

Seven

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Queering Endocrine Disruption

Queering endocrine disruption. What do I mean by this? For those who are familiar with the ecological alarm around endocrine disruption, it may seem to be already queer, not needing a present progressive verb from the likes of me. In addition to its association with breast, prostate, and other cancers, the major story of endocrine disruption is this: there is considerable scientific evidence that toxic chemicals that pollute our environment interfere with the endocrine systems of wildlife, contributing to an increased prevalence of animals that are sexually atypical—with lowered fertility, intersex characteristics, and pairing with animals of the same sex. I am by no means the first to point out that there is homophobia embedded in that ecological alarm. Many writers in feminist and queer ecocriticism have pointed out that discourse of endocrine disruption in both scientific and environmentalist literature has exemplified a “sex panic.” Posing intersex characteristics as the sine qua non of harm to our environment is a move steeped in heteronormativity. And yet to my knowledge, no one is celebrating the queer here. In this chapter, I want to suggest that we depathologize queer animals, even when that queerness is the product of human-produced toxins in the environment, and even when it inhibits animals’ reproductive capacity. Perhaps we even might find a perverse joy here.

A minor article in *Nature News*—the general interest auxiliary to the premier scientific journal *Nature*—is the jumping-off point for my contemplation.¹ The headline is “Mercury Causes Homosexuality in Male Ibises.” The term *homosexuality* resonates with a (human) identity

category. Since animals of course do not check boxes on surveys, the reference is fundamentally to observed behavior. The subhead is typical of the scientific literature on endocrine disruption: “Environmental pollutant radically changes birds’ mating behaviour.” The article is concerned with the declining reproductive rate of the birds and suggests that a rise in male pairs is a significant factor. The research article that the *Nature News* piece is publicizing appeared in the *Proceedings of the Royal Society of London B: Biological Sciences* as “Altered Pairing Behaviour and Reproductive Success in White Ibises Exposed to Environmentally Relevant Concentrations of Methylmercury.”² The term *altered* can provide a route to the queer—not precisely an identity, but a disruptive lens.

One could write a whole paper just deconstructing these articles’ use of the terms *heterosexual* and *homosexual* and *female-typical* and *male-typical* to describe the birds in the study, since these terms are so obviously resonant with human identity categories and gender stereotyping. For my focus, I am just as interested in the more modest terminology of the headline: the “altered pairing behavior” is toward the homosexual, specifically male–male. The ultimate question that the researchers are interested in is impact on “reproductive success.” Now, this may seem fully appropriate. For biologists, reproductive success is often understood to be the final cause of animal existence, which is to say that the aim or purpose of the animal is to reproduce. Yet from whose perspective is reproductive success the ultimate definition of “success”? God’s, Darwin’s, ecologists’, or the animals’?

From a queer feminist perspective, should we automatically decry the flourishing of nonreproductive male pairs of birds? The *Nature News* article features a photograph of a pair of white ibises walking along a Florida beach, in ankle-deep water, with a gently breaking wave just beyond them. I want to suggest that we sufficiently embrace the temptation to anthropomorphize so that we can see that gay stroll as having value in and of itself, and question whether reproductive fitness is the ultimate purpose of animal existence.

The queer theorist and critical linguist Mel Chen has pointed out the common roots of the words *toxic* and *intoxication*.³ Chen is working at the intersection of disability studies, animal studies, and critical race theory, and compellingly argues that toxins deterritorialize by breaking down boundaries between organisms and environments, and

