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Ecofeminism and climate change

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SYNOPSIS

Issues that women traditionally organize around—environmental health, habitats, livelihoods—have been marginalized in debates that treat climate change as a scientific problem requiring technological and scientific solutions without substantially transforming ideologies and economies of domination, exploitation and colonialism. Issues that GLBTQ people organize around—bullying in the schools, hate crimes, marriage equality, fair housing and health care—aren't even noted in climate change discussions. Feminist analyses are well positioned to address these and other structural inequalities in climate crises, and to unmask the gendered character of first-world overconsumption; moreover, both feminist animal studies and posthumanism bring awareness of species as an unexamined dimension in climate change. A queer, posthumanist, ecological and feminist approach—brought together through the intersectional lens of ecofeminism—is needed to tackle the antifeminist threads companioning the scientific response to climate change: the linked rhetorics of population control, erotophobia and ecophobia, anti-immigration sentiment, and increased militarism.

Since the times of Ancient Rome, Lady Justice has been depicted wearing a blindfold representing objectivity, holding scales to weigh competing claims in her right hand, and a sword of reason in her left hand. Contemporary feminist justice ethicists have critiqued the masculinist bias of traditional western ethics for the ways it overvalues reason and objectivity, devaluing women's standpoints and women's work and envisions justice-as-distribution of resources among discrete individuals with rights, rather than emerging through relationships which shape participant identities and responsibilities (Jaggar, 1994; Warren, 1990; Young, 1990). Ecological feminist ethics have addressed human relationships with other animals, with environments, and with diverse others locally and globally as relations meriting contextualized ethical concern (Donovan & Adams, 2007). But a feminist ethical approach to climate justice—challenging the distributive model that has ignored relations of gender, sexuality, species, and environments—has yet to be fully developed.

To date, climate change discourse has not accurately presented the gendered character of first-world planetary overconsumption. For example, a prominent symbol from the Copenhagen Climate Conference of the Parties (COP 15) in December 2009 depicts an obese "Justitia, Western Goddess of Justice" riding on the back of an emaciated black man; in other artworks for the conference, a group of starving African male bodies was installed in a wide river (see Fig. 1). The image of Justitia was captioned, "I'm sitting on the back of a man—he is sinking under the burden—I will do everything to help him—except to step down from his back" (Sandberg & Sandberg, 2010, 8). Allegedly an artwork referencing the heavy climate change burden carried by the global South, and the climate debt owed by the overconsuming global North, from a feminist perspective the missing critique is that the genders are reversed: women produce the majority of the world's food, yet the majority of the world's hungry are women and children, not men. And the overconsumption of earth's other inhabitants—plants, animals, ecosystems—is not even visibly depicted.

In this essay, I argue that climate change and first world overconsumption are produced by masculinist ideology, and will not be solved by masculinist techno-science approaches. Instead, I propose, queer feminist posthumanist climate justice

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Fig. 1. Justicia.

perspectives at the local, national, and global levels are needed to intervene and transform both our analyses and our solutions to climate change.

Herstory: women's climate change activism

Although the "first stirrings" of women's environmental defense were introduced at the United Nations 1985 conference in Nairobi, through news of India's Chipko movement involving peasant women's defense of trees (their livelihood), women's role in planetary protection became clearly articulated in November 1991, when the Women's Environment and Development Organization (WEDO) organized the World Women's Congress for a Healthy Planet in Miami, Florida (Resurrección, 2013; WEDO, 2012). Seen as an opportunity to build on the gains of the United Nations Decade for Women and to prepare a Women's Action Agenda for the 1992 UN Conference on Environment and Development (UNCED) in Rio de Janeiro, the World Women's Congress drew more than 1500 women from 83 countries. But while its leaders alleged that the resulting "Women's Agenda 21" had been built through a consensus process, for many of those sitting in attendance, listening to one elite speaker after another, it was not clear how our views shaped or even contributed to this process of agenda-formation. Participatory democracy—long a valued strategy in grassroots ecofeminist tactics—was reduced to two dubious threads: a series of break-out discussion groups held throughout the conference, and a "Report Card" for participants to take home and use to evaluate specific issues within their communities and mobilize a local response (shaping the issues themselves had no place on the report card). Along with other ecofeminists, I felt a mix of energy, dismay, and frustration at this gathering.[1] While the women leaders from many countries were valuable participants and decision-makers in the upcoming conversations at the UN Conference on Environment and Development, that weekend in Miami, too many speakers discussed women's "feminine" gender roles, our "influence" on decision-makers, and the need for "reforms" to the present system—all introduced and capped with the essentializing motto, "It's Time For Women to Mother Earth."

Despite these flaws in rhetoric and democratic participation, WEDO's 1991 World Women's Congress has been hailed as the entry-point for feminism into the UN conferences on the global environment, opening the way for later developments bridging feminist interventions and activisms addressing climate change. The following year, UNCED's Agenda 21 did not in fact include the most transformative recommendations from the Women's Agenda 21—the analysis of environmental degradation as rooted in military/industrial/capitalist economics, for example—or even the more reformist proposals such as implementing gender equity on all UN panels, an issue which has been taken up again at the 2013 Council of the Parties (COP) for the United Nations Framework Convention on Climate Change (UNFCCC) in Warsaw, Poland (See Fig. 2).

Perhaps WEDO's Women's Agenda 21 had already been undermined by the 1987 report from the World Commission on Environment and Development, *Our Common Future*, led by Brundtland, 1987. This report established "sustainable development" as a desirable strategy, defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs"—which sounds reasonable enough, until one reads the document's renewed call for continued economic growth on a finite planet, a fundamentally unsustainable endeavor. The report completely omits discussion of the First World/North's[2] over-development and its high levels of production, consumption, and disregard for the environment (Agostino & Lizarde, 2012). Nonetheless, the Brundtland Report's "sustainable development" concept has shaped climate change discourse for the subsequent decades, producing techno-solutions such as "the green economy" that have perpetuated capitalist and colonialist strategies of privatization, and fail to address root causes of the climate crisis (Pskowski, 2013).

In the two decades since WEDO's Women's Agenda 21, feminist involvement in global environmentalism has developed from a 1980–1990's focus on "women, environment and development" (WED), "women in development" (WID) or "gender, environment and development" (GED) to an emphasis on feminist political ecology in the 1990s–2000s (Goebel, 2004; MacGregor, 2010; Resurrección, 2013). Initially, discussion of women and environment focused on women in the global South, whose real material needs for food security and productive agricultural land, forest resources, clean water and sanitation trumped more structural discussions about gendered environmental discourses (i.e. Leonard, 1989; Sontheimer, 1991), although these structurally transformative elements were equally present in other texts (i.e. Sen & Grown, 1987). The focus on *women* rather than *gender* tended to construct women as *victims* of environmental degradation in need of rescue; their essential closeness to nature, cultivated through family caregiving and through

