence starts even before conception (Waggoner, 2017). Mothers are presumed to “naturally” care for children; she who fails to nurture is a “monster” (Tsing, 1990). Mothers are held culturally responsible for mitigating myriad forms of insecurity (Villalobos, 2014) and are caught in numerous double binds (Bristow, 2014) and pressures to be “superwomen” (Douglas & Michaels, 2004). In the opening anecdote, Steingraber’s call to activism—“Mom’s on the job”—draws on and perpetuates ideas of maternal responsibility. Childbearing is a liminal state between one person and two. Limits are always dangerous, sites of breakdown and transformation; intense pressure on mothers functions, among other things, as a reinforcement of the status quo.

Material Interconnection

In addition to embodying complicated social personhood, childbearing highlights the co-implication of bodies at the material level. Not only does the physiology of pregnancy make it obvious how incommensurate some claims to rights can be, it undermines the implicit distance between “individuals” that social relations bridge. The material relations of childbearing are an interdependence that has no distance: co-being. Such co-being has been theorized as the “motherfetus” (Takeshita, 2017), and I encountered the related term “motherbaby” not

infrequently in fieldwork among birth practitioners in California, usually intended to encompass the “fourth trimester” of infant care and breastfeeding to highlight how the infant continues to be co-embodied even out of the womb. Focusing on such co-being introduces different political pathways. It might seem regressive and problematic to conceptually fuse mother and fetus into one being, and with good reason, since much activist discourse championing reproductive rights, choices, and autonomy operates by valorizing women’s individual personhood and asserting that it should not be subordinated to outside interest in their reproductive capacities. Yet if the childbearing body is taken seriously as suggesting or requiring a reconceptualization of persons, and consequently a different politics because bodies are interwoven with one another, it offers an interesting comparison with environmental chemical toxicity, which also highlights material interconnection that transcends individuals.

Such transpersonal material relations are the subject of new materialist feminist philosophy that often engages environmental justice. This work, and many of its conceptual ancestors, advances a framework that pushes against the idea that bodies are bounded entities, and the commonsense idea that bodies, matter, or “nature” are preexisting and independent of the human minds that make sense of them. From this perspective, discrete human bodies are an idea as much as a physical reality. Although physics and chemistry have long done away with the idea of matter as composed of tiny, rigid, discrete objects (e.g., Whitehead, 1978/1929, whose 1929 “process philosophy” framed molecules as events, not things), the dualist Western lay understandings that have underpinned much social theory still tend to view matter as unresponsive and fixed, as an entity rather than a process. New materialism builds on a legacy of cultural scholarship advancing a non-dualistic understanding of humans and worlds, describing the complex interactions between matters inside and outside of bodies, and between the social and environmental conditions in which bodies exist. Stacey Alaimo (2016) calls these “trans-corporeal entanglements” (p. 2).

Though “new materialism” is a reference to classical Marxist materialism, which emphasizes that the material conditions of existence (how people feed, clothe, and shelter themselves) are prior to ideologies of social relationships, it also draws from Black, postcolonial, and Indigenous thought, though not always explicitly. Indigenous metaphysics, for example, has long embraced the interconnections between life and non-life, human and nonhuman (Tallbear, 2017). New materialism bears debts to corporeal feminism and medical anthropology, which have embraced bodies as materio-semiotic (Haraway, 1991), described a material

and experiential “lived body” (Lock & Farquhar, 2007), shown sex and gender to be both social construction and physical matter (Grosz, 1994), and described how matter and meaning come into being together (Barad, 2007), among innumerable other contributions.

