Our hope in the present essay is to provide a figure for thought in response to what Paul Crutzen and Eugene Stoermer first named "the Anthropocene." Our interest is not in providing a substitute for this concept, but in offering an alternative way of approaching the vast political-ecological work currently being attributed to it. We want to question the images of impending global catastrophe, the glorifications of human abilities to overcome such quasi-apocalyptic conditions, and the ironic celebrations of our 'natural' resilience and technological prowess that are woven through the calls to responsibility and action which characterize Anthropocene discourse.

We draw our approach from a critical reading of the work of Luce Irigaray. Irigaray's project is part of a genealogy of feminist thought that predates the emergence of Anthropocene discourse and offers a sustained critique of the concepts of both Nature and Man. We share serious concerns about the limitations of Irigaray's project with regard to race and heteronormativity. However, we find her work helpful because of the way it combines two key strands: first, a critique of what she calls the hom(m)ogenizing logic of the One, whose refusal of difference(s) is as much an ecological as it is a political disaster; and second, a critical analysis of the hylomorphism which, she argues, has informed western conceptions of political life and of the larger ecological life of which the political is a part.

According to this hylomorphic logic, a particular sense of "hyle" (matter) is opposed and subordinated to a particular sense of "morphe" (form). Irigaray shows how the ecological consequences of this logic, in terms of its constitutive devaluation of the matter of the earth, are inseparable from its political implications: those bodies identified with the inertness or passivity of matter are subordinated to the needs, lives, and energies of those identified with the liveliness of immaterial forms. And yet, it is not only specific bodies, but the irreducible non-identity of bodies as well as their constitutive and multiple dependencies which western cultures have often violently suppressed. It is the combination of Irigaray's critical attentiveness to hylomorphism and the colonizing logic of the One that allows her to work towards a rethinking of bodily matters that is attentive to lively differences and relational dependencies as well as to the ways in which those differences and dependencies are appropriated and exploited.

In this paper, we deploy a perspective inspired partly by Irigaray to identify the legacy of these appropriative, hylomorphic logics within Anthropocene discourse. In particular we build on Irigaray's interest in the elements as figures for thought that condense her simultaneous rethinking of matter and difference. While wary of the potentially foundational
resonances of any appeal to the elemental, we seek to develop an anti-foundational con- cept of elemental mut iplicit y. 5 We read lrigaray as offering a thoroughly non-essentializing account of earthly materialities as irreducible differences. The potential of this account is limited by her increasing emphasis on sexual difference as 'only' rather than 'at least' two: 6 it is here that a potentially re-founding logic needs to be resisted. Our concern, then, is to pursue a conception of elemental difference that is drawn from lrigaray, yet also works against some of her own commitments, as one possible figure for the earthly relations that the concept of the Anthropocene simultaneously foregrounds and obscures.

The Human According to the Anthropocene

The figure of the Anthropocene was first expressed in two short essays by Nobel-prize winning atmospheric chemist Paul Crutzen and biologist E.F. Stoermer. 7 The first, simply entitled "The 'Anthropocene'," lists a number of scientists beginning in 1864 who were interested in studying the "earth as modified by human action." In 1873, geologist and priest Antonio Stoppani speaks of a current "anthropozoic era." And in 1924 Teilhard de Chardin and E. Le Roy identified the "growing role played by mankind's brainpower and technolog- ical talents in shaping its own future and environment" as establishing a "noisisphere," a world of consciousness working its power over matter. In these precedents for the concept of the Anthropocene, "the human" as generic consciousness is the sole power in spite of such dramatic alterations on a geophysical scale. What we are interested in is the fact that, despite mobilizing a naturalizing discourse, the Anthropocene explicitly carries forward and reinvigorates this ethereality of a supposedly generic power. Borrowing from the Greek term for "man," the "anthropos" of the Anthropocene acts as a lesser "prime mover," infinitely powerful and yet itself strangely untouchable.

Crutzen's first essay was followed two years later by another short piece in the journal Nature. 8 In this more widely read essay, entitled "Geology of Man kind," 9 Crutzen writes, "The effects of humans on the global environment have escalated. Because of these anthropogenic emissions of carbon dioxide, global climate may depart significantly from natural behavior for many millennia to come." 10 This claim is what gives the Anthropocene its cur- rent sense. What is human here is explicitly unnatural. He again cites earlier scientists who celebrate a growing power of "mankind... 'namely towards increasing consciousness and thought, and forms having greater and greater influence on their surroundings'." 11 Crutzen does not celebrate, but he nevertheless expresses planetary problems as the fault of a unilat- eral power, the misleadingly amorphous core of the figure of the Anthropocene. The generic human, ghost ruler of the noisisphere.