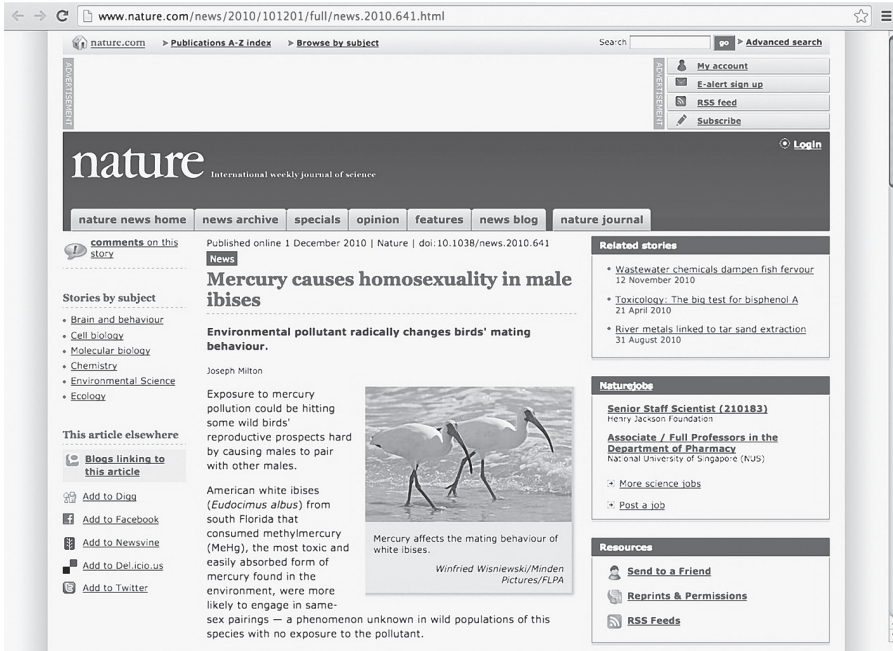


Figure 7.1. Screenshot of *Nature News* article “Mercury Causes Homosexuality in Male Ibises,” featuring a photograph of a pair of ibises walking along a beach. <http://www.nature.com/news/2010/101201/full/news.2010.641.html>.

that queering is immanent with these animate transgressions. I want to read these birds strolling on the beach without any chicks as *intoxicated*. Yeah, maybe these birds are “fucked up” by their polluted environment. But I do not think that I am saying too much about my own experiences of intoxication, or assuming too much about that of the reader, to point out that it can be fun to be fucked up. As the cultural studies theorist Kane Race points out in his broader argument for a queer politics of drugs, “Pleasure is more or less absent from serious talk within public health, but it is a common enough motive for, and element of, human activity.”⁴ Being intoxicated is an ambivalent state: impaired, yes, but also released from responsibility in particular ways that can be both dangerous and pleasurable.

Sobriety, purity, health, and safety tend to travel together discursively, all on the side of the good. But sobriety should not necessarily

be considered the default natural state, much less the purest or most healthful. Of course, the assumption that health optimization should be a primary goal of human beings is a notion laden with morality.⁵ In an ideological framework in which purity is located in the premodern past and is sullied by modern pollution, it is easy to forget that in many ways water is and has been much more dangerous in other times and places. During much of the history of civilization in the West, contamination of the human water supply created conditions in which mead has been safer to drink than water.⁶ The contemporary presumption of an opposition between inebriation and health is not inevitable. Permanent intoxication is a reasonably common condition of human societies historically, and people may well have enjoyed that state.

A key problem of intoxication, from the perspective of disciplinary actors, is that it decreases thoughtful consideration of the consequences of today's actions for tomorrow. Endocrine disruption discourse is deeply wrapped up in the notion that these artificial chemicals in our environment are depriving natural creatures of the future, as exemplified by the domain name of the citizen-science-oriented site "ourstolenfuture.org" (itself building on the landmark 1996 book on the topic, *Our Stolen Future: Are We Threatening Fertility, Intelligence, Survival?—a Scientific Detective Story*).⁷ Lee Edelman's *No Future: Queer Theory and the Death Drive* is helpful here. Edelman's provocation is compelling: "Queerness names the side of those *not* 'fighting for the children.'"⁸ These birds may provide an opportunity to disambiguate the concept of Edelman's title, "no future," from the one in his subtitle, "the death drive." Their diminished "reproductive success" is a literalization of a lack of future-orientation, but without the presumption of any death drive for an agential subject. Edelman's calls for "embracing the negativity of the queer" can be characterized as "antisocial."⁹ But although these birds' sociality is circumscribed (no intergenerational community), it is not erased (male pairing). Their stroll is neither suicidal nor solitary. These birds are living in the moment and for themselves, rather than for the children.

The joy the birds may share does not seem to be an antisocial *jouissance*. It may be more in line with a feminist joy, perhaps a sharing of joy that Audre Lorde posits as "uses of the erotic" and that Angela Willey draws on as a source for thinking through "biopossibility" of

monogamous reproductive pairing and beyond.¹⁰ It is resonant with the queer sociality that Elizabeth A. Povinelli explores: “an obscene enjoyment” that has “no part in the social contract” yet “creates a queer sort of social bond.”¹¹ The toxic becomes, as the art theorists Antke Engel and Renate Lorenz argue, a condition of possibility of a sociality “formed not by healthy, sane, and self-same bodies claiming wholeness, autonomy, and control, but by toxic (intoxicated/intoxicating) bodies affected by and affecting toxic assemblages and forming queer socialities.”¹² Insofar as the birds are altered by methylmercury, they come into relationship with one another from a compromised position. There is no organic wholeness before or after their stroll, but there may well be joy in the communion.