Two new materialist discussions of shared materiality in pregnancy illustrate the potential for thinking childbearing and environmental chemical toxicity together. Chikako Takeshita (2017), credited above with the term “motherfetus,” starts from the materialist premise that a “fetus” is not preexistent as an object with a distinct agency that interacts with the “mother.” Discussing the role of symbiotic bacteria (the microbiome) in human reproduction, she deconstructs pregnancy as a bidirectional exchange of substances and instead frames it as a symbiotic process involving complex networks of microbial activity. This allows her to think of the childbearing body as a *holobiont*, an assemblage of different species forming an ecological unit. Second, in her piece “Eating One’s Mother,” Eva Maria Simms (2009) likewise describes childbearing on a scale both more minute and more expansive than that of individual bodies, through a phenomenology of the womb and a “placental ethics” (p. 274). The womb is a very different metaphor for phenomenology than the self-contained individual immersed in a world of perception (following Merleau-Ponty) or sensation (following Irigaray). Instead of metaphors of vision or touch, which she says Merleau-Ponty and Irigaray respectively privilege, Simms uses the metaphor of the placenta to think about a “flesh ontology” (which Merleau-Ponty mentions but never develops) (p. 268). She describes an experience of fluid permeability and depth instead of transcendence, sinking into the intimate space of the womb where there are no separations that need to be bridged by touch because the material of existence is held in common.

The placenta is the only mammalian organ that is made up of cells from two separate organisms—it is neither one nor the other. Placentas are also born, and they die, potentially many times within the lifespan of one person. Simms develops a placental ethics in which humans might see themselves as a conduit that holds substances for a time but always eventually passes them back into circulation, via elimination, death, and birth. Decisions like taking medication or ingesting pesticides have effects beyond one’s own body (Masco, 2013), and decisions made by others impede the possibility for sovereignty over one’s body. Sites of co-embodiment between generations are also sites of co-embodiment with the surrounding world, highlighting both temporal and spatial interconnectedness. Simms (2009) writes,

The sojourn in the womb is not merely a matter of the relationships of a series of female bodies with their fetuses. The fetal ecosystem is nested in the ecosystem of the mother's body, which is nested in the larger ecosystem of the Earth....The fetus' health and the well-being of future generations are intimately entwined with the health of our planet...[T]he damage to our environment is not just "out there," but it goes as deep as our placentas (p. 271).

Placental ethics calls on us to recognize ourselves not as individuals but as integrated parts in a field of being.

"Ecology," a term adopted by much new materialist theory, is a way of describing what might otherwise be thought of as the environment. Conceptually, "the environment" uses a form/field model of something external to a (human) subject, a material surround on which we can act, about which we can make choices—such as which aspects of it to internalize by eating. But granting that various aspects of the world—both human and nonhuman, material and social, vital and inert—have agency in how the world is continuously made and remade decenters the human. Instead of imagining the world in terms of bounded entities and their contexts, ecological thinking merges humans and nonhumans into relations composed of both social meanings and matter itself. Using the framework of ecology to speak about lived experience marks the myriad forces and interests at work in even the most basic organismic functions: metabolizing, sensing, reproducing. Ecological relations are processual—they take place over time and are contingent, evolving, and responsive. Ecologies are interconnected even as they are localized, so there are relations between ecologies, too. We are inextricably in relationship with what surrounds and composes us—for better or worse—and these relations are not something over which humans, much less any given person, wields control.

Yet, despite chemical exposures having universal implications that far exceed households, neighborhoods, territories, or national borders, such as those explained in the opening anecdote, some people are in more vulnerable positions than others. Environmental justice theorist Rob Nixon (2011) develops his framework of "slow violence" to explain how toxins seep slowly into bodies, especially poor and marginalized bodies, in ways that are unremarkable and overlooked. Toxic exposure is often greater for those working and living in close proximity to working-class industries like agriculture, oil refining, manufacturing, or mining, and in places with less geopolitical power, lax regulation, and less ability to resist corporate exploitation. This differential exposure is systemic, and

cannot be addressed by individual consumer choice. Exposure is racialized in more subtle ways, like particularly inadequate labeling on cosmetic products for Black hair. It is also gendered, as women are more likely to suffer poorly understood diseases correlated with toxicity: multiple chemical sensitivity, fibromyalgia, endometriosis. Margaret Lock (2017) has theorized this difference by distinguishing between “local biologies” (p. 5) and “situated biologies” (p. 11)—situated biologies point to the Anthropocene to show how everybody is affected by human-induced environmental changes, while local biologies exist within this universal exposure and are differentially stratified, putting some populations more at risk of detrimental health outcomes than others. Rather than emphasizing class and racial inequalities in the distribution of harm, which can re-entrench those inequalities and stigmatize groups or kinds of people as “damaged” (Murphy, 2017), thinking with the universality of exposure could direct attention to our shared need to find better ways of living.