Andreas Malm and Alf Hornborg have critiqued this picture for its political naivety. 12 As they point out, the anthropos of the Anthropocene is both "centre and master of the universe" 13 and gives the impression that it is perfectly anonymous when it is in fact the product of specific socio-political practices. What characterizes the anthropos-cene they claim is a supposed transfer of power from earth to human. And yet the anonymity and generic nature of this human is itself a kind of sly transfer of power back to the earth: the human is re- naturalized as a species uniquely and uniformly capable and responsible for changing the climate, and is thereby absolved of any such responsibility. Climate change becomes the
result of entirely natural human behavior, rooted in the distinctive character of the species. As an example of this naturalizing logic, Malm and Hornborg cite a more recent popular articulation of the Anthropocene thesis by Mark Lynas, for whom "the fossil [sic] economy is the creation precisely of humankind, or 'the fire-ape, Homo pyrophi / i s.'" However, Malm and Hornborg point out that large portions of humanity are not part of the fossil fuel economy at all, and that, in fact, advanced capitalist countries are responsible for 72.7% of the CO2 emitted since 1850. Moreover, they insist that the "affluence of high-tech modernity cannot possibly be universalized": it is predicated upon a transnational division of labor which is only feasible because of dramatic price and wage discrepancies. Ongoing changes in geology, biodiversity, oceans, and atmosphere, for which there is currently no collective name other than "the Anthropocene," are, they argue, "sociogenic" phenomena, not generically "anthropogenic."

Malm and Hornberg provide a political rejoinder to the distinctly apolitical sense of Cruzten and Stoermer's expression of the Anthropocene. However, as we will go on to discuss, the counter-designation of the Anthropocene as "sociogenic" once again distinguishes human life from the rest of life and attributes all power to humanity. We think it crucial to recognize not only the implications of human relationality for ecology-politics, but also the role of the non-human and the power of things so as not to re-splinter the ecological and the political.

Naturalizing / De-Naturalizing Man

As an image of thought that emerges in a specific (western, scientific, techno-capitalist) culture, "the Anthropocene" indexes the tensions that characterize relations to the earth within that culture. Anthropocene discourse oscillates unsteadily between the urgent concerns of "environmentally minded researchers who want to highlight how destructive humans have become," and a rhetoric of barely suppressed awe at man's emergence as "a new global forcing agent" that has "altered the course of Earth's deep history." This oscillation is an effect of the de-naturalization/re-naturalization process that Malm and Hornborg foreground. The devastating effects of (what are thought to be) man's uniquely unnatural activities are at the same time presented as the inevitable side-effect of the life of the species, one that (allegedly) transcends all others in its planet-transforming creativity. Either way, it is human exceptionalism that is reinforced, in ways that cover over the differences between human cultures, practices, and bodies, and that reinscribe a founding separation of the political from the ecological. It is our contention, however, that it is just such differences that need to be taken into account and just such a separation that needs to be refused and undone.

What is naturalized via the figure of the Anthropocene is a very specific, and dangerously homogenizing, image: "man" as homo economicus, whose competitive instincts of survival, consumption and accumulation lead him to dominate the earth, and whose inventive, technological capacities enable him to do so (hence the typical coupling of homo economicus with homo technoe). Malm and Hornborg remind us that this supposed "species life" is the result of socio-political operations whose histories are inextricable from colonialism and the exploitation of labor. Yet their proposed re-theorization of climate change as "socio-" rather than "anthropo-genic" reinstates a human/nature, nature/culture divide in ways that
continue to deny, or at least downplay, human beings' constitutive dependence on non-human natures of many kinds: not only for their very existence but for the development of those forms of life often taken to be most distinctively "human." The ability to "re-engineer" the planet through fossil fuel use is not only bound up with structural inequalities between human beings, as Malm and Hornborg rightly emphasize; it is only possible because of the capacities of non-human substances whose formation did not depend on human life and whose agencies exceed human powers.