The birds might be “queer survivors,” in a very modest way. The feminist historian Michelle Murphy uses the term *queer survivor* to describe another animal affected by the endocrine-disrupting chemicals: the round goby.¹³ This species of fish is altered by but still flourishes in the highly polluted water of the Saint Clair River that connects Lake Huron to Lake Saint Clair, near Detroit. In Murphy’s account, the round goby finds good nesting sites among the garbage and has altered ratios of its multiple sexes in response to toxicity, allowing its population to thrive in that chemically altered landscape. Often decried as an “invasive species,” Murphy refers to the round goby as a “queer survivor.” Murphy posits “the capacity for intergenerational life” as an alternative to the heteronormative logic common in endocrine disruption discourse. But why must life be intergenerational in order to be worth living?

The emphasis on the intergenerational and on genetic continuity is an undue limitation on queer possibility. As the queer theorist Jack Halberstam has argued, “The deployment of the concept of *family*, whether in hetero or homo contexts, almost always introduces normative understandings of time and transmission.”¹⁴ In living queer lives, “we may want to forget family and forget lineage and forget tradition to start from a new place.”¹⁵ These birds’ stroll can evoke the slogan, popular on magnets and T-shirts in gay bookstores among other places, of a pop art woman’s face with the text “Oops, I forgot to have kids.”

Indeed, these ibises’ altered pairing is a chance to think about biodiversity beyond the reproductive frame. Consider this conventional definition of biodiversity, from the *Encyclopedia of Biodiversity*: “The

variety of organisms considered at all levels, from genetic variants within the same species to the whole range of species and ecosystems.¹⁶ In this model, all diversity at the individual level is reduced to genetic diversity within a species. However, this is out of step with contemporary biology's epigenetic paradigm, in which genes need not be thought of as deterministic because their expression is necessarily contextual.¹⁷ DNA is not the only biological substance that makes up organisms. A friend of mine in an epigenetics lab liked to use an analogy with grammar to explain how it is that knowing the letters of the genotype does not necessarily reveal the phenotypic expression in an organism: if we understand the genetic code as the letters, epigenetics might be understood as punctuation. Her go-to example was the phrase "woman without her man is nothing." With different punctuation, the same words become "Woman! Without her, man is nothing." Although this example implies a complementarity that I would not endorse, it does capture the nondeterministic quality that genes take on in context. The epigenetic turn still leaves aside the fact that existence exceeds the somatic—experience would matter even if it did not become embodied, and has its own value for the organism independent of its physical trace. But even in strictly biological terms, the lived biologies of individuals are diverse in far more ways than can be accounted for by simple genetic variance. These birds' altered bodies are also examples of bio/diversity.

Like the literature on endocrine disruption generally, these articles from *Nature News* and the *Proceedings of the Royal Society of London B: Biological Sciences* operate on the assumption that change in animal behavior and biology because of human pollutants is necessarily bad. Many feminist biologists have shared this assumption, including Lynda Birke (whose book *Feminism and the Biological Body* I deeply admire).¹⁸ Birke is particularly worried that endocrine disrupters' effects on the reproductive capacity of animals might be applicable to humans, too. For Birke, endocrine disruption because of pollution spurs her to describe herself as "sitting on the fence" between social constructivist feminist critique and activist biologist feminist critique.¹⁹ On the one hand, she is critical of the binary (mis)understanding of gender in the scientific and activist discourse around endocrine disruption. At the same time, she is alarmed that "there are several ways in which women's health might become compromised through exposure

to endocrine disrupting chemicals” and that “the possibility of damage to reproductive health is undoubtedly a feminist issue.”²⁰ A feminist issue, yes, but no simple one.

In this analysis, Birke implicitly defines lowered fertility as “damage to reproductive health.” This is peculiar given the prominence of affordable access to oral (hormonal) contraception in contemporary political arguments that travel under the rubric of reproductive health. Feminists have lots of reasons to like exogenous hormones, including precisely for their ability to inhibit reproductivity.²¹ Birke’s conflation of reduced fertility and “damage to reproductive health” perhaps reflects a biology-rooted frame, in which reproduction is the goal of an organism’s existence, or perhaps just a normative heterosexist frame, in which reproduction is the goal of the family. What of the actually existing women who experience their fertility as itself a burden?

