MAINTENANCE WORK: CLIMATE FICTION AND PROCESS BIOLOGY

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"Maintenance Work" asks what it means to be living through crisis. In attending to representations of cooking, cleaning, and caring in climate fiction from the last five years, I recast the descriptive processes of realist novels as crucial to the imaginative work of maintaining a livable world. Process biology, an approach to life science that asserts that stable formations are not necessarily static ones, offers surprising resources for this reconsideration of domestic writing. Drawing on recent developments in metabolic and epigenetic thought, I revisit some of the most "static" devices of the realist novel: description, listing, and metonymy. I also draw out the tensions between preservation and change implicit in the notion of sustainability.

My first chapter reads Richard Powers' *The Overstory* alongside biological discourses of "self-sustaining" systems, generating an ecologically-attentive reading practice I carry through the subsequent chapters. The second, on Aminatta Forna's *Happiness,* reads the novel through metabolic science to provide an account of the digestive processes of everyday life. In chapter three, I take the grocery shopping subplots of Louise Erdrich's *Future Home of the Living God* alongside theories of epigenetic heritability to make a case for the value of the habitual in attempts to represent the future. My final chapter builds on this thesis, reading Lucy Ellmann's domestic opus, *Ducks, Newburyport,* as both grappling with new molecular scales and experimenting in collectivity-via-anxiety-management. Taken as a whole, "Maintenance Work" presents an account of "process" as a crucial supplement to the recent critical turn to "form."

BIOGRAPHICAL SKETCH

Molly MacVeagh was born and raised in Brookline, Massachusetts. She received a B.A. in English from Bowdoin College in 2015, and a M.A. in English from Cornell University in 2019. In 2022 she earned a Ph.D., also from Cornell.

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Introduction: Processing Climate Chang

"The lure of generalized disaster as a fantasy," Susan Sontag writes, "is that it releases us from normal obligations" (210). Apocalyptic climate narratives beckon in part because of this release: they appear to offer an imaginative space where collective crisis provides collective clarity, and the urgency of the threat suspends the need for things like dusting, dishwashing, and hashing out policy changes. If the world is ending, the logic goes, it hardly matters whether there are cheerios ground into the carpet. The syntax of article 43-A in the latest carbon sequestration initiative no longer seems worth debating. If wildfires are raging up the hillside by your apartment, or a hurricane is supposed to touch down in your neighborhood, there is little point in scrubbing tile grout, or urging your neighbor to recycle, or planning the Shabbat dinner menu. Apocalyptic and science-fictional novels, sometimes characterized by this suspension of the everyday, are formally and narratively suited to zooming through time and space. Unburdened with the narrative weight of habit and domestic labor, they are free to dwell on weighty questions of collective action and collective risk. As such, they've provided some of the first literary articulations of climate change's large-scale effects.

Some of the first, yes, but by no means the only. If the initial wave of cli-fi scholarship (Trexler, Heise, Johns-Putra, Clark, Ghosh) emphasized the representational possibilities of speculative fiction over realism's modal utility, more recent entries to the field (de Bruyn, Song) have argued for realism's unique political-aesthetic contributions to the category of climate fiction. I will map the contours of this argument more fully below, but for now I will just say that this project does not fall neatly on one side of this divide. In fact, over the course of writing, I have come to feel that this generic division is counterproductive insofar as it obscures the continuities between speculative and realist approaches to climate crisis. The novels I gather here

are both fantastic and deeply quotidian—imagining future Londons and de-evolution even as they worry over the shameful state of the living room. Many of them are apocalyptic in nature, but instead of the specter of crisis rendering the "normal obligations" of domestic maintenance obsolete, this labor becomes, if anything, more crucial. In making maintenance work both visible in itself and an aperture for encountering the dailiness of climate change, these novels serve as technologies of attention.

These novels are invested in change: respectively, they consider deforestation (*The Overstory),* shifting urban ecologies (*Happiness*), population levels (*Future Home of the Living God),* and toxicity (*Ducks, Newburyport*). Each novel—implicitly or explicitly—thinks through what it means to live on a changing planet, and so I'm comfortable putting them under climate fiction's broad umbrella. But rather than asking that crucial and oft-repeated question in ecocritical analysis, "how do we make change?", these novels ask something else. "In the midst of change," they seem to inquire, "why do things remain the same? What processes enable stability? And what kinds of stability are worth holding on to?" These questions cluster along the axes of conservatism. They carry the implicit valorization of continuity, preservation, tradition, and comfort. Depending on one's relation to the extant, the terms might be chilling: redolent with power and whiteness, with shoring up the unjust structures of the present. They also might carry the weight of longing. Amid a contemporary landscape of precarious jobs, precarious lives, and precarious environments, "stability" can seem the stuff of fantasy.