Critical Period

Childbearing is, in overlapping senses, a “critical period.” It is site of much critique and judgment of mothers/women, as discussed above, and it is overdetermined as a site of important new feelings and solidarities, as I will discuss below. But it is also a critical period in the development of the new being, formative of their health, temperament, and physicality in ways that are proliferating in scientific and theoretical awareness.

In addition to mercury, the key disruptor in the opening anecdote, there are a number of other synthetic and naturally occurring chemicals that cause damage during gestation and breastfeeding, including lead, pesticides, PCBs (polychlorinated biphenyl, an industrial neurotoxin), and BPA (a component of plastics). All of these toxins are transferred via the placenta. There is a widespread but mistaken idea of the placenta as a protective barrier; while the placenta does prevent *bacteria* from entering, it actually facilitates the transfer of many chemicals, including harmful ones. Methyl mercury and pesticides become even more concentrated in umbilical cord blood than in the mother’s blood. The barrier myth was shattered in the 1960s with the thalidomide scandal, in which mothers given that drug for morning sickness gave birth to babies with severe deformations, like missing arms or legs (in fact, Martin & Holloway (2014) show how the placental barrier idea only emerged after this scandal caused the medical community to become disillusioned with it: it became something that does not exist). The diethylstilbestrol (DES) scandal followed swiftly in the 1970s, in which teens and young adults suffering from unusual cancers and deformities of the

reproductive system were discovered to all have been born to women who took the pharmaceutical DES during pregnancy in the 1930s, when it was commonly prescribed to prevent miscarriage. DES taught us that birth defects are not always immediately visible. The placenta does not recognize many modern chemicals as invaders, trace amounts of which can have major consequences for fetal development.

The endocrine (hormonal) system seems particularly vulnerable to disruptive synthetic chemicals, which can mimic hormones or block their receptors. Hormones are chemicals "manufactured" by bodies themselves, and regulate innumerable processes from puberty to metabolism to mood. Indeed, many common pharmaceuticals are synthetic hormones, blurring the line between "disruption" and intentional alteration. Endocrine disrupting chemicals (EDCs) are ubiquitous, appearing in human, animal, and plant tissue as well as water, air, and consumer products. Merging bodies and their surroundings, they transgress organic boundaries with ease and literally reshape biologies (Murphy, 2008), with numerous potential implications for reproduction.

Many others toxins are shared through breast milk, in which toxins are more concentrated than in the nursing person's body. In her talk, Steingraber used this fact to claim that it is not the adult human at the top of the food chain, but the human infant. Breastfeeding people actually lose toxins from their fat stores in decreasing proportion to the number of children they've nursed; the first child to suckle serves as kind of detox, and after nursing many children, a person gets rid of her own toxins by passing them on (Steingraber, 2003).

On top of this developmental sensitivity, childbearing is a period of transition that is, in many ways, overdetermined. So much is projected onto it as a life-changing event or process, in which people start caring in different ways, and start *being* in different ways. People assume different responsibilities, and encounter myriad exhortations to think differently about their choices. As the email earlier in this article states, "Concerns that may have been just fleeting thoughts become of paramount importance when it comes to protecting your little one." A powerful urge to protect one's children and foster their health accompanies childbearing for people across class lines, whether the mothers shopping at Whole Foods Market in Norah MacKendrick's (2018) sociological study of green consumption or the incarcerated, addicted, homeless women in Carolyn Sufrin's (2017) ethnography of pregnancy in jail. This urge to protect one's children can exacerbate concerns about chemical interfaces between bodies and environments

(whether via intentional drug use or inadvertent exposures), or introduce such concerns to people who may not have been aware of them before.