Birke laments that in the literature on endocrine disruption, as usual, most of the attention has gone to the impact on men, specifically sperm count and quality. But, operating on the assumption that human couples who find it difficult to conceive will pursue assisted reproductive technology, which often involves a regimen of further exogenous hormones administered to women, Birke argues that this may expose women to still more risk: first from endocrine disruptors in our environment, and then from the exogenous hormones we take to deal with the resulting infertility. The science that Birke is describing is all speculative, but Birke is clearly worried. She writes, “It may be true that the evidence for deleterious effects is clearer for wildlife exposed to high levels of chemicals through chemical spills, than it is for human populations who are exposed normally to much lower levels. . . . Just because there is no clear evidence to date does not mean that our health is not at risk in subtle ways.”²² The conflation between lowered fertility and harm to women accurately captures many actually existing women’s experiences, but it renders invisible the also existing pleasures of nonreproductive lives.

Along the same lines as Birke, the feminist environmental theorist Giovanna Di Chiro wants to critique the heteronormativity of endocrine disruption discourse while still worrying about the toxins. Writing in the collection *Queer Ecologies*, Di Chiro puts the issue this way: “What are presented by many environmentalists as critical scientific facts (and quite rightly worthy of alarm) can, however, work

to create a 'sex panic' resuscitating familiar heterosexist, queerphobic, and eugenics arguments classifying some bodies as being not normal: mistakes, perversions, or burdens."²³ Di Chiro is among many queer ecological critics who seize on Pope Benedict's egregious claim that gender constructivists are a bigger threat to nature than climate change is. I agree with them that we should question the heteronormativity of this environmental logic, *and at the same time*, I also want to suggest that we abandon this constant caveat "quite rightly worthy of alarm." The heteronormativity, and the alarm at its violation, are inseparable. For Birke and di Chiro both, any impact at all is assumed to be "harm." How do we know that the known unknowns of this intoxication are always and completely harmful? How about insofar as the intoxication also gives the birds a chance to enjoy walks on the beach?

Scientific and journalistic interest in endocrine disruption comes at the same time as increased interest in the sexual diversity of animals broadly, such that biology's purview has expanded beyond "reproductive behavior" to attend to "nonreproductive sexual behavior" that has been there all along.²⁴ Scientists are willing and able to see gayness in animals in a way that earlier models that equated animal sexuality with reproduction never could. Since, as Jennifer Terry points out, "animals provide models for scientists seeking to determine a biological substrate of sexual orientation,"²⁵ this has been seized on by those who want to say that gayness is natural. For my part, I am not interested in what is natural, only what is, and what might be.

The writer who comes closest to my perspective here is Catriona Sandilands, and I quote from her "Eco Homo" at some length:

On the ecological side, I should note that even though some biologists are gradually accepting the liberal idea that other species might have interesting sex lives, the idea of queers as abject-toxins still lurks in environmental discourse. There is an ongoing tension, here, between an increasing naturalization of queers as "just like everyone else" and a continued heterosexist resistance to the uncertain possibilities of queer sex. Most noticeably, the mere presence of homoerotic sexual activity is enough to lead some environmentalists to cry "pollution"; if the assumption is that the health of a species is guaranteed by reproductive ability,

then the presence of homoerotic activity must signal some dysfunction, a response to some toxic exposure or another. Hence, in the case of the lesbian seagulls, a Canadian environmental researcher cried DDT contamination (specifically, he theorized hormonal problems) when he observed homoerotic pairings among female Pacific Coast gulls, even though other researchers had noted no toxins whatsoever in their prolifically “lesbian” gull populations. Even more insidiously, many ecologists assume the absolute naturalness of bodily dimorphism, even in species that harbor a wide range of characteristics within members of the same sex. If male organisms are starting to become “feminized,” it must be a very bad thing for nature (some environmentalists have even been heard arguing that the greater visibility of the human transgender community must be a result of pollution, too).²⁶

Now, in the piece as a whole, Sandilands is on the side of queer theory and the artificial, not on the essentialist liberal side that posits that gayness is OK because (but then somehow only if) it is inborn. I love what she is up to here, but I am troubled that her queer reading seems to rely on ruling out the possibility of queerness being caused by pollution. Why does it matter where their queerness comes from? What if some of the lesbian seagulls *are* intoxicated, can't they still be here, be queer, and it is up to us to get used to it?