Issues/Statements	Women's Agenda 21	UNCED Agenda 21
Consumption	• A power that women have to drive industrial development that respects the environment and society • A power that may enable a world alliance to boycott current unsustainable production & consumption models	• Women's role as consumers & impact of their purchasing power affects economies • Implement policies to change unsustainable consumption patterns • New technology can play a role in this process
Technology	• Involves destruction of nature • Has not been within reach of the needs of the poor, nor accessible to women, many of whom have been its victims • Ethical implications of technology & need to democratize it to make it available to & beneficial for women	• Technology is a benefit in carrying out sustainable development • Reinforce research & promote new technology, and involve developing countries in technological development through knowledge transfer
	& marginalized groups	
External debt	• Industrialized countries must admit their exploitation of developing countries' resources • Condems the negative impact of the IMF and World Bank's restructuring policies, especially on women & children • Proposes paying off external debt, and boycotting banks that uphold it	• Developing countries should pay off their external debt • Incentives for international cooperation to reduce debt were identified
Population	• Main causes of environmental degradation are military & industrial pollutants and capitalist economic systems, not women's fertility rates • Consumption-to-waste ratio per person, which is much higher in the industrialized countries than in poor ones, must be corrected	• Population growth is an unsustainable environmental pressure • Family planning policies and educational programs for women are needed • Raise the educational level of women • Promote women's economic independence & participation at decision-making • War on poverty is a key factor in reducing demographic growth

(Data Source: Brú Bistuer & Cabo 2004)

Fig. 2. *Comparing Women's Agenda 21 (1991) and the UNCED Agenda 21 (1992).* (Data source: Brú Bistuer & Cabo, 2004).

subsistence labor, was argued as providing women with special knowledge, and their *agency* as laborers and leaders in environmental sustainability projects was advocated (Mies & Shiva, 1993; Shiva, 1989). Clearly, this rhetoric instrumentalized women and ignored the cultural limitations of the woman-nature linkage (cf. Dodd, 1997; Leach, 2007; Li, 1993); it was also significantly silent on the roles of men, and the ways that gender as a system constructed economic and material resources that produce "victims" (MacGregor, 2010; Resurrección, 2013). The shift to a "feminist political ecology" (Goebel, 2004) involved a macro-level exploration of the problems of globalization and colonization, a micro-level examination of local institutions for their environmental management, a critique of marriage institutions for the ways these affect women's access to natural resources, and an interrogation of the gendered aspects of space in terms of women's mobility, labor, knowledge, and power. The shift from *women as individuals* to *gender as a system structuring power relations* has been an important development in feminist responses to climate change.

Moving forward from this herstory, I bring an ecofeminist perspective to examine the ways that climate change phenomena have been analyzed primarily from the standpoint of the environmental sciences and technologies, and how this standpoint forecloses the kinds of solutions envisioned.[3] I examine both liberal and cultural ecofeminist perspectives highlighting the ways women have been both excluded from climate change policy discussions and disproportionately affected by climate change phenomena, and summarize

proposals drawing on women's "special knowledge" and agency as decision-makers and leaders in solving the problems of climate change. Noting the popular utility as well as the limitations of these perspectives, I examine both climate change phenomena and climate justice analyses. In organizing this inquiry, I am inspired by feminist activist and scholar Charlotte Bunch, founder of Rutgers University's Center for Women's Global Leadership, whose landmark essay, "Not by degrees: Feminist theory and education" (1979) proposes four tactical steps for using feminist theory to understand situations, place them in a broader context, and evaluate possible courses of action. Simply stated, Bunch's theory suggests we ask, what is the problem?, how did it originate?, what do we want?, and, how do we get there? (Bunch, 1987).

What's the problem? Climate change, environmental science, and reformist feminisms

The scientific evidence of climate change should be alarming: since the Industrial Revolution (variously dated as beginning between 1760 and 1840), when the density of carbon dioxide in the atmosphere was just 280 parts per million (ppm), humans began burning coal, gas, and oil to produce energy, provide transportation, and fuel machineries. Carbon dioxide increased gradually until 1900, when greenhouse gases and global temperatures began to skyrocket, as shown in Michael Mann's "hockey stick" graph included with the 2001 Intergovernmental Panel on Climate Change (IPCC) summary for policymakers (Appell, 2005). Fast forward to the summer of 2012, by which time half of the Arctic sea ice had vanished. In May 2013, Hawaii's Mauna Loa Observatory recorded carbon dioxide levels at 400 ppm, exceeding all historical records, and continuing to increase at a pace exceeding 2 ppm per year. The ecological consequences of climate change—rising sea levels, melting ice sheets and receding glaciers, vanishing coral reefs, extreme weather events (i.e., hurricanes, floods, droughts, wildfires, heat waves), accelerated species migrations or extinctions, the spread of insect-borne diseases—are already evident. Produced by the planet's most developed countries—with China, the U.S., Russia and India leading the way in the highest emissions, and the U.S., Australia, Canada, and Saudi Arabia leading with the highest per capita emissions—75–80% of the effects of climate change will be felt by the global South/Two-Thirds world, and those effects are most harsh because material poverty means weaker infrastructures of support for housing, clean water, food security, health care, and disaster preparedness/response.

Make no mistake: women are indeed the ones most severely affected by climate change and natural disasters, but their vulnerability is not innate; rather it is a result of inequities produced through gendered social roles, discrimination, and poverty. According to CARE, an international NGO, women work 2/3 of the world's working hours, produce half the world's food, and earn 10% of the world's income; of the world's one billion poorest people, women and girls make up 70%.[4] If there were an unimpeded correlation between hard work and earnings, women would be the world's highest earners. Instead, structural barriers of gender put women—and children—among the world's poorest people, situated on the front lines of climate change. Around the world, gender roles restrict women's mobility, impose tasks associated with food production and caregiving, and simultaneously obstruct women from participating in decision-making about climate change, greenhouse gas emissions, and decisions about adaptation and mitigation. In developing countries, women living in poverty bear the burden of climate change consequences, as these create more work to fetch water, or to collect fuel and fodder—duties traditionally assigned to women. When households experience food shortages, which occur regularly and may become more frequent due to climate change, women are the first to go without food so that children and men may eat. As rural areas experience desertification, decreased food production, and other economic and ecological hardships, these factors prompt increased male out-migration to urban centers with the promise of economic gain and wages returned to the family; these promises are not always fulfilled. In the short-term, and possibly long-term as well, male out-migration means more women are left behind with additional agricultural and household duties, such as caregiving. These women have even fewer resources to cope with seasonal and episodic weather and natural disasters.[5]

Gender inequalities mean that women and children are 14 times more likely to die in ecological disasters than men (Aguilar, 2007; Aguilar, Araujo, & Quesada-Aguilar, 2007). For example, in the 1991 cyclone and flood in Bangladesh, 90% of the victims were women. The causes are multiple: warning information was not sent to women, who were largely confined in their homes; women are not trained swimmers; women's caregiving responsibilities meant that women trying to escape the floods were often holding infants and towing elder family members, while husbands escaped alone; moreover, the increased risk of sexual assaults outside the home made women wait longer to leave, hoping that male relatives would return for them. Similarly in the 2004 Tsunami in Aceh, Sumatra, more than 75% of those who died were women. In May 2008, after Cyclone Nargis came ashore in the Ayeyarwady Division of Myanmar, women and girls were 61% of the 130,000 people dead or missing in the aftermath (CARE Canada, 2010).