Critical theory has tended toward the former set of reactions. Centers that held were to be viewed with suspicion, continuity and comfort even more so. But amid conditions of intersecting collective precarity, scholars are increasingly aligning themselves with the latter camp. As Bruce Robbins, Catherine Malabou, and Caroline Levine have separately pointed out,

in economic, climatological, and domestic contexts, stability is something to be desired ("New Politics of Materialism," 10, "Routine," forthcoming). Susan Fraiman articulates this shift particularly well in *Extreme Domesticity.* It is perhaps time, she writes, to disentangle the stability of domesticity from "the usual right-wing pieties and the usual left derision (3). Her non-traditional homemakers "invite us to own the *desire for non-extremity*—for safety, comfort, and belonging—evident across divergent domestic efforts and arrangements" (196). Potowatomi scholar Kyle Powys Whyte's concept of "collective continuance," or "society's overall adaptive capacity to maintain its members' cultural integrity, health, economic vitality and political order into the future" pushes the question of maintenance into explicitly ecological and political terms (355). Outlining the dynamics of indigenous collective continuance, Whyte explains that contemporary challenges like "global environmental change" and "settler colonialism," "interfere with, perturb, or degrade the ability of the traditional capacity to provide valued aspects of a collective's quality of life" (354).

In the ecological realm, then, the "desire for non-extremity" may remain unfulfilled. Under current geopolitical circumstances, we are heading for a future of climate extremes—a future where "safety, comfort, and belonging" are accessible only to a privileged few. And yet so much of the language attached to the environmental movement trades in the language of continuity and comfort. The "sustain" in "sustainability" and the "conserve" in "conservation" both push against the need for radical, drastic alterations to contemporary life. In titling this project "Maintenance Work," I invoke another term that looks longingly at continuity. But what I like particularly about "maintenance" is that it suggests stability without stasis. As with Whyte's "collective continuance," which stresses the human capacities and intuitions organized in ways that are suitable for adjusting to potential changes," "maintenance" is a process (355). In drawing

attention to the work required to maintain the infrastructure of everyday life, it rejects the notion of preservation as stillness favor of a mode of re-creation both active and collective. The literary form best suited for staging this kind of re-creation? The realist novel.

1. What's Realism Got To Do With It?

When realist fiction comes in for criticism, it is generally because of its relation to the extant. If studies of nineteenth-century literature often emphasize the genre's rich social insight and ability to model systems, studies of more recent fiction often take it to task for outdatedness, lack of self-consciousness, and political quietism (Anjaria 278). In writing about Modernism, for instance, realism is often the mimetic other against which the experimental can take shape—a sort of naïve older brother still earnestly trying to represent stuff. This straw-man version of nineteenth-century realism puts it into uncritical relation to "the given"—what George Levine calls "metaphysical complicity with things as they are" (4). And as Pam Morris explains, in this story realism gets linked to "Enlightenment grand narratives of the emergence of individualism and the triumph of empirical science," an association that renders it complicit in the "dangerous separation" between glorified subject and material world to be mastered (13). To the extent that realist fiction perpetuates the subject/object split, in other words, it can be seen as contributing to the contemporary environmental crisis. To the extent that it represents the marriages, dinner parties, and inheritances of a localized group of individuals, it will inevitably fail to represent crisis at scale.

For all realism is met with rolled eyes among the avant-garde, few critics would endorse the strong version of these claims. They remain important for my purposes, however, because most early climate fiction scholarship staged rejections of the realist mode along precisely these lines. In Adam Trexler's *Anthropocene Fictions*, for instance, he explicitly claims that the realist

novel's "focus on a narrow locale and a set of characters compresses distributed, global events," and so it "struggles to understand the devastating potential of climate disaster" (233). Amitav Ghosh's 2016 study, *The Great Derangement,* makes perhaps the most robust version of this argument so far. Realist novels, for Ghosh, proceed by linking together moments and scenes that are in some way distinctive or different, and then expertly concealing this scaffolding of unusual events. This concealment is achieved through what Franco Moretti calls "literary fillers," or mechanisms designed to "keep the 'narrativity' of life under control" (72). Fillers—things like dinners and errands that are often aligned with categories of feminized interiority—become simple markers of the real, attempts at "rationalizing the novelistic universe: turning it into a world of few surprises, fewer adventures, and no miracles at all" (82). Because climate change occurs through the extreme and improbable events obscured by this rationalization, the argument goes, realism is formally inhospitable to its representation.