Childbearing introduces new concerns and also new solidarities—being pregnant or having an infant can provide a sudden bond with other parents, including one’s own parents or others of an older generation, as well as those with whom one otherwise has little in common. It can be a rallying point for empathy and the possibility of connection. Yet solidarities bring with them the potential for control, as when others assume the prerogative to comment upon a pregnant or infant-rearing person’s actions, whether family members, strangers on the street, or state legislators.

A majority of people have been directly involved in childbearing at some point in their lives, when including fathers and others who parent but do not gestate. Yet only a minority of people are experiencing the actual period of conception, pregnancy, and infant care at any given time. Thus, childbearing offers a fairly universal opportunity for recognition and collective action across lines of class, race, age, and geography, while at the same time it is a temporary state composed of daily decisions and actions made largely by one or two particular caretakers. Childbearing highlights both collectivity and individuality, mirroring the double bind of environmental chemical toxicity.

Given these multifold senses of “critical,” childbearing becomes a site where environmental chemical toxicity is hard to ignore because it is both consequential and linked to a highly relatable experience. In ways, bearing children is to toxicity what being from the Maldives is to climate change, which is much harder to ignore from this island nation sinking under rising sea levels—except childbearing is a much more common situation. It could be a focal point for galvanizing those least threatened by environmental toxicity to care about it. Given the interconnectedness of matter and the impossibility of achieving “purity,” one cannot protect oneself from toxicity. Yet acknowledging that by this same logic one cannot protect one’s children produces an imperative to care, adding urgency to Steingraber’s “abolitionist” goal. Childbearing offers an opportunity to emphasize solidarity among people who might not see their well-being as intertwined.

However, the imperative to care in quotidian, practical ways for a dependent new being also highlights the importance of individual decisions and consumer choices, particularly on an emotional level. For many middle-class people, making

“green” choices can involve feeling empowered and morally responsible, while hitting the limits of one’s resources can involve feeling frustrated and impotent. The moral ideal of the “informed consumer” allows for the former sort of satisfying agency, yet its flip side is a bottomless responsibility that frames mistakes and undesirable outcomes as due to one’s own failure. For those used to thinking of themselves as independent agents, a heightened awareness of interconnectedness and universality can mean grappling with futility and complicity—in Steingraber’s “well-informed futility syndrome,” this is crippling. Buying the right things is, emotionally, a readily accessible way to seize a bit of control and act in the best interest of one’s children (MacKendrick & Stevens, 2016), which are important acts of care. This is important to recognize and honor, while also acknowledging its inadequacy and the need to find affective agency beyond consumer politics. It would be helpful to valorize and seek the more difficult satisfaction of saying “Mom’s on the job,” whether through “heroic” activist organizing or developing networks of corporeal citizenship.

Conclusion

Both childbearing and environmental chemical toxicity foreground a heightened awareness of interconnectedness and universality alongside the necessity of making everyday decisions and actions as individuals. The possibilities and limits of this double bind hinge on the ways “relations” can be thought and enacted. Material relations that are brought to the fore in both childbearing and chemical toxicity push justice movements into territory beyond a liberal politics predicated on individuals. Toxicity does require thinking of the social in terms of systemic power and histories of “sacrifice zones” (Liboiron et al., 2018, p. 332). Yet in a practical sense, the imperative to quotidian care remains. We may rally for abolition of the petroleum economy and regulation of chemical industries, and may recognize how this falls short of a non-capitalist, non-colonial, non-heteropatriarchal change that would do justice to our material co-being, and yet we also need to feed and wash and care for our children in neoliberal postindustrial settings *today*. In this paper, I have explored some effects of emphasizing certain kinds of relations or individuality as sites for channeling the extra-ordinary energy around childbearing into action on the problem of environmental chemical toxicity.