Attending to the dependencies of human beings on non-human matters might help to dis-place the inevitable anthropocentrism of the Anthropocene. An attentiveness to the role of bacteria in human bodies and producing "fossil fuels" might ameliorate the hubris of naming a planetary epoch after our own species by reminding us that what we take to be distinctively "human" is not only the product of historically specific and differentially embodied practices, but both made possible and co-constituted by the non-human. Human beings do not only do things "to" nonhuman matter, but with and as. Undermining the generic conceptual core of the Anthropocene not only forces us to question the traditional isolation of the political from the ecological and geological (at least in western modernity); it also removes the hypostatized illusion on which this isolation would seem to rest. There is no "anthropos" as a generic human agency and the presumption of sameness which gave it sense we attribute to the long conceptual history of hylomorphism that Irigaray has so thoroughly critiqued.

**From Hylomorphic Sameness to Morphological Differences**

By replacing the anthropogenic with the sociogenic, Malm and Hornborg miss the more radical import of their own critique, which shows the danger of Anthropocene discourse to lie in its violently homogenizing effects that perpetuate what thinkers like Irigaray have called a "logic of the Same." As a figure that reduces human multiplicity to a single amorphous species ("humankind"), the Anthropocene replicates the biotic homogenization of "the Great Acceleration" that it largely takes itself to be working against. It thereby obscures the extent to which climate change is the result of modes of life that benefit some (mainly human) bodies while depending on the appropriation, exploitation and exclusion of many (human and non-human) others. To address such inequities, Malm and Hornborg are right to focus on the socio-political formations that lead to differing relations to climate change in terms of both its genesis and effects. But we think this attentiveness to relations that produce and exploit differences should be expanded to include the dependence of what is traditionally sequestered as the social and political on materialities of all kinds. It is this encompassing attentiveness to differences and relations that is afforded by Irigaray's engagement with elementality.

This concept has a critical double valence, simultaneously retrieving the thought of irreducible (elemental) bodily difference (the kind of difference that inequitable social arrangements typically exploit) while acknowledging the manifold materialities on which such differences depend. In resistance to their potentially foundational role, the elements are presented in Irigaray's texts in terms of a fluidity that not only generates differences, but also prevents any one difference from becoming elementary in the sense of being either fixed or foundational (including sexual difference, despite Irigaray's own tendency to treat it as such). Elemental
multiplicity thus performs a "Copernican" turn more radical than Kant's by displacing the human into a flow of contingent and unpredictable becomings that are no longer centered on "Man."

In its affirmation of contingency, the figure of elemental multiplicity further exposes the hylomorphic and teleological thinking exemplified in Anthropocene discourse. While the latter seems to displace onto-theological appeals to divine order or "Providence," as we have seen, a new teleological narrative takes its place in which global geophysical change is seen as both the inevitable effect of human nature and surmountable only due to the exceptional qualities of that same species. In its more optimistic, techno-utopian forms, the Anthropocene points to the final overcoming of nature by man, as his technological prowess allows him to outstrip or at least adapt to the most devastating effects of his own activities. In its more pessimistic, critical forms, it nonetheless tends to remain an oppor- tunity for man's moral redemption as he learns how to live harmoniously with the earth. What both approaches foreclose is the thought of human beings' place in a far more unruly (de-deified and de-naturalized) "nature," characterized by radical contingencies and earthly dependencies. From such a perspective, human beings would be seen neither as a homoge- nized species nor as the exclusive center of the world, its histories, and futures.- The project of transforming relations to the earth would be undertaken neither for the sake of (human) survival at all costs, nor for humanity's moral redemption, but so as to affirm the multiplicity and asymmetrical dependencies that constitute earthly lives human and nonhuman, as well as the unpredictability that leaves their futures open and undetermined. 23

Coupled with its re-inscription of teleological thinking, Anthropocene discourse also perpetuates the hylomorphism that has dominated the western tradition. On this model, form is actively imposed on passively receptive matter in ways that work towards sameness (recognizable identity) and that embody an appropriative, instrumentalizing relation to the earth. Such a logic remains obvious in accounts of humankind as a newly emergent geological force, according to which human activities no longer simply affect the environment but determine the stratigraphic structure of the earth. However, it also remains implicit in Malm and Hornborg's critical response, which contrasts natural conditions (geological and meteorological processes) with social relations ("world-views, property and power") and notes the ways in which the latter can now be said to "mould" the former. 24

Irigaray's interest in challenging hylomorphism stems from its historical gendering, accord- ing to which masculine formative power typically determines passive, feminized matter. For Irigaray, displacing hylomorphism allows for greater recognition of the role of non-human (elemental) materialities (air, fire, earth, water) in the formation of sexuate, human bodies, and an account of a specifically female subject as distinctively sexuate without being bio- logically determined. We think this approach deserves (and needs) expanding to all human bodies in ways that undercut Irigaray's privileging of sexual difference while reinforcing her emphasis on morphological differences and the dependence of human on non-human matters. In other words, the specificity of each human being as an always morphologi- cal-bodily being is dependent on a fluid materiality that fosters and sustains the emergence
of difference(s) and imbricates the distinctively human with non-human powers and forms. The necessarily re-productive logic of hylomorphism is thereby supplanted by the unpredictable generation of morphological specificity.