We might read these intoxicated birds as *trashed*, in a couple of senses. One of the most prominent aspects of the discourse around *being trashed* in campus culture, for example, is sexual vulnerability. But *to trash* is also to criticize severely, and in that way is to dismiss. There are radical feminist roots to this term, especially Jo Freeman's landmark 1976 essay “Trashing: The Dark Side of Sisterhood.”²⁷ On one level, I am deliberately misreading Freeman's term, because it is context-specific to the social dynamics of the feminist movement in the 1960s and 1970s. However, her analysis provides an interesting refraction here: “This attack is accomplished by making you feel that your very existence is inimical to the Movement and that nothing can change this short of ceasing to exist.” If these trashed birds are merely sentinels of environmental peril, their ceasing to exist would be an environmentalist victory. They become the objects of a more

total version of environmentalist eradication fantasies toward so-called alien species, because the altered birds do not even have an elsewhere in which their presence might be appropriate.²⁸ These birds are stigmatized for being trashed, and they are talked about as if they are the embodiment of trash. In that kind of logic, the queers produced by toxic waste themselves become disposable.

In his critique of queer ecology generally, Greg Garrard quotes from the same section of Sandilands's writing that I have, and disagrees: "Sandilands clearly wants the reader to reject ecologists' stigmatization of intersexed or 'feminized' bodies, even though endocrine disruption actually *is* 'a very bad thing' whomever it happens to."²⁹ Sandilands seems more resistant to the biological research on endocrine disruption than I am, but I share her aversion to seeing queerness as pathology. But what evidence do we have for Garrard's apparently realist claim? If the impact of endocrine disruption is, for example, same-sex pairing, surely that is not "a very bad thing" to whomever it happens to, is it? Sandilands wants to reject the connection between birds' queerness and any pollutants, but I want to ask a question that is prior: there is an inherent conservatism in ecology, insofar as it wants things to stay the same or better yet go back to a previous state. I want to ask: if the birds are affected by endocrine disruption in this way, does that necessarily mean that they are harmed?

I do recognize a profound challenge to the kind of playful and speculative engagement that I have been exploring in this chapter: the embeddedness of these toxins and their reproductive impacts in oppressive systems of capitalism and structural racism. If we take antiracist and anticolonial critique seriously, blurring the boundaries between animal reproductive harm and human reproductive harm can point toward a danger in embracing the queer products of our toxic environment. The reproductive harm to indigenous peoples who live in areas highly affected by chemical industries, and who rely on the water and especially the fish there, has been an important aspect of activism for stronger regulation of these chemicals. The framing of endocrine disruptors as examples of environmental racism is powerful. As the feminist and environmental legal scholar Dayna Nadine Scott points out, "The theory of endocrine disruption in the context of a First Nation encounters a history that has, at various times, refused racialised

groups the capacity for children.”³⁰ To the extent that actually existing indigenous women want to mobilize against endocrine-disrupting chemicals in their water supplies as part of a broader movement for self-determination, that is worthy of respect. It highlights the fundamental role that structural inequality plays in constituting embodied experiences of injustice.³¹ Although the feminist analyst of hormones Celia Roberts does not foreground indigenous people’s concerns, her intervention is relevant here: endocrine-disrupting chemicals “concern financial *and* sexual economies,” and we must not lose track of the question *cui bono?*—or more starkly, “who lives and who dies?”³² Feminist analysis has to do more than just let capitalism off the hook.

Yet even bringing discussion of indigenous peoples together with discussion of wildlife makes me uneasy. The tropes of the purity and vulnerability of close-to-nature indigenous bodies have their own problematic colonial histories, which contribute to, rather than diminish, the political power of the critique on those terms. Arguments for protecting the procreative mother have a complicated relationship with colonialism and postcolonialism. Gayatri Spivak’s conceptualization of reproductive heteronormativity (RHN) can help see how. As Spivak points out: “RHN is the biggest, oldest global institution. Tacit globalization, millennia before the silicon chip. It’s all over the world, whether capitalist or anti-capitalist. It’s before capitalism. It’s before anti-imperialism. The imperialist and anti-imperialist alike are tied in, folded up with RHN.”³³ The imperative to “carry on the race” is also a colonial narrative, with its own set of erasures.