A variant, or byproduct, of ecocriticism's anti-realist bias is a parallel turn to speculative fiction. Ursula Heise, for instance, reminds us that "telling stories of entire species, on a planetary scale of space and on a geological scale of time, has been part of what has distinguished science fiction as a genre over the course of its history," and so "one would assume that science fiction….would be in a privileged position to tell stories about climate change" (282). Mark McGurl makes a slightly broader version of this claim, suggesting that both sci-fi and horror, genres "that set themselves the task of scaling our vision dramatically up or down," and "blasting through ordinary perception," are the forms necessary for representing climate crisis. Ghosh, early in his monograph, both endorses this line of thought and decries its cultural implications: "fiction that deals with climate change is almost by definition not of the kind that is taken seriously by serious literary journals…it is as though in the literary imagination climate

change were somehow akin to extraterrestrials or interplanetary travel" (7). While I would argue that the literary reception of climate fiction is changing, I agree with the general thrust of these arguments: sci-fi's formal capacities are distinct from realism's, and there are certainly aspects of addressing climate crisis that require explicitly speculative imagining.

I would, however, suggest that some of this turn toward the speculative is a product of the previously referenced story of realism as mimetically conservative. I want to challenge this story in three ways: First, many of the established characteristics of realism are a product of literary-critical history, and not in fact intrinsic to the form. As Elaine Freedgood argues in *Worlds Enough*, in the wake of structuralism and poststructuralism, the realist novel "attains a certain (imagined) stability of its representational world, a non-interfering paratextual apparatus," and "denotation that functions as *both* reality effect and referential scaffolding" (xi). This imagined stability affords a certain kind of politics: "the liberal subject needs worlds—a world of aesthetic autonomy, for example, and a world of plantation slavery—in which to dwell: that is already a science fiction, we might say. Realism, nicely enough, provides worlds, and does so in a way we have come to experience as seamless, as realistic" (103). Yet for all this representational stability has been retrofitted to the genre in response to the need for "seamless worlds," for Victorian critics the realist novel was anything but seamless; it was marred by metaleptic rupture and decidedly un-unified. Close attention to the paradigmatic realist texts of the nineteenth century, in other words, reveals them to be a hot mess of converging ontological levels, formal devices, and hanging plot ends. Returning, with Freedgood, to this version of the realist novel, opens possibilities for telling the stories of climate change in a mode simultaneously invested in the rhythms of everyday life and the exigencies of crisis.

Second, many critical appraisals of the realist mode seem to turn on a strangely limited

account of description: one where to describe is necessarily to stultify, to freeze, to limit the scope of the possible. This association between descriptive writing and a simultaneous narrative and political inertia is visible across varied works of novel theory. Georg Lukács accuses description of rendering characters and readers mere “components of still lives” (139). Gérard Genette gets at something similar, defining stasis as “when narrative discourse continues while historical time is at a standstill, usually in order to take care of a description” (126). As Dora Zhang explains, novels, burdened as they are with “stock catalogues of descriptions,” become expressions “of epistemological naivete and misplaced ontological emphasis” (9). But as Zhang goes on to argue, there is much about description that needs to be considered anew: “its challenges to our prevailing assumptions about novelistic form," for instance, as well as "the heterogeneous temporalities it can introduce into the work, the dynamism it can create through modulations in affective intensity, and the strange effects of its elongated proportions” (44). Zhang suggests that the description's ineliminable threats of arbitrariness and excess could be “read not as symptoms of total reification but rather as challenges to teleology and instrumentality” (52). The stock catalogues of descriptions are not available for straightforward consumption, but instead disruptive in their very excessive stillness.