Building on Irigaray, we note how western hylomorphic thinking has been intrinsic both to the domination of the earth and to the appropriation of a wide range of bodies, as some have been associated with nature/earth far more tightly than others (more specifically, those categorized as non-white, dis-abled, indigenous, immigrant, as well as women, and especially those whose bodies partake multiple-y of the meanings imposed by these categories). In ways that reinforce the inextricability of the ecological and political, such bodies have typ-ically been reduced with the earth to the necessary support and resource for (white, adult, able-bodied) man's form-giving activities. This pattern both accounts for and is continued in the relative privileging of environmental activism precisely by those least harmed by climate change both globally and intra-nationally. An alternative model of fluidly generative mate-rialities might help to counter "the image of dead or thoroughly instrumentalized matter" that sustains "earth-destroying fantasies of conquest and consumption." Unbound from the simple opposition of active (form-giving) powers versus the passively receptive or inert, such a materiality would be constituted by self-differentiating relations which flow across human and non-human forms, reminding us both of the differences between human beings and of the manifold "nonhuman powers circulating around and within human bodies."

**Elemental Multiplicity**

In this way, Irigaray's critique of hylo-morphism goes beyond her own tendency to re-inscribe a sexual di-morphism. Instead, it creates the space for the expression of what she suggests is an elemental plurality in human life, which is a site of the plurality character-istic of all life. In her essay "The Three Genders" Irigaray writes that "sex is a primary and elementary dimension of subjective structure. We are sexed beings, and we produce sexed forms." We take this to mean that the sensations of living bodies-sensations that are inextricably bound up with singular yet shifting morphologies-play an inescapable role in the forms those bodies collaboratively create in the effort to live and understand themselves as bodies. For Irigaray each body is in the company of dissimilar bodies as it engages as body in the creation of form. Forms are collectively created and yet exceed language, which serves as a kind of shared, potentially violent knitting among bodies through which their possibilities develop, are thwarted or blocked. This again suggests an inextricability of what is "ecological," "biological," or "physical" from what is "political," "sociogenic," or "linguis-tic." Language itself is a political-ecological matter, a question of relations and the extent to which relations of difference are fostered or foreclosed. For this reason we are not pro-posing to replace the homogenizing concept of the Anthropocene with an equally monolithic concept of the elemental. Instead we are suggesting that the figure of elemental difference opens our thinking towards a plurality of ecological-political forms, together with the bodily multiplicities on which they depend.

Bodies may share language, but this does not mean that they are the same bodies. The presumption that bodies might be or become alike, and that language itself might foster a
uniformity of matter, is itself a hylomorphic one. The concepts of bodies in western cultures are suited to bodies deemed "masculine" and "white" where the very notions of masculinity and whiteness owe their sense to that which is said to depart from them. This is not just an oppositional but a hylomorphic logic because that which is taken to depart from (for example) white-masculinity is taken to be representative of the bodily matter that both whiteness and masculinity must define themselves against: not only as that which they are not, but as that which they constitutively transcend. Following Irigaray, who critiques the identification of woman and earth to attend instead to both sexuate bodies and non-human materialities, we do not seek to repeat the identification of non-normative bodies with matter, but to reclaim the self-differentiating fluidity of matter as that which makes possible an irreducible variety of bodily-morphologies. In contrast, Anthropocene discourse repeats the familiar pattern whereby a supposed universality (of "Man" or "the species") disguises a morphological specificity whose privilege depends on the exploitation and exclusion of other bodily-morphologies. We mean to expand this picture to appreciate the political-ecological power of morphologies of lightness and darkness, health and madness, independence and need, human and animal, each pair resonating with the others to create a vast web of hierarchized bodies and relations. Elemental multiplicities abound and are exploited in relations of power that are as ecological as they are political. Although difference may seem to be something that is only produced by unequal or hierarchical power relations (which all too often do create the real, lived differences that structure people's lives), Irigaray's approach suggests that such power is already responding to and exploiting an elemental play of bodily differences that always exceed it, even if in precarious ways.