Thinking of chemical toxicity and childbearing in terms of ecology foregrounds relations, as described above. It is not recognizing “relations” per se that is emancipatory; relations can be harmful as well as nurturing, and there are complex historical and cultural politics woven into describing things in terms of

relations in the first place (Yates-Doerr, 2019). It is *how* we think of those relations that is interesting—how we might balance relations to particular individuals such as one’s children and to larger ideas of community, humanity, or world, or what kind of resonance exists between social relationships *among* individuals and relations *composing* “individuals.” Consumer choice is an ideology of response to social problems that is symptomatic of resistance to an ecological mindset; yet relations of care can be mediated by consumer purchases, and such choices are part of relational ecologies. There is no way to achieve “purity”—the slate has never been clean, there is no pre-toxic state we can recover, and aiming for such a thing can undermine the possibilities that are at hand. Choice viewed ecologically can become care. Consumer politics is no “solution” but one possible way to enact care. Such action is essential to resist despair and the indulgence of apocalyptic thinking (Haraway, 2016), but requires not slipping into false security.

Steingraber’s story emphasized water, how it flows and toxicity with it. New materialist philosopher Astrida Neimanis (2012, 2013) thinks about ecologies in terms of spatial and temporal fluidity, as a conceptual metaphor pushing against bounded entities, with ethical implications. The material world is fluid and porous, and steeped in the immaterial. Effects from this processual interconnection are not immediate or straightforward; they may be latent, persistent, symptomatic, ambiguous. They may be carried throughout generations. For my purposes here, water metaphors can describe both differential damage and universality. Water flows and connects but not totally, not uniformly; flows can be managed and limited, yet nonetheless always exceed control. Fluid does not expand to fill space like a gas, yet can vaporize and is trickier than we think. Individual consumer choices might be described with metaphors of higher ground, building levees, patching your boat. The universality and excess of toxicity might be described as a sinking ship on which we are all aboard, a sea level rising. It may be futile, in the end, to get on higher ground, but it also matters in the meanwhile, an aquatic version of the familiar “canary in the coal mine” metaphor. The individual/universal paradox might be thought with dams, eddies, riptides, seepage. Is limited “high ground” a limit to solidarity? Is getting oneself to higher ground opposed to being an “abolitionist”?

A final thought for grappling with the possibilities offered by thinking childbearing and environmental chemical toxicity together: kinship is an approach to relations par excellence. Long the provenance of anthropologists, it has much to offer a project of thinking “ecologically.” Adele Clarke and Donna Haraway’s (2018) recent collection *Make Kin Not Population* draws attention to kinship as a way of

making relations that are not reducible to colonial family structures or biological reproduction, as a move toward feminist, environmentalist, Indigenous, queer forms of liberation and ethics. Thinking about how to make kin relations is a way around the limited time period of childbearing. Kinship endures, whereas pregnancy does not. Childbearing is a moment of destabilization and unsettling, but to some degree people resettle and restabilize; perhaps thinking with kinship is a way of holding onto this fleeting, rich moment of recognition, to keep its potential alive.

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Notes

¹ See, for example, the following biomedical research: Buck Louis, G. et al. (2012); Messerlian, C. et al. (2018); Roncati, Pisciollo, & Pusiolo (2016); Sutton et al. (2012); Zlatnik (2016).

² For all statistics and facts cited in this opening anecdote, see Steingraber's (2003) *Having Faith*.

³ The development of the liberal social contract in Enlightenment-era politics implicitly created a "private sphere" opposed to the new public sphere, where intimacy, embodied needs, emotions, and the family were supposed to take place; these spheres are highly gendered. See Pateman's (1988) *The Sexual Contract*. The misfit between childbearing and liberal personhood that I discuss below is related to this supposed division, though there is not room for an extended discussion here.

⁴ Note that "reproductive rights" often refers to such choice-based movements, although reproductive justice may use the language of rights as well (as Ross and Solinger [2017] do). "Autonomy" and "self-determination" are also used, but there is not space to delve into their relation to rights, individuality, and justice here.

⁵ While I often use less-gendered language to discuss childbearing, such as "pregnant person," in this case the politics under discussion brings gender to the fore.

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