This stillness, in turn, contributes to the formal ruptures Freedgood finds in the realist novel: the steady unfolding of narrative suddenly disrupted by reference. But as Phillip Wegner explains, it is also a mistake to concede the relation between the static and the descriptive too completely. As he puts it, “utopias are too often read as static descriptions of a place, real or ideal, with ‘description’ being implicitly understood to be the ‘other’ to the temporal, or process, orientation of narrative. However…in forms like narrative utopia, description itself serves as what in other contexts we think of as action or plot, so that the social and cultural space and

communal identity slowly emerge before eyes" (xviii). Freed from the responsibility of correspondence, in other words, description becomes powerfully processual. In the space between depicting what is and what might be, description is tool of strategic imagining.

It is the question of correspondence that brings me to my third point: contemporary realist novels are qualitatively different from realist novels that came before them. This is a claim that makes me nervous, as it feels simultaneously inane (there are cellphones! there is internet!) and enormous. I am not alone, however, in arguing for some version of it. As Ben de Bruyn explains in an article on Ben Lerner's *10:04,* one "feature of contemporary fiction is a turn towards a new form of realism, a shift that has been celebrated as well as criticized by authors like David Shields and Zadie Smith" (952). Mitchum Huehls describes this "new realism" in relation to the "theory novel," arguing that " post-theory theory novels" no longer indicate "our insuperable alienation from the real" but attempt "to build new notions of the real," contributing to a broader shift from deconstruction to composition (283). And Peter Boxall, in another separate but related argument, describes the new current in realism as one that "emerges from the aesthetic discoveries of the last century rather than defending itself against them, and…engages dialectically with the economic, cultural and material forces that produce reality today" (46). Contemporary realism, in sum, has internalized the last century of critique that found it to promise mimetic representation and fail to deliver. It now aims at representation without necessary correspondence, a faith in the real redoubled by its acceptance of inevitable representational failure. If to some extent this problem of correspondence is as old as the novel itself, I'd argue that the contemporary realist form is distinct in the sheer scope and granularity of scientific knowledge that it is increasingly called upon to represent.

This contemporary realism has been met by a parallel revalorization of the genre in

critical thought—what Colleen Lye and Jed Esty identify as a broadly interdisciplinary "new realist turn." This turn is visible in philosophy with the growth of speculative realism, and in literary studies with the rising star of cognitive approaches and surface reading—methods that respectively emphasize "deferring to a determining biological reality beyond the text" and "focusing on the immediate reality of the text" itself (276). Like many literary critics, Lye and Esty are suspicious of the ontological preoccupations of surface reading and speculative realism. They identify their interest, instead, with a third tendency of the new realist thought, one rooted in a return to Lukács' conception of realism as an aspiration to totality. Totality, here, means not the sum contents of the world but the "demand to consider…interactions between disparate phenomena." "On this account," they explain, the "realistic mode of representation is meant not to reproduce reality but to interrupt the quasi-natural perception of reality as a mere given." (277). Returning to an "old-fashioned" interest in the genre's formal complexity allows it to do this important work of interruption.

I follow Lye and Etsy in their conception of realism's power to imagine otherwise, but I see the increasing critical interest in ontology as consistent with, not divergent from, this framing. Realism, in the words of Frederic Jameson, has long been discussed as "essentially an epistemological category framed and staged in aesthetic terms" (261). For this reason, the bulk of critical conversation has focused on *how* we know what we know about reality, rather than *what* it is that we actually know. But this "what" has radically changed, even just considering the last twenty years. Among historians of science there is a growing consensus that twenty-first century developments in biotechnology mark a decisive change in the way life is apportioned and understood (Rose, Landecker, Keller, Shukin). As scales of data analysis have shifted down to the molecular and up to the petabyte, there is a collective sense that the frameworks of

contemporary knowledge-making might need to be reconceived. As the authors of *Climate Realism* suggest, these are "features of the present that strain the epistemological and historical underpinnings of meteorology, philosophy, realist aesthetics, cultural criticism, and the physical sciences" (Badia et al. 5) My dissertation takes this convergence of contemporary biology and literary-critical method as its starting point, arguing that the ontological shifts wrought by developments in twenty-first-century science have radical implications for the politics of realism. Specifically, I suggest, when realist novels are read with an eye to the way contemporary science has rendered living bodies always in flux, they seem to offer a way of encountering the structures of the given as sites of potentiality.