The anxieties about the impact of toxins on pregnant indigenous women is resonant with anxieties about pregnant intoxication. It is of a piece with broader colonialist frames in which settler colonialism’s danger to indigenous communities is conceptualized as residing within indigenous bodies: specious “virgin soil” theories of vulnerability to infectious disease that give genetic notions of causation primacy over displacement in explanations of population collapse;³⁴ and in alcoholism as a catch-all for contemporary native pathology that rests on highly problematic notions of native difference.³⁵ I am troubled by the ways that indigenous women’s concerns are often rather cynically used as a hook for (white) advocacy around endocrine disruption. For example, Nancy Langston’s book *Toxic Bodies* has a cover that features

a pregnant belly against a black background, as if in outer space. It opens with an anecdote from an environmental justice field trip to the Shoalwater nation in Washington State: “losing their tiny reservation to erosion and legal battles, and they were losing their future to a mysterious run of miscarriages.”³⁶ The rest of the book drops any reference to indigenous women. This narratively positions the struggle over land as secondary to the struggle over toxins. Endocrine-disrupting chemicals are more sensational than land treaties, but we should be suspicious of their visceral appeal. Native American women are articulated as vulnerable stewards of the Earth, a pristine people (ideally) outside history. Their environmental struggle is subsumed into an argument for the precautionary principle. Plucking out the impact of endocrine disruptors on indigenous women for concern, while leaving behind broader resistance to settler colonialism, is highly problematic. These toxins are not, in and of themselves, *the* fundamental threat to indigenous communities. As in mainstream “pro-life” discourse, the unborn carry a troubling primacy over the already here. Women appear in these arguments as vessels for the next generation, rather than as people who matter to themselves and their present communities. It is all about the ability to reproduce, not the ability to live.

Queers have long been understood to be symptomatic of liberal capitalism, exemplars of bourgeois and/or Western decadence from diverse quarters—by New Left ideologues and more recently by contemporary leaders of non-Western countries.³⁷ But there is also a tradition in progressive queer theory that wants to locate lesbian and gay existence in history rather than in essentialism. For example, John D’Emilio’s classic essay “Capitalism and Gay Identity” argues that gays and lesbians have *not* always existed, but that the identity categories have emerged in the context of the ascendance of the free labor system over the household labor system, and, as such, the separation of sexuality from reproduction.³⁸ Once individuals did not need to join a normative household in order to have the means to survive, they could explore a wider range of social and economic arrangements, and had more room for putting queer sexuality at the center of identity and day-to-day life. D’Emilio is well aware of the exploitation that underlies the freedom of labor under capitalism, but going back in time to

a preindustrial household model is neither a practicable nor desirable solution. Queers should have the freedom to set up our households as we please not because we have always existed but because we want the space to exist now. If products of capitalism (in the form of industrial pollution) are producing these queer birds, this provides an evocative material analogue for D'Emilio's political economic case.

Endocrine disrupters are an excellent case to illustrate that sex is simultaneously material-semiotic and the product of history.³⁹ These birds may have become cyborg in Haraway's sense: "The cyborg does not dream of community on the model of the organic family."⁴⁰ Of course, their existence is by no means innocent. Like cyborgs generally, "they are the illegitimate offspring of militarism and patriarchal capitalism."⁴¹ But our appreciation of queer animals—including queer humans—should not depend on their being outside industrialization.

Timothy Morton has compellingly argued that we should not put nature on a pedestal and admire it from afar.⁴² The desire for a pristine virgin nature is not the lack-of-desire it claims to be.⁴³ It is deeply ideological and chooses what gets to count as natural. Like Sandilands, Morton convincingly argues that queerness is in biological substance, not just culture. Morton does not mention cases in which animals' queerness might be the result of pollution, but he does suggest that queer theory is a friend to nonessentialist biology, and I agree.⁴⁴ If we take seriously Morton's argument that queer ecology must embrace silicon as well as carbon, then surely these birds are rightly part of a queer ecology, however they came upon their perversions. Insofar as their queerness may have artificial roots, that should not itself be seen as a threat.

These male pairs of ibises are getting on with things in the face of a hostile environment, and I raise my glass to them.

Notes

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1. Joseph Milton, "Mercury Causes Homosexuality in Male Ibises: Environmental Pollutant Radically Changes Birds' Mating Behaviour," *Nature News*, December 2010, doi:10.1038/news.2010.641.

2. Peter Frederick and Nilmini Jayasena, "Altered Pairing Behaviour and Reproductive Success in White Ibises Exposed to Environmentally Relevant Concentrations of Methylmercury," *Proceedings of the Royal Society of London B: Biological Sciences* 278, no. 1713 (2011): 1851–57.