The deaths of so many mothers lead to increased infant mortality, early marriage of girls, increased neglect of girls' education, sexual assaults, trafficking in women and child prostitution. Even in industrialized countries, more women than men died during the 2003 European heat wave, and during Hurricane Katrina in the U.S., African–American women—the poorest population in that part of the country—faced the greatest obstacles to survival (Aguilar et al., 2007). Women who survive climate change disasters are then faced with the likelihood of sexual assault: for example, after Hurricane Katrina, rapes were "reported by dozens of survivors" and mentioned in news stories, but there was no discussion of rape support teams being included with the rescue teams, and no mention of reproductive health services that should have been made available to women who had been raped (Seager, 2006). Moreover, the likely assaults on gay, lesbian, bisexual, transgendered queer (GLBTQ) persons went unreported.

Climate change homophobia is evident in the media blackout of GLBTQ people in the wake of Hurricane Katrina, an unprecedented storm and infrastructure collapse which occurred just days before the annual queer festival in New Orleans, "Southern Decadence," a celebration that drew

125,000 revelers in 2003 (ecesis.factor). The religious right quickly declared Hurricane Katrina an example of God's wrath against homosexuals, waving signs with "Thank God for Katrina" and publishing detailed connections between the sin of homosexuality and the destruction of New Orleans. It is hard to imagine GLBTQ people not facing harassment, discrimination, and violence during and after the events of Katrina, given the fact that Louisiana, Alabama, and Mississippi lack any legal protections for GLBTQ persons and would have been unsympathetic to such reports.

Queer and transgendered persons already live on the margins of most societies, often denied rights of marriage and family life, denied health care coverage for partners and their children, denied fair housing and employment rights, immigration rights and more. Climate change exacerbates pressures on marginalized people first, with economic and cultural elites best able to mitigate and postpone impacts; as a global phenomenon, homophobia infiltrates climate change discourse, distorting our analysis of climate change causes and climate justice solutions, and placing a wedge between international activists. For example, at the First Worldwide Peoples' Conference on Climate Change and Mother Earth held in Cochabamba, April 19–22, 2010, Bolivian President Evo Morales claimed that the presence of homosexual men around the world was a consequence of eating genetically-modified chicken: "The chicken that we eat is chock-full of feminine hormones. So, when men eat these chickens, they deviate from themselves as men" (ILGA, 2010). This statement exemplifies a dangerous nexus of ignorance, speciesism, and homophobia that conceals the workings of industrial agribusiness, and simultaneously vilifies gay and transgendered persons as "genetic deviants." Yet in statements of climate justice to date, there is no mention of the integral need for queer climate justice—although all our climates are both gendered and sexualized, simultaneously material, cultural, and ecological.

Described largely from the perspective of the environmental (climate) sciences (i.e., astrophysics, atmospheric chemistry, geography, meteorology, oceanography, paleoclimatology), climate change has been most widely discussed as a scientific problem requiring technological and scientific solutions without substantially transforming ideologies and economies of domination, exploitation and colonialism: this misrepresentation of climate change root causes is one part of the problem, misdirecting those who ground climate change solutions on incomplete analyses (cf. Klein, 2014). On an international level, solutions mitigating climate change include Reducing Emissions from Deforestation and Forest Degradation (REDD+ Initiative), the Kyoto Protocol's Clean Development Mechanism (CDM) that encourages emission trading, sustainable development funding for Two-Thirds countries, genetically modified crops, renewable energy technologies, and the more recent strategy, geo-engineering (Klein, 2012). On an individual level, citizen-consumers of the North/One-Thirds world are urged toward green consumerism and carbon-footprint reduction. Certainly renewable energy is a necessary and wholly possible shift; moreover, it carries within its practice the ideological shift needed to make a wider transformation in the North/One-Thirds consumers' relationship with environments and ecosystems. From a feminist perspective, however, the problem remains that at the highest levels of international discussion, "climate change is cast as a human crisis in which gender has no relevance" (MacGregor, 2010) and "man" is supposed to mean "everyone." Such gender-blind analysis leads to excluding data and perspectives that are crucial in solving climate change problems, while the issues that women traditionally organize around—environmental health, habitats, livelihoods—are marginalized by techno-science solutions which take center stage in climate change discussions and funding. GLBTQ issues such as bullying in the schools, hate crimes legislation, equity in housing and the workplace, same-sex marriage (not to mention polyamorous marriage) don't appear in climate discussions either. Given the gender-blind techno-science perspective dominating climate change discussions, queer feminist entry to these discussions has been stalled, trapped between Scylla and Charybdis: over the past two decades, discussions have alternated between the liberal strategy of mainstreaming women into discussions of risk, vulnerability, and adaptation, as WEDO has done; or, adopting the cultural feminist strategy of calling on women's "unique" capacities of caring for family and for environment, women's "special knowledge" and agency based on their location within gender-role restricted occupations, and lauding women's grassroots leadership. In either strategy, "gender" is restricted to the study of women, and feminist analyses of structural gender inequalities that compare the status of men, women, and GLBTQ others are completely omitted.

To date, the United Nations Framework Convention on Climate Change (UNFCCC) "Gender and Climate Change" website addresses these problems by drawing on both reformist liberal ecofeminisms and cultural (essentialist) ecofeminisms. In its statement on women's vulnerability, inclusion, and agency, the UNFCCC website asserts: "*It is increasingly evident that women are at the centre of the climate change challenge. Women are disproportionately affected by climate change impacts, such as droughts, floods and other extreme weather events, but they also have a critical role in combatting climate change.*" In order to perform that "critical role," however, gender parity in climate change discussions is a minimum requirement: women need to be equal members in policy-setting and decision-making on climate change. And to have authentic, inclusive feminism, gender justice and sexual justice must be partnered with climate justice, for women of all genders and sexualities form the grassroots force within these three movements (cf. Olson, 2002).

How did the problem arise? Blaming overpopulation and backgrounding gender across species

Misdirecting analyses of root causes, and thus protecting the status quo, three more prominent antifeminist threads companion and vie for prominence alongside the mainstream scientific response to climate change: the linked rhetorics advocating population control, anti-immigration sentiment, and increased militarism. Ever since Paul Ehrlich's *The Population Bomb* (Ehrlich, 1968), one thread of First World environmentalism has placed overpopulation (primarily in the Third World) at the root of environmental degradation, though some manifestations of this discourse link population with First World overconsumption, arguing for twin reductions of both. In practice, this rhetoric has implicitly targeted third world women with "family planning" packages of contraception, abortion, and sterilization, though more recent manifestations

of "population science" have been influenced by feminist arguments for reproductive and sexual health/rights as evinced by discussions at United Nations conferences on population in 1974 (Rumania), 1984 (Mexico), and 1994 (Cairo). Arguing that "women and children in poverty are among the most vulnerable to the impacts of climate change, despite their disproportionately low contribution to the problem" (Engelman, 2010), the WorldWatch Institute advocates a population reduction approach to the impacts of climate change on the world's most vulnerable communities, implemented through a three-pronged strategy:

- Eliminating institutional, social, and cultural barriers to women's full legal, civic, and political equality with men;
- Improving schooling for all children and youth, and especially increasing educational attainment among girls and women; and
- Assuring that all women and their partners have access to, and full freedom to use, reproductive health and family planning services so that the highest proportion possible of birth results from parents' intentions to raise a child to adulthood (Engelman, 2010).

While these three strategies may seem globally relevant, they also seem to target populations in developing countries, as evidenced by the WorldWatch Report's cover photo of two women and three children, captioned "A family on their parched land in Niger." The report offers no interviews with the women targeted for family planning to discover whether this strategy is one they desire or would be able to implement, showing a "Father Knows Best" approach to population and climate science.