2. A Matter of Method

This preoccupation with dynamic materiality is one I share with a whole host of interlocutors. If Bruno Latour's "actor-network-theory" is often wryly invoked by the literary community as having gotten us into this ontology mess, there are also the related categories of "speculative realism," (Harman, Meillassoux); "vital materialism," (Bennett); "new materialism," (Alaimo, Coole & Frost, Iovino & Opperman), and "the turn to ontology" (Vivieros de Castro). While I don't wish to elide the distinctions between these approaches, for the purposes of this project I'll primarily use "new materialism," as it is the most capacious term of those listed and the one most explicitly in dialogue with contemporary biology. New materialism's creed, following Serenella Iovino and Serpil Opperman, might be characterized as "understanding the worlds' material phenomena as knots in a vast network of agencies, knots which can in turn be 'read'" (1). As a critical subfield it has resulted in a renewed investment in the agency of things—readings of worldly objects that emphasize the relational nature of existence, the porosity of bodies, and the blurring of clear distinctions between organisms and

their environments. Yet this commitment to “destabilizing boundaries” and “reading the world” puts new materialism in an uneasy position with regard to both generating political claims and analyzing literary texts. In this section I will outline some of these reservations about new materialist criticism, suggesting that its claim to novelty relies on selective erasure and its commitment to “mesh” and “entanglement” has limited analytical purchase. But I remain invested in the approach’s attentional redistribution—particularly in its implications for the role of literary description—and so the second half will gesture towards the productive conjunction of new materialism and reading processes.

Even as I invoke “new materialism” as my methodological impetus, I want to think carefully about its vexed critical status. To start, the “new” in new materialism is a suspect one, as it suggests a primacy that elides the deep traditions of more-than-human agency in many indigenous philosophies (Todd). Further, the nature/culture split that new materialism works to dismantle is far from a universal cultural antecedent (Sundberg), and the notion that “we” are both overly invested in constructionism and knee jerk anti-biologism relies on a very particular archive and reading of that archive (Ahmed). Beyond the ways in which new materialism’s claim to novelty relies on selective erasure, there are also real questions about its political and ethical implications. The network, new materialism’s privileged organizational figure, lacks the kind of political sensibility that attends the structuring ideas of the body and the contract (Lavin). While rearticulating the bounds of the body and the human might help challenge some of the classic political thought responsible for so much violence and exclusion, destabilizing these boundaries might also necessitate a concession of organizational power. Some take this argument even further, suggesting that new materialism may not even have clear ethical stakes (Bergthaller). Acknowledging that all matter has agency fails, in itself, to offer any guidance on how to weigh

human agency on onto-ethical scales. Without a sense of limitation and finitude, without structuring metaphors beyond a tangle or a mesh, it is very difficult to harness new materialist theory analytically.

Evidence of this challenge might be found in the relative dearth of studies that use new materialist theory to generate literary knowledge. Reading the stones, waves, and telephone lines of the extradiegetic world appears to bypass the written word, or at the very least render it superstrucutural. And it seems slightly odd, I concede, to articulate an argument about the vitality of matter through the doggedly linguistic form of the novel. Yet for all that, new materialists in disciplines other than English often see their projects as invested in forms of aesthetic and literary attention. Jane Bennett, for instance, whose home discipline is political philosophy, cites the literary as a tool for teaching ethical contemplation. "What is also needed," she writes, "is a cultivated, patient, sensory attentiveness to nonhuman forces operating outside and inside the human body. I have tried to learn how to *induce an attentiveness to things and their affects* from Thoreau, Franz Kafka, and Whitman" (xiv emphasis mine). Anna Tsing, in her monograph *The Mushroom at the End of the World,* suggests a similar linkage of aesthetic attention and ethical practice. She explains that deemphasizing linear industrial progress will require attending to "polyphonic assemblages"—or the intersecting rhythms of multiple life forms. This mode of attention, one akin to listening to music where autonomous melodies overlap and intertwine, is something that her book "attempts to instill" (158). Like Bennett and her reach to Whitman, Tsing suggests that a mode of observing the world concerned with "livability" is one directly related to formally-attuned aesthetic experience. What begins as an aesthetic practice—a new form of noticing or cultivated attention—gets promoted to a politics.