In the chapter of Speculum called "Any Theory of the 'Subject' Has Always Been Appropriated by the 'Masculine,'" Irigaray asks what would happen "if this earth" that a body is were to "turn upon herself," to take herself as a morphological center. What if it were affirmed that, just as the amorphous figure of the anthropos is a hypostatized illusion, a homogenizing reification, so too there is no body as such, there is no "the body"? What would happen not just to her, but to the concept of "Man" that makes it possible for an entire language to be cast in a voice suitable for some bodies and not others, trapping us in a world of relations which is politically unjust because ecologically impoverished and ecologically unjust because politically impoverished? Darkness is evil; blood is a sign of tragedy; to be a woman means one must bleed, and only women bleed; illness means impending death; non-conformity is madness; animality means depravity. Such meanings surround us and imbue us. They become us, even when our bodies resist them. Yet resistances provide evidence of the need for counter-movement, bodies that do not just strive to turn away but turn differently to insist on other ways of relating, to themselves and to others: "But what if the 'object' started to speak? Which also means beginning to 'see', etc. What disaggregation of the subject would that entail?" What if we took this crucial point in Irigaray and used it in ways of which Irigaray would not necessarily approve? What if the multiple bodies upon which all of the negative contrasts have been predicated were no longer thus policed? What disaggregations might that produce? But also: what disaggregations are already being produced? We worry that a colonizing logic repeats itself in the presumption that these bodies are not already, and have not always been, speaking and sensing in ways that exceed the policing.
of their lived morphologies. What forms (morphological, relational, linguistic, ecological-political) are becoming possible in these ways of speaking and sensing otherwise? And what might that do for relationships with and as earth, and among bodies of all kinds?

**Conclusion**

Anthropocene discourse continues to foreclose the creation of a sense of the power and plurality of a world of things, plural as earth is plural, in ways that challenge current expressions of "the human/ the species / the body." Likewise the very concept of "the Anthropocene" homogenizes and freezes under the sign of "the human" an ecological-political dynamism that needs to be rethought in terms of a plurality of agencies, forces, and relations. It is in this context that elemental multiplicity may be helpful in reorienting our thinking. What would it mean to develop a response to the water violence in Flint that recognizes it as a result of agencies human and nonhuman, making the ecological/political distinction obsolete? How might conjoining the supposedly natural (water) with the typically taken to be political (violence) help us hold together and think across relations of race, class, water, lead, capital, ... ? Elemental multiplicity is perhaps a figure for another time, a time that is out of joint with Anthropocene horizons and that calls on us to change relations in the present with no guarantee of future survival, a time that foregoes appeals to an amorphously triumphant species and instead allies itself with the contingent multiplicity of earthly life as ecological-political life.

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**NOTES**


3 See Gayatri Spivak, "Foreword" and Penelope Deutscher, "Conditionalities, Exclusions, Occlusions," both in *Rewriting Difference: Luce Irigaray and "the greeks"*, ed. E. Tzelepis and A. Athanasiou (Albany:
SUNY Press, 2010), and Mary Beth Mader, "All Too Familiar: Luce Irigaray's Recent Thought on Sexuality and Generation", *Continental Philosophy Review*, 36 (2003), 367-390.

4 On this last point, see also Bennett, *Vibrant Matter*.


6 See *i love to you*, trans. A Martin (London, NY: Routledge, 1996), where Irigaray suggests both that 'the natural is at least two' and that 'across the whole world, there are, there are only, men and women.' (35, 47; our emphasis). While the second claim rightly emphasizes bodily specificity it also reinforces gender dimorphism.


10 Ibid.

11 V.I. Vernadsky, cited in Crutzen, Ibid.


14 Ibid., 63.

15 Ibid., 64.


18 Jan Zalasiewicz, Mark Williams, Will Steffen and Paul Crutzen, "The New World of the Anthropocene," *Environmental Science and Technology* 44.7 (2010), 2228.


20 See Zalasiewicz et. al., 'The New World of the Anthropocene,' 2228; 2230.


23 See Grosz, *Time Travels*.


25 As Irigaray notes, no woman has the morphology of any other; see *To Speak is Never Neutral* trans. Gail Schwab (London, NY: Continuum, 2002), 243.

26 Bennett, *Vibrant Matter*, ix.

27 Ibid.


30 Ibid., 135; 167.