Approximately 80% of the world's population (the global South) has generated a mere 20% of global greenhouse gas (GHG) emissions: in other words, the other 20% (the global North) is responsible for 80% of the accumulated GHG emissions in our atmosphere (Egeró, 2013; Hartmann, 2009). Despite the clarity of this logic, population reappeared in publications leading up to the 2009 UN Climate Change COP in Copenhagen, with proponents arguing for family planning among poor communities as a cost-effective method of reducing carbon emissions (Egeró, 2013). Not to be outdone, the UK Population Matters has launched a "population offset" system similar to carbon offsets purchasable by jet-setting first-world consumers (MacGregor, 2010). On their website, the organization claims that "Pop*Offsets* is the world's first project that offers to offset carbon dioxide emissions through the most cost-effective and environmentally beneficial means — family planning" (see http://www.popoffsets.com/). None of these strategies suggests reducing the North/First World's alarming overconsumption of the planet's resources, or seriously restricting its 80% contribution of greenhouse gases.

Reducing third world population becomes increasingly important when first-world overconsumers realize that the severe climate change outcomes already heading for the world's most marginalized communities will create a refugee crisis and urgent migrations of poor people. Since the growing populations of the Two-Thirds World will be hardest hit by climate change effects and will seek asylum in One-Thirds nations—a migration perceived as a threat to the disproportionate wealth (i.e. "security") of the North—the specter of climate refugees has inspired arguments for increased militarization as a protection against migration (Egeró, 2013; MacGregor, 2010). Noting the ways that women are blamed for climate crises which in fact impact women the hardest, both during climate disasters and in the frequency of gender-based violence and material hardships following these disasters, Rojas-Cheatham et al. (2009) have urged "looking both ways" to recognize the intersections between climate justice and reproductive justice. For all these reasons, feminists have strongly resisted arguments for population as the root cause of environmental degradations, including climate change (Gaard, 2010; Hartmann, 1987; Silliman, Fried, Ross & Guttierez, 2004).

Claims about overpopulation in climate change analyses function as an elitist rhetorical distraction from the more fundamental and intersecting problems of gender, sexuality, and interspecies justice. To date, even feminist discussions about these issues have remained limited by the perspective of humanism. As feminist science studies scholars affirm, the best analysis of the problem of oppression will be the most inclusive —excluding data is not conducive to good research, good argumentation, or good feminism. On this foundation, it is imperative that feminist approaches to climate justice take a material and posthumanist approach by considering the larger environments in which these ethico-political problems of climate change are embedded: our interspecies and ecological transcorporeality, manifested in our practices of global food production and consumption.

Two branches of feminist inquiry support recuperating these "backgrounded" (in Val Plumwood's terms, an operation of the Master Model that supports domination) elements of climate change. Material feminism (Alaimo & Hekman, 2008) advances the concept of *transcorporeality*, the physical fact of our co-constituted embodiment with other flows of life, matter, and energy. This recent articulation of feminist theory rests on four decades of feminist science studies and ecofeminist perspectives on the human-environment connection, developing knowledge in the study of gender, race, class, age, and public health. In the 1970s, feminist health advocates began challenging dominant perspectives in science by noting the research focused on male-only samples, and then generalized the results to women and children. These feminists raised questions about women's and children's health by exploring the influence of environment on human health, and exposing environmental links to breast cancer, asthma, lead poisoning, reproductive disorders, and other types of cancers. National women's groups such as Silent Spring Institute and Breast Cancer Action have worked to bring a feminist environmental perspective to all aspects of breast cancer research and prevention, from corporate profits to environmental contaminants, pharmaceuticals, "pink"-washing,[6] and individual breast cancer sufferers and survivors. Building on Carson (1962) uncovering the links between environmental chemicals and their impact on birds, other animal species, and ecosystems, feminist environmentalists exposed the links between synthetic chemicals and the endocrine systems of human and nonhuman animals. From pesticides and plastics to paint and pajamas, synthetic chemicals are linked to the feminization of male reproductive systems in frogs and other wildlife (Aviv, 2014) and associated with breast cancer in women. Lois Gibbs' work on dioxin (Gibbs, 1995), Liane Clorfene-Casten's work on breast cancer (Clorfene-Casten, 2002; 1996), Theo Colborn's

exposé of synthetic chemicals (Colborn's, 1996), and Steingraber's (1997, 2001) eloquent studies of agricultural chemicals, environmental health, children's health, and human cancers are all landmark contributions to our understanding of the interconnections among environmental health, public health, and social justice. This feminist health and environmental science research has contributed to the scientific and epidemiological foundations of the environmental justice movement, and provides longstanding environmental feminist foundations for material feminist theorizing.

A second branch of feminist theory, feminist animal studies has explored the links between the production, transport, consumption and waste of animals used in industrial food systems, and that industry's many assaults on human and environmental health. Today's industrialized production of animal bodies for human consumption emerges from a constellation of oppressive practices. Building on earlier feminist research into the exploitation of female reproduction (Corea, 1985), and the development of reproductive technologies via experimentation on non-human females first, feminist animal studies scholars have emphasized how western systems of industrial animal production ("factory farming") rely specifically on the exploitation of the female (Adams & Donovan, 1995; Donovan & Adams, 2007), harming the health of both nonhuman females and the human females who consume their bodies and their reproductive "products." As Carol Adams (2003) points out, "to control fertility one must have absolute access to the female of the species" (147). The control of female fertility for food production and human reproduction alike uses invasive technologies to manipulate female bodies across the species (Adams, 2003; Corea, 1985; Diamond, 2004):

- Battery chickens are crowded into tiny cages, de-beaked, and inoculated with numerous antibiotics to maximize control of their reproductive output, eggs (Davis, 1995). Male chicks are routinely discarded because they are of no use to the battery hen industry, while female chicks are bred to deformity with excessively large breasts and tiny feet, growing up to live a radically shortened lifetime of captivity, unable to perform any of their natural functions (i.e., dustbathing, nesting, flying).
- Pregnant sows are confined to gestation crates and after they give birth they are allowed to suckle their offspring only through metal bars.
- Dairy cows are forcibly inseminated, and their male calves are taken from them 24–48 h after birth and confined in crates, where they will be fed an iron-deprived diet until they are slaughtered for veal.[7]

Cows separated from their calves bellow and appear to grieve for days afterwards, sometimes ramming themselves against their stalls in an attempt to reunite with their calves. News articles report the "amazing" feats of cows returning across miles of countryside in order to nurse calves from whom they were forcibly separated. We understand the frenzy of a human mother separated from her new infant, yet our understanding and empathy seems to halt at the species boundary, since this involuntary weaning and the attendant suffering for cow and calf continues to be the norm for dairy production: the milk that would have fed the cows' offspring is taken for human consumption, and manipulated into overproduction through the use of growth hormones.[8] Bridging affect theory and feminist animal studies, Lori Gruen (2012) proposes the concept of "entangled empathy" as a strategy for reminding humans of our intra-actions across species and food production systems. Entangled empathy is an affect co-arising with our recognition of the affective states of other beings; its energetic and embodied awareness motivates action to eliminate suffering.