3. Mel Y. Chen, *Animacies: Biopolitics, Racial Mattering, and Queer Affect* (Durham, N.C.: Duke University Press, 2012).

4. Kane Race, *Pleasure Consuming Medicine: The Queer Politics of Drugs* (Durham, N.C.: Duke University Press, 2009), ix.

5. Jonathan M. Metz and Anna Kirkland, eds., *Against Health: How Health Became the New Morality* (New York: New York University Press, 2010). The notion of water as a health beverage is historically specific: Kane Race, "Frequent Sipping': Bottled Water, the Will to Health and the Subject of Hydration," *Body & Society* 18, nos. 3–4 (2012): 72–98.

6. Bert L. Valee, "Alcohol in the Western World," *Scientific American* 278, no. 6 (1998): 80–85.

7. Theo Colburn, Dianne Dumanoski, and John Peterson Myers, *Our Stolen Future: Are We Threatening Fertility, Intelligence, Survival?—a Scientific Detective Story* (New York: Plume, 1996).

8. Lee Edelman, *No Future: Queer Theory and the Death Drive* (Durham, N.C.: Duke University Press, 2004), 3. Edelman is building on an argument by Leo Bersani: in his landmark essay "Is the Rectum a Grave?," Bersani argues that same-sex desire (and the desire to be penetrated broadly) can be "anticommunal, antiegalitarian, antinurturing, antiloving." For Bersani, AIDS is a literalization of the death of the subject that is phantasmically enacted in the passive role in sex ("Is the Rectum a Grave?," *October* 43 [Winter 1987]: 197–222). The pleasures of *being fucked up* are intertwined with the pleasures of *getting fucked*.

9. See discussion in Lynne Huffer, *Are the Lips a Grave? A Queer Feminist on the Ethics of Sex* (New York: Columbia University Press, 2013), 17.

10. Audre Lorde, "Uses of the Erotic: The Erotic as Power," in *Sister Outsider: Essays and Speeches* (Trumansburg, N.Y.: Crossing Press, 1984), 53–59; Angela Willey, "Biopossibility: A Queer Feminist Materialist Science Studies Manifesto, with Special Reference to the Question of Monogamous Behavior," *Signs: Journal of Women in Culture and Society* 41, no. 3 (2016): 553–77.

11. Elizabeth A. Povinelli, "The Part That Has No Part: Enjoyment, Law, and Loss," *GLQ: A Journal of Lesbian and Gay Studies* 17, nos. 2–3 (2011): 289.

12. Antke Engel and Renate Lorenz, "Toxic Assemblages, Queer Soci- alities: A Dialogue of Mutual Poisoning," *e-flux* 44 (April 2013), <http://www.e-flux.com/journal/toxic-assemblages-queer-socialities-a-dialogue-of-mutual-poisoning/>.

13. Michelle Murphy, "Distributed Reproduction, Chemical Violence, and Latency," *The Scholar and the Feminist Online* 11, no. 3 (2013), <http://sfonline.barnard.edu/life-un-ltd-feminism-bioscience-race/distributed-repro-duction-chemical-violence-and-latency/0/>.

14. Judith Halberstam, *The Queer Art of Failure* (Durham, N.C.: Duke University Press, 2011), 71.

15. *Ibid.*, 70.

16. Robert Barbault, "Loss of Biodiversity, An Overview," in *Encyclope- dia of Biodiversity: Volume 3*, edited by Simon A. Levin (San Diego: Aca- demic Press, 2001), 761.

17. See Margaret Lock, "The Eclipse of the Gene and the Return of Divination," *Current Anthropology* 46 (December 2005): S47–S70.

18. Lynda Birke, *Feminism and the Biological Body* (Edinburgh: Edin- burgh University Press, 1999).

19. Lynda Birke, "Sitting on the Fence: Biology, Feminism, and Gender- Bending Environments," *Women's Studies International Forum* 23, no. 5 (2000): 587–99.

20. *Ibid.*, 594.

21. Another reason that access to exogenous hormones is a feminist issue is their capacity to help transgender people and others embody desired gender expression. Challenges that trans folks face in accessing exogenous hormones that are costly controlled substances also helps underscore how problematic it is to frame exogenous hormones as an intervention on an otherwise natural and authentic body: see Julian Gill-Peterson, "The Tech- nical Capacities of the Body: Assembling Race, Technology, and Transgen- der," *TSQ: Transgender Studies Quarterly* 1, no. 3 (2014): 402–18.