This is the primary notion I want to take from the messy constellation of new materialist

theories and their invocation of aesthetic objects: that the distribution of attention has political and material implications, and that art objects, particularly literary objects, are potent tools for redistributing attention. Yet for all new materialist scholars draw inspiration from the sphere of the literary to "read" the world, this kind of attention exists in direct opposition to the established interpretative grammars for reading realist novels. As Elaine Freedgood points out, "the protocols for reading the realist novel have long focused on subjects and plots; they have implicitly enjoined us *not* to interpret many or most of its objects," (10 *Ideas*). These protocols take even more explicit form in Peter Rabinowitz's *Before Reading,* where he outlines the shared interpretive strategies by which readers make sense of text in the form of four "rules": rules of notice, or what we use to figure out which details take priority; rules of signification, or those that help determine the meaning of noticed elements; rules of configuration, which depend on a reader's knowledge of the tendencies of certain literary features to appear together; and the rules of coherence, which enjoin a reader to interpret towards a unified whole (44-46). To put Freedgood and Rabinowitz in dialogue with each other: the rules of notice generally employed for reading realist fiction say that plots and characters take priority over setting and objects. An event like a marriage proposal takes interpretive precedence over the breezy moor or grand oak tree in the background, and the reader was likely expecting said marriage proposal due to the rules of configuration.

Rabinowitz's framework is necessarily schematic, but it is also self-consciously iterative. These rules work for as long as they work: because they relate to collective reading practice, they inevitably change over time. Building on the scholarship of Eric Morel, I want to suggest that the emergent genre of realist cli-fi is rapidly changing conventional protocols of notice, signification, configuration, and coherence. The genre's "proliferation," he writes, "offers an emerging mass of

texts that may habituate readers to alternative rules, which may then collide with the old ones as those readers engage earlier texts" (80). Over the course of this project, I will make a more specific version of this argument: that the bulk of this habituation is occurring in relation to shifting descriptive practice. In minutely describing the objects, backgrounds, and labor that create and maintain a novel's diegetic world, recent contemporary realism generates a set of what one might call "new materialist" reading protocols. These protocols, in turn, entail a shift in the rules of configuration—or more colloquially, "generic expectations," for the scope and limitations of a realist novel.

Heather Houser, noting the coincidence of the new materialist theory and the descriptive turn, puts the role of contemporary description particularly well:

> The liveliness of matter makes sense of the elusiveness of description. Because matter itself shimmers between being and becoming, the device meant to stick matter to the page also shimmers between evoking and revoking, between appearance and disappearance. We have a literary device, then, whose shimmery aspect aligns with intellectual projects to revive the vibrancy of matter through what Cohen calls "story-laden mode[s] of reenchantment." The fiction *does not necessarily have thematic investments in lively matter...*but instead describes imagined worlds in a manner that corresponds to new materialist recognition of the liveliness of things. (14 emphasis mine)

Houser's point here—that fiction does not have to be thematically invested in lively matter in order to perform a processual orientation—is a crucial one. The contemporary realist novel's depiction of everyday life often articulates the doubled truth of apparently bounded bodies and being as a relational process. But it does this less through latent ideology, or what Houser calls a "shimmery aspect" and more through straightforward descriptions of maintenance habits—the

eating, cleaning, and cooking that Ben Highmore calls "simultaneously world-embracing" and "world-containing" (151). Changing the patterns of our readerly attention to privilege descriptions of these processes allows the realist novel to help imagine more sustainable approaches to the collective work of existence. In technical terms, this means adopting a process ontology.

3. Process Ontology: A Definitional Excursion

First, a confession: despite its frequent occurrence in this dissertation, I look up the definition of "ontology" roughly once a month. Here is my favorite plain language version, from Warwick's online guide to critical social theory: ontology is "the science of what is, of the kinds and structures of objects."[1]

There is one difficulty, though. Already, "the science of what is," slides quickly into a taking stock of "objects" in the world. Implicit to most informal discussions of ontology vs. epistemology—the kind that happen as classroom glosses with much sweating on the part of the instructor—is the understanding that the former asks, "what stuff is there in the world?" and the latter, "how do we know?" This frame, as Daniel J. Nicholson and John Dupré argue in *Everything Flows,* is a product of the longstanding philosophical dominance of "an ontology things, or Aristotelian substances" (11). If Heraclitus, with his doctrine of universal flux, is the patron saint of process philosophy, Leucippus and Democritus's substantialist atomism and Parmenides's conviction that "permanence is more fundamental and more real than change," ultimately proved more influential in the history of western metaphysics. This was the position adopted by Plato "in his changeless realm of eternal Forms" and to some extent Aristotle, who shifted the forms into worldly entities but remained committed to their unchanging nature

[1] (https://warwick.ac.uk/fac/soc/ces/research/current/socialtheory/maps/ology/).