Describing animals used in these industrial food systems as "workers" (Haraway, 2003) is reprehensible for the ways that it obscures the institutionalized oppression of reproductive labor and human responsibility, as Weisberg (2009) explains, for who would choose a "job" requiring a lifetime of imprisonment, separation from one's family, the murder of one's offspring, along with crowding, biological manipulation to the point of crippling, all culminating in execution? In her work "bringing together environmental, climate and reproductive justice," DiChiro (2009) defines reproductive justice as involving not just "bodily self-determination and the right to safe contraception" but also "the right to have children and to be able to raise them in nurturing, healthy, and safe environments" that requires an availability of "good jobs and economic security, freedom from domestic violence and forced sterilization, affordable healthcare, educational opportunities, decent housing, and access to clean and healthy neighborhoods" (2). Linking the exploitation of sexuality and reproduction across species as a feature of the colonialist and techno-science worldview, feminist animal studies scholars have described industrial animal food production as a failure of *reproductive and environmental justice*.

It's also a matter of climate justice, as the UN Food and Agricultural Organization Report "Livestock's Long Shadow" (2006) confirms. The report defines "livestock" as all animal foods, including cattle, buffalo, small ruminants, camels, horses, pigs, and poultry; livestock products include meats, eggs, milk and dairy. The "factory farming" first introduced in the U.S. has been exported globally, to the detriment of the planet. Increasing areas of cropland are being used to feed cattle and other food animals; forests are being replaced with rangeland; vast quantities of water are used to irrigate crops for food animals and given to food animals for drinking. The wastes of industrial animal food production—which include pesticides, herbicides, fertilizers, hormones and antibiotics, manure, and the wastes from slaughterhouses—contaminate wetlands and wildlands, and have produced the hypoxic ("dead zone") area at the Mississippi River's outflow in the Gulf of Mexico. Methane produced by flatulence, carbon dioxide produced through respiration and transport, nitrous oxide and ammonia are all greenhouse gases multiplied through industrial animal agriculture. Livestock production not only exponentially increases our planet's greenhouse gas emissions, it also reduces the greenhouse gas-absorbing areas of forests, the "carbon sinks" whereby the planet might restore a balance.

Human health is also variously affected. Meat production is associated with prosperity, good health, social status, and the affluent lifestyle of the western industrialized countries. As more and more nations seek to emulate the meat consumption levels of the industrialized world, their rates of cancer, heart disease, obesity, and other animal food-related illnesses increase (Campbell & Campbell, 2006). Statistics comparing the growing obesity of first world overconsumers and two-thirds

world persons suffering from hunger and malnourishment can be correlated with the rates of animal food consumption, and with the gendered character of hunger. In developing countries, women account for 43% of the agricultural labor force, although their yields are 20–30% lower than men's because women are barred from farming the best soils, and denied access to seeds, fertilizers, and equipment (WFP, 2013). Around the world, it is women who are responsible for cooking and serving food, and it is men who eat the first and most nutritious foods, leaving children to eat afterwards, and women to eat last. When there is insufficient food, women deny themselves food so that children can eat: while an estimated 146 million children in developing countries are underweight due to acute or chronic malnutrition, 60% of the world's hungriest are women (WFP, 2013). According to the World Food Program, if women farmers had the same access to resources as the men do, the number of hungry people in the world could be reduced by up to 150 million (WFP, 2013).

Industrial animal food production has been described as "a protein factory in reverse" (Robbins, 1987), largely because eating high on the food chain requires more "inputs" of grain, water, and grazing land. The ecological and human toll of industrialized animal agriculture is no longer debated, for the facts are well known:

- It takes 13 lb of grain and 2400 gal of water to produce one pound of meat, and eleven times as many fossil fuels to produce one calorie of animal protein vs. plant protein.
- Raising animals for food requires 30% of the earth's surface.
- There is currently enough food in the world to feed approximately 12 billion people, yet over 900 million are hungry (UNFAO, 2006; WFP, 2013).

As food and development scholars have argued for decades, hunger is not a problem of overpopulation but rather one of distribution, and elite control of the world's food supply (George, 1976, 1984; Hartmann & Boyce, 1979; Lappé & Collins, 1998). Moreover, debt repayment programs (called "structural adjustment") require developing countries to produce cash crops for export rather than food crops for subsistence as a way to pay off debt; biotechnology corporations promote high-yield seeds which require expensive inputs of fertilizer and monocropping techniques that displace subsistence foods, destroy biodiversity, and lower water quality, producing both debt and hunger. These facts notwithstanding, the worldwide production of meat and dairy is projected to more than double by 2050 (UNFAO, 2006). Industrialized animal food production is simultaneously a problem of species justice, environmental justice, reproductive justice and food justice. For too long, "food justice" has been defined solely in terms of justice across human diversities, but *authentic food justice cannot be practiced while simultaneously excluding those who count as "food."* Food justice requires interspecies justice, which intersects with reproductive justice and queer justice alike.

Queer food justice grows out of today's budding eco-queer movement, which Sbicca (2012) defines as a "loose-knit, often decentralized set of political and social activists" who challenge the dominant discourses of sexuality, gender, and nature as a means for deconstructing hegemonic knowledge systems (33–34). Reviewing the herstory of queer eco-activism in building lesbian eco-communities and music festivals, and in challenging the heteronormativity of urban parks through gay cruising and public sex (Mortimer-Sandilands & Erickson, 2010), Sbicca focuses particularly on the queer food justice movement being shaped by queer farmers and gardeners who may not feel comfortable in the alternative food movement, whose most visible U.S. representatives—Michael Pollan, Eric Schlosser, Joel Salatin, Barbara Kingsolver—are largely white, heteromale, and middle class. The grassroots food justice movement is far from this stereotype, and reaches back to European women's gardens of the eighteenth century (Norwood, 1993), Black women rural gardeners in the post-Reconstruction South (Walker, 1983), and women rooftop gardeners in Harlem. Formed in 2007, San Francisco's Queer Food For Love (QFFL) seems like a queer update of Food Not Bombs with their desire to provide food, community, and a safe space against prejudice. Similarly, San Francisco's Rainbow Chard Alliance, formed in 2008, bridges the organic farming movement and the queer movement, creating community for like-minded "eco-homos" in the Bay Area and California (Sbicca, 2012). Not confined to California, the queer food justice movement is articulated through groups ranging from Vermont, Massachusetts and Connecticut to Tennessee, Alabama, Arkansas, Kansas, and Washington. Concerned about the intersections between environment, sexuality, and gender, these queer groups use food to build community, fight oppression, and take care of planetary and human bodies, though it's not clear whether these groups make connections between sexuality and species oppressions, and thus enact vegan food justice as well.

With these facts of world hunger, food production, gender, sexuality and species restored to an analysis of climate change, charging human overpopulation as a root cause of climate change seems misguided at best: instead, climate change may be described as *white industrial-capitalist heteromale supremacy on steroids*, boosted by widespread injustices of gender and race, sexuality and species. Eating high on the food chain must be seen as tilting the planet's plate of food into the mouths of the world's most affluent, at a cost of between 870 million people—almost half of them children under the age of five—who suffer from chronic undernourishment (FAO, 2013). Population control and industrialized animal food production are no substitute for reproductive justice, interspecies justice, gender justice and climate justice.