22. Birke, "Sitting on the Fence," 596.

23. Giovanna Di Chiro, "Polluted Politics? Confronting Toxic Dis- course, Sex Panic, and Eco-Normativity," in *Queer Ecologies: Sex, Nature, Politics, Desire*, edited by Bruce Erickson and Catriona Mortimer-Sandilands (Bloomington: Indiana University Press, 2010), 202.

24. Jennifer Terry, "'Unnatural Acts' in Nature: The Scientific Fascina- tion with Queer Animals," *GLQ: A Journal of Lesbian and Gay Studies* 6, no. 2 (2000): 154.

25. *Ibid.*, 152.

26. Catriona Sandilands, "Eco Homo: Queering the Ecological Body Politic," *Social Philosophy Today* 19 (2003): 27.

27. Joreen [Jo Freeman], "Trashing: The Dark Side of Sisterhood," *Ms.*, April 1976, 49–51, 92–98, <http://www.jofreeman.com/joreen/trashing.htm>.

28. For a critique of the problematic discourse around "alien species," see Banu Subramaniam, "The Aliens Have Landed! Reflections on the Rhetoric of Biological Invasions," *Meridians* 2, no. 1 (2001): 26–40.

29. Greg Garrard, "How Queer Is Green?," *Configurations* 18, nos. 1–2 (2010): 92.

30. Dayna Nadine Scott, "'Gender-benders': Sex and Law in the Constitution of Polluted Bodies," *Feminist Legal Studies* 17 (2009): 252.

31. Ways in which structural racism becomes embodied is something I have explored a great deal in previous work with regard to black–white health disparities, especially *Medicating Race: Heart Disease and Durable Preoccupations with Difference* (Durham, N.C.: Duke University Press, 2012), and "On the Suspended Sentences of the Scott Sisters: Mass Incarceration, Kidney Donation, and the Biopolitics of Race in the United States," *Science, Technology & Human Values* 40, no. 2 (2015): 250–71.

32. Celia Roberts, "Drowning in a Sea of Estrogens: Sex Hormones, Sexual Reproduction, and Sex," *Sexualities* 6, no. 2 (2003): 207–8.

33. Gayatri Spivak, quoted in *Planetary Loves: Spivak, Postcoloniality, and Theology*, edited by Stephen D. Moore and Mayra Rivera (Bronx, N.Y.: Fordham University Press, 2011), 60.

34. See David S. Jones, "Virgin Soils Revisited," *William and Mary Quarterly* 60, no. 4 (2003): 703–42.

35. See James Waldram, "The Alcoholic Indian," in *Revenge of the Windigo: The Construction of Mind and Mental Health of North American Aboriginal Peoples* (Toronto: University of Toronto Press, 2004), 134–66.

36. Nancy Langston, *Toxic Bodies: Hormone Disruptors and the Legacy of DES* (New Haven, Conn.: Yale University Press, 2011), 1.

37. For a New Left example, see Revolutionary Union, "Position Paper of the Revolutionary Union on Homosexuality and Gay Liberation," reprinted in *Toward a Scientific Analysis of the Gay Question* (Los Angeles: Los Angeles Research Group, 1975), <https://www.marxists.org/history/erol/ncm-3/gay-question/ru.htm>. For a contemporary non-Western example, see Yoweri Kaguta Museveni, "President Museveni's Statement upon Signing the Anti-homosexuality Bill," February 24, 2014, <http://www.statehouse.go.ug/media/presidential-statements/2014/02/24/president-musevenis-statement-upon-signing-anti-homosexuali>.

38. John D'Emilio, "Capitalism and Gay Identity," in *The Lesbian and Gay Studies Reader*, edited by Henry Abelove, Michele Aina Barale, and David M. Halperin (New York: Routledge, 1993), 467–76.

39. In this sense, endocrine disruptors are continuous with hormonal phenomena more broadly: see Celia Roberts, *Messengers of Sex: Hormones, Biomedicine, and Feminism* (Cambridge: Cambridge University Press, 2007).

40. Donna Haraway, "The Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century," in *Simians, Cyborgs, and Women: The Reinvention of Nature* (New York: Routledge, 1991), 151.

41. Ibid.

42. Timothy Morton, "Queer Ecology," *PMLA* 125, no. 2 (2010): 273–82.

43. Ibid., 279.

44. Ibid., 275.