What do we want? A more inclusive climate justice

The 27 Bali Principles of Climate Justice (2002) redefine climate change from an environmental justice standpoint, using as a template the original 17 Principles of Environmental Justice (1991) created at the First National People of Color Environmental Summit. The Bali Principles address the categories of gender, indigeneity, age, ability, wealth and health; they provide mandates for sustainability in energy and food production, democratic decision-making, ecological economics, gender justice, and economic reparations to include support for adaptation and mitigation of climate change impacts on the world's most vulnerable populations. These principles restore many of the missing components of climate science's "truncated narrative" (Kheel, 1993), connecting the unsustainable consumption and production practices of the industrialized North/First World (and the elites of the South/Two-Thirds

world) with the environmental impacts felt most harshly by those in the South and the impoverished areas of the North. Yet, despite their introductory Principle 1 "affirming the sacredness of Mother Earth, ecological unity and the interdependence of all species," the Bali Principles are not informed by a posthumanist perspective. Just as "Climate Justice affirms the need for solutions that address women's rights" (Principle 22), climate justice also needs to affirm solutions that address queer rights; just as "Climate Justice … is opposed to the commodification of nature and its resources" (Principle 18), climate justice also needs to oppose the commodification of animal bodies and female bodies across species. To be inclusive, the Bali Principles need to be augmented with a queer, feminist, and posthumanist justice perspective.

On November 12, 2013, an unprecedented workshop on gender balance and gender equality was held at the UNFCCC's 19th Council of the Parties (COP19) in Warsaw, Poland, where for three hours, speaker after speaker disclosed facts confirming women's marginalization from climate change decision-making: "the number of all women participating as delegates in UNFCCC processes, or as members of constituted bodies still falls below 35%, and as low as 11–13% in the case of some constituted bodies" (GGCA, 2013). A list of eight solutions proposed by the panelists included basic affirmative action strategies complete with quotas, sanctions, and a monitoring body to keep track of gender balance; funding for participation and training; and tools and methodology to guide research and practices promoting "systematic inclusion of women and gender-sensitive climate policy" (GGCA, 2013). These changes enacting gender equity provide a necessary first step toward a more transformative feminist analysis and response to climate change. That it has taken more than two decades since WEDO's "Agenda 21" for this workshop to occur offers visible confirmation of the masculinist character of climate change analyses —and the dedicated persistence of women drawing on liberal and cultural feminist strategies.

But, does bringing women more fully into the United Nations' discussions on climate change promise to bring forward a feminist perspective? Scholars have investigated whether women's representation in decision-making bodies affects environmental outcomes (Ergas & York, 2012), whether a higher participation of women leads to better climate policy (Alber & Roehr, 2006), and whether there is any verifiable gender difference in climate change knowledge and concern (Alaimo, 2009; McCright, 2010).[9] Summarized in Fig. 3, the data suggest that women would act differently than men in decision-making positions about climate change problems and solutions.

Yet at least one source (Rohr, 2012) cites an exception in the Commissioner on Climate Action, Connie Hedegaard, who was "not in favour of addressing gender in European climate policy, because she deemed it relevant only for developing countries" and didn't want to be "overloaded" by integrating gender aspects (2). Thus, while gender balance at all levels of climate change decision-making is necessary, it "does not automatically guarantee gender responsive climate policy" (Rohr, 2012, 2). A wider transformation is needed, involving "progressive men [and genderqueer others] who are prepared to question their masculinity and gender roles," and work together to uncover "the embedded gender [sexuality] and power relations in climate change policy and mitigation strategies" (Rohr, 2012, 2). From these studies, it appears that structural gender inequality, and more specifically the underrepresentation of women in decision-making bodies on climate change, is actually inhibiting national and global action in addressing climate change.

Given the correlation and mutual reinforcement of sexism and homophobia (Pharr, 1988), it should be no surprise that the standpoints on climate change for women and LGBTQ populations are comparable. Yet in United Nations discourse to date, when LGBTQ people seek an entry point into the ongoing climate change conversations, the primary entry point is one of illness, addressing only HIV and AIDS (McMichael, Butler & Weaver, 2008). Very few studies have recognized a *queer ecological perspective* (Gaard, 2004 (1997); Mortimer-Sandilands & Erickson, 2010), much less brought that perspective to climate change research and data collection. Nonetheless, these few studies confirm that the link between climate change and various LGBT individuals and communities stems from "the fundamentalist desires to dominate and control

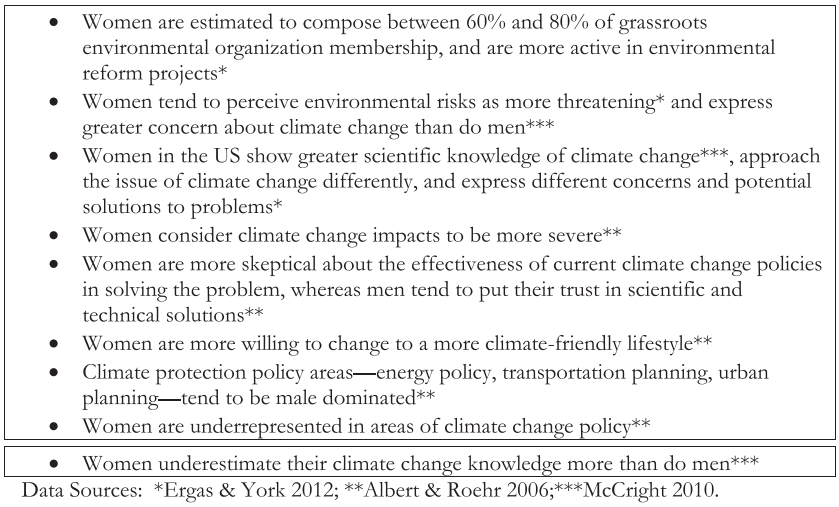

Fig. 3. Gender differences in climate change knowledge, attitudes, and actions. Data sources: *Ergas & York, 2012; **Alber & Roehr, 2006;***McCright, 2010.

other people's environment, resources, contexts and desires" (Somera, 2009). According to a U.S. poll conducted by Harris Interactive, "LGBT Americans Think, Act, Vote More Green than Others" (2009), a conclusion based on answers to several key questions about whether it is important to support environmental causes, whether climate change is actually happening right now, whether the respondent would self-identify as an environmentalist, and whether it is important to consider environmental issues when voting for a candidate, buying goods and services, or choosing a job (see Fig. 4).[10] Most significant in the Harris Poll—given that heterosexuals are more likely to have children—was the LGBT response expressed for what kind of planet we are leaving for future generations, a question which concerned LGBT respondents at 51% as compared with 42% of heterosexual respondents. Exploring the ways that "non-white reproduction and same-sex eroticism" are constructed as "queer acts against nature" in both environmentalist and homophobic discourses, Gosine (2010) sees both as "threatening to the white nation-building projects engendered through the process of colonization" (150). Discourses on the ecological dangers of overpopulation and queer sexualities are alike, Gosine argues, in that both deny the erotic (cf. Lorde, 1984). The toxic environments of climate change and homophobia are linked in the reason/erotic dualism of the Master Model (Plumwood, 1993), and cohere with other linked dualisms of white/non-white, wealthy/poor, intellectual/reproductive, a linkage that has been called erotophobia (Gaard, 2004 (1997)) and ecophobia (Estok, 2009).

The culturally-constructed fear, denial, and devaluation of our embodied erotic are not lost on eco-activist youth, who are among the first to mention sexual well-being in climate change discussions. At COP 18 in Doha, Qatar, Nov. 26–Dec. 8, 2012, a passionate youth movement emerged, according to WEDO: "The Youth Gender Working Group emphasized issues like the right to financing and technology, how disasters impact women, LGBT communities, sexual health and reproductive rights" (De Cicco, 2013). These explorations of queer feminist ecology can augment the slogan of the Gender & Climate Change Network (Gender; Terry, 2009): "There will be no climate justice without [queer] gender justice."

How do we get there? Goals and outcomes

Implementing the Bali Principles with their queer feminist posthumanist augmentations requires transformative strategies that are both top-down and bottom-up; the responsibilities are both systemic, requiring changes in national and corporate policies, and personal, requiring changes on the part of citizens and consumers (Cuomo, 2011). Some techno-science solutions to climate change can help to mitigate the outcomes of First-World nations' and corporations' unjust and anti-ecological practices, and transform our energy reliance to more sustainable sources, but a queer feminist climate justice approach goes to the roots and calls for equity and sustainability at every level, from citizen to corporation, and it begins with economics.

As feminist economist Marilyn Waring observed in her classic work, *If Women Counted: A New Feminist Economics* (Waring, 1988), the United Nations System of National Accounts (UNSNA) has no method of accounting for nature's own production or destruction until the products of nature enter the cash economy, nor does this system account for the majority of work done by women. A clean lake that offers women fresh water supplies for cooking and crops has no economic value until it is polluted; then companies must pay to clean it up, and the clean-up activity is performed by men and recorded as generating income. Similarly, living forests which supply women with food, fuel, and fodder have no recorded value in the UNSNA until they are logged and their products can be manufactured into commodities for sale—then all related industry and manufacture, usually seen as men's work, is recorded as income generating. In *The Price of Motherhood*, Ann Crittendon (2001) addresses the shadow economy of women's unpaid labor in reproduction and caregiving, linking the gendered economy with ecological economics. As she explains,

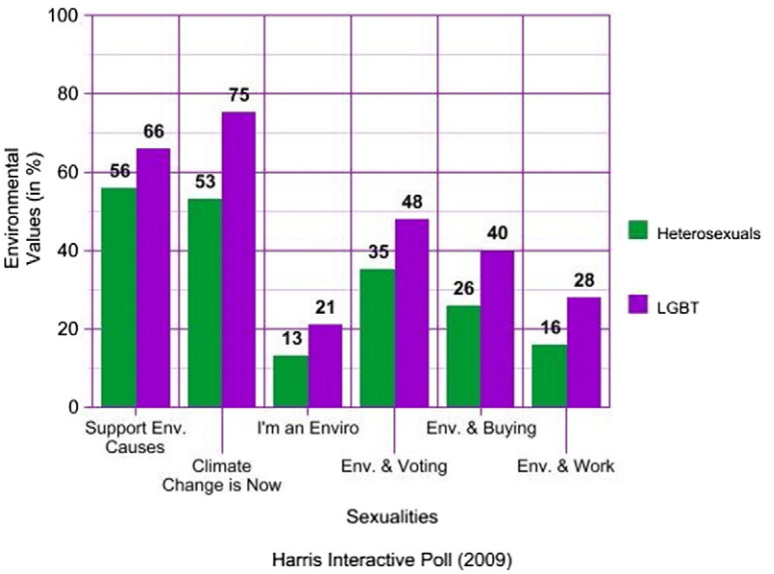

Fig. 4. Environmental values & sexualities.

> In economics, a 'free rider' is someone who benefits from a good without contributing to its provision: in other words, someone who gets something for nothing. By that definition, both the family and the global economy are classic examples of free riding. Both are dependent on female caregivers who offer their labor in return for little or no compensation. (Crittendon 9)

In short, we need a feminist ecological accounting system, capable of tracking and promoting climate justice economic practices at every level, from local to global.

Replacing economic globalization (which in practice has meant global corporatization and indigenous as well as ecological colonialism) with global economic justice offers a frontal assault on climate change. Industrialized nations must pay our climate debts both to communities and to ecosystems, as called for in the Bali Principles, and develop economic accounting practices that do not externalize the costs of a just transition onto the environment and communities facing the outcomes of climate change. An economic transition from excessive takings (i.e. "profits") from women, indigenous communities, the Two-Thirds World, animals, and ecosystems to a green economy requires sustainable jobs of the kind advocated by Van Jones' organization, Green for All. These jobs will include sustainable energy systems, sustainable transit systems, and urban planning guided by environmental justice.

The foundations for food justice have been growing for decades in the food cooperative movement which began in the 19th century, and was more recently resurrected in the 1970s. Today's food justice movement includes Community Supported Agriculture (CSAs), the advent of rooftop and community gardens exemplified by groups such as Will Allen's Growing Power in Milwaukee, queer food justice farmers and gardeners from Vermont to California, and Natasha Bowens' "Brown Girl Farming" efforts to map food justice so that the food movement is not seen as the domain of affluent consumers but is shaped by the self-determination of women and communities of color (Bowens, 2013). With a posthumanist food justice movement reconceived to include other animal species and to consider their lives in terms of reproductive justice, the animal sanctuary movement—a corrective response of entangled empathy, interrupting the practices of industrialized animal agriculture—may face a new opportunity: freeing up the excessive land space now used by industrialized animal agriculture, small-scale farming and community gardens alike will have more land for farming and for freed animals. This transition away from industrial animal agriculture begins by ceasing the artificial insemination of female animals on factory farms, and possibly returning freed animals to live out their lives adjacent to community gardens and small farms, where they can provide cropping services and fertilizer, giving humans a chance to repay our interspecies debt.

Overlapping with food justice, the Transition Town movement, named in 1998 and formally launched by 2005, has spread from its origins in the United Kingdom to countries on every continent, with communities responding to peak oil by building local food security through community gardens and local energy security through renewables. Some groups build on the movement for local currencies based on barter: one hour of anyone's time is equal to another's.

As Bill McKibben wrote in his *Rolling Stone* article, "Do the Math" (McKibben, 2012), social and environmental movements of the kind needed now are often inspired by having an enemy. Pinpointing the globalized fossil fuel industry, McKibben launched 350.Org's strategy of divestment, modeled on the successful divestment strategies that prompted South Africa to end apartheid. Withdrawing financial support from systems destructive of global eco-justice is another necessary but not sufficient method of resistance. While crucial to a just transition, economic boycotts and micro-level community infrastructures providing an alternative to global capitalism through local economics, energy, food, and governance can still be overridden by global-level trade agreements, multinational investments, and other forms of economic or militarized pressure. Withdrawing economic support from these global institutions of ecological domination, investing in systems based on social/environmental/climate justice, and pressuring for equitable representation within the international institutions of governance, are equally crucial strategies.[11]

The macro-level discussions at the UNFCC must be gender balanced, as was suggested over twenty years ago by the Women's Environment and Development Organization (WEDO) in their 1991 Preparatory Conference for the UN Conference on Environment and Development in Rio de Janeiro, 1992. There, many of the most salient issues of climate change were both addressed and ignored in these two pivotal conferences (Brú Bistuer & Cabo, 2004). What feminist climate justice scholars also note, albeit as an afterthought, is that these discussions of "gender and climate" have tended to focus only on women. More research is needed on the ways that men around the world have variously benefitted from or been affected by climate change discussions, problems, and outcomes. More research is needed on the gender roles of masculinities in diverse cultures, and the ways these social constructions promote overconsumption, sexual violence and exploitation, the abandonment of family members during climate change crises, and rationalize the de facto exclusion of women from decision-making bodies at the local, national, and global levels. Much has been written confirming the anti-ecological construction of masculinity (Kheel, 2008). It is time to envision and to recuperate culturally-specific, ecological masculinities that will companion this transition to climate justice (Gaard, 2014), and in this regard, posthumanist genderqueer activists will have much to offer.[12]

Toward an ecofeminist climate justice

Feminist scholars have invoked the concept of intersectionality (Collins, 1990; Crenshaw, 1991) in order to describe the "intra-actions" (Barad, 2007) of race, class, gender, sexuality, ethnicity, age, ability and other forms of human difference, using this analysis to develop more nuanced understandings of power, privilege, and oppression. But fewer scholars have critiqued the humanism of intersectionality (Lykke, 2009), or proposed examining the exclusions of species and ecosystems from intersectional identities, addressing the ways that even the most marginalized of humans may participate in the Master Model process of instrumentalization when it comes to nonhuman nature and *earth others* (Plumwood's term, anticipating Cosmopolitics and Critical Plant Studies alike).[13] As an ecological identity and eco-

political standpoint resisting the Master Model, ecofeminists once proposed the self-identity of "political *animal*" for First World eco-citizens (Gaard, 1998; Sandilands, 1994, 1999); this view resituates humans within ecosystems and faces us toward assessing ecosystem flows and equilibrium, while simultaneously attending to the well-being of our transcorporeality (Alaimo, 2008).[14] Joining a philosophical reconception of human identity with an ecopolitical exploration of economic globalization and its role in producing climate change, a queer posthumanist and "feminist ecological citizenship" (MacGregor, 2014) could send a critical challenge to the techno-science discourse about "mitigation and adaptation" (rather than reduction and prevention) currently dominating responses to climate change (i.e., geo-engineering). How much more time do we have to lose?

Endnotes

[1] Although I was sitting with three other queer ecofeminist women at the WEDO conference, none of us thought to theorize the connections between our sexualities and climate change; the historical moment prompted us to challenge the essentialist rhetoric of "mothering earth," and to focus on intersections of race, gender, species, ecology, democracy, and economic globalization, laying the groundwork for future studies. Sturgeon (1997) discusses my disappointment with the WEDO 1991 conference in her *Ecofeminist Natures: Gender, Feminist Theory and Political Action* (New York: Routledge, 1997), 159.

[2] Mohanty (2002) discusses the terms *Western/Third World*, *North/South*, and *One-Third/Two-Thirds Worlds* as different ways of approaching descriptions of differences in affluence, power, and the history of colonization (506–508). She acknowledges that all of these terms are imprecise, and resorts to using some terms in combination (i.e., *First World/North*, *Third World/South*). Confronting the same problems in searching for sufficiently precise terms, I will simply follow her lead.

[3] This perspective is developed more fully in my forthcoming book, *Critical Ecofeminism* (Wilfred Laurier Press).

[4] These statistics are widely cited by international Non-Governmental Organizations (NGOs); see for example UN Women.Org, UNICEF, Millenium Campaign/Voices Against Poverty, and more. It seems there are multiple sources confirming these statistics, first cited in 2007, and unchanged in 2014.

[5] The gendered impacts of climate change on women in the Two-Thirds World as discussed in this paragraph appear in numerous sources; see Dankelman (2010); Duncan (2008). The presentation of women as vulnerable victims of climate change is both cited and strongly critiqued in MacGregor (2010); Resurrección (2013), and Tuana (2013).

[6] The "Think Before You Pink" campaign challenges the pink ribbons associated with the many fundraising races and marches to "end" breast cancer; the funds go toward cancer researchers, not environmental toxicologists, and certainly not toward implementing the Precautionary Principle which would prevent industrial chemicals from being sold until tests had proven conclusively that the chemical posed no harm to humans, animals, or ecosystems. See Clorfene-Casten (2002; 1996) and Breast Cancer Action's "Think Before You Pink" website.

[7] The horrendous suffering caused by industrial animal agriculture is widely documented in books and internet sources by Farm Sanctuary, PETA, Vegan Outreach, Mercy for Animals, the American Society for the Prevention of Cruelty to Animals, the Humane Society of the USA, Sustainable Table, and more. Notable recent publications include Solotaroff (2013) exposé, "In The Belly of The Beast" for *Rolling Stone* (10 December 2013) and the 2014 release of "Cowspiracy: The Sustainability Secret" (Andersen & Kuhn, 2014), a documentary revealing the complicity of mainstream environmental organizations in covering up the climate change-factory farming links.

[8] This paragraph's discussion of interspecies reproductive justice draws on Gaard (2010, 2013).

[9] The careful methodology of these studies affirms their validity. International findings on gendered differences in climate change causes, analyses, and solutions in Ergas and York (2012) rest on 60 peer-reviewed studies, which then shape the questions and statistical analysis these authors undertake. McCright (2010) tests the arguments about gender differences in scientific knowledge and environmental concern using eight years of Gallup data on climate change knowledge and concern in the U.S. public. Alber and Roehr (2006) report on the project "Climate for Change — Gender Equality and Climate Policy" that performed data surveys of the gender balance in climate policy at local and national levels for ten major cities in four European countries (Germany, Italy, Finland, Sweden).

[10] Because the findings may surprise some readers, I include links to Harris Interactive Methods for LGBT surveys: http://www.harrisinteractive.com/MethodsTools/DataCollection/SpecialtyPanelsPanelDevelopment/LGBTPanel.aspx.

[11] The socially-responsible investing movement has 18th century roots in religious communities of Quakers and Methodists, with its values revived and augmented by 20th century social movements for civil rights, workers' rights, peace and environmental health. The Occupy Movement launched in September 2011 drew on the strategies of socially-responsible investing in its "Move Your Money" or "Ditch Your Bank!" campaign, urging social justice-minded citizens to divest from corporate banks and invest in credit unions and community banks. A queer feminist and posthumanist discussion of socially-responsible investing is long overdue. See http://www.ussif.org/ for this movement's most recent articulation as "sustainable and responsible" investing.

[12] Beth Stephens and Annie Sprinkle's "Goodbye Gauley Mountain: An Ecosexual Love Story" brings queer sexuality and erotic love for the earth to support communities in West Virginia's Appalachian mountains as they fight coal mining, mountaintop removal, and the related harms to human, animal, and environmental health. See http://goodbyegauleymountain.org/ for the trailer of their documentary, which has won film festival awards at national and international film screenings.

[13] For Cosmopolitics, see de la Cadena (2010) and Stengers (2005, 2010); for Critical Plant Studies, see Marder (2013) and Pollan (2013).

[14] For non-western, indigenous communities, the "indigenous cosmopolitics" described by Marisol de la Cadena (2010) may be a better fit. My theorizing applies primarily to my own cultural and economic contexts in a first world industrialized nation.

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