(Nicholson and Dupré 5). In ancient Greek philosophy, in other words, things took interpretative precedence over processes. This precedence is visible today in the pervasive bias toward things reflected in commonplace English usage, and it has wide-ranging effects on the how science is conducted and interpreted.

But with Nicholson and Dupré, I want to explore what happens when processes take interpretative precedence over things. Process ontology asks one to think of things as being derived from processes: it "does not mean that things do not exist, even less that thing-concepts cannot be extremely useful or illuminating. What it does imply is that things cannot be regarded as the basic building blocks of reality. What we identify as things are no more than transient patterns of stability in the surrounding flux, temporary eddies in the continuous flow of process" (Nicholson and Dupré 13). This is still very abstract. By way of more concrete illustration, take metabolic turnover, or the basic fact that organisms need to eat to stay alive. Metabolism names the means by which organisms break down materials from their environment in order to get the energy to maintain themselves at a steady state far from thermodynamic equilibrium. It also encompasses the ways organisms dissipate energy and excrete material wastes. Foregrounding metabolism emphasizes the way an organism—something that has the form of a man, or the substance of an orange tree—is an accumulation of processes.

Ecological interdependence provides another useful case for justifying a shift to process ontology. In the orthodox substantialist view, there are two features that are generally regarded as defining characteristics of a thing or substance: that it should have boundaries more or less determined by its being the kind of thing it is, and that it should exhibit some kind of autonomy. As Nicholson and Dupré explain, "neither of these characteristics is easy to reconcile with the well-known fact that organisms do not exist in nature as isolated, or even independent, entities

but rather live in densely interconnected communities that provide many of the conditions of existence that enable the survival of their individual members" (20). Take, for example, the now well-established claim that large organisms are better understood as multi species collectives composed of bacteria, fungi, protists, and viruses which live in symbiotic association with their hosts. Or the simpler example of ferns growing on trees in order to increase their exposure to the sunlight. In both instances, insisting on organismic "independence" involves dismissing the constitutive nature of the organism's relations. Considering organisms as processes, or, "fundamentally relational entities that affect and are affected by their environment," means that unequivocally establishing their boundaries amid ecological interdependence is no longer a problem (21).

Part of this shift away from seeking firm boundaries and definitional essences, I'd argue, is a product of a scalar shift in scientific inquiry. As Nikolas Rose explains, contemporary biology increasingly works at the level of the molecule instead of the level of the gene. "Molecularization" has become a "style of thought" for contemporary bio-medicine, one that deemphasizes causal genetic explanations in favor of a "postgenomic emphasis on complexities, interactions, [and] developmental sequences" (47). If nineteenth-century biology was a "biology of 'depth'" concerned with discovering the "underlying organic laws that lay behind and determined the functioning of closed living systems," contemporary biology is concerned with "precisely the reverse." Instead of simplifying laws, the search is for "dynamic, complex, open systems combining heterogeneous elements, to predict future vital states and hence enable interventions in those vital systems to reshape futures" (16). What this amounts to, in plain language, is a re-conception of bodies, matter, and method. What looked like structures turn out to be processes, what looked like objects turn out to be systems.

Insofar as this new biological thought is scale-spanning, process-oriented, and time-bound, it converges quite naturally with questions of narrative. As contemporary biology attempts to describe and model the complex systems of the world, it is confronted with some of the questions that literary scholars are wrestling with in debates on methodology. What are the things in a model world that count as meaningful? If we reject the possibility of a Borgesian replication of the world entire, what are the principles of selection and exclusion? How does the possible exist within the actual, and how does our method of describing the actual occlude or expose those possibilities? In these questions, an orientation towards process converges with the problem of form.

4. Some Implications Regarding Literary Form

Recent contributions to formalist criticism have provided productively divergent accounts of form. There's the definition of form that refers to "elements of verbal composition" like "rhythm, meter, structure, diction, [and] imagery" (Wellek 55). There's a version of form that seeks to establish its essential priority—form as preceding and thus enabling everything from poems to people (Macpherson). Then there are Anahid Nersessian's intriguing notion that "form exerts a conceptual pressure that can turn an event into a signal" (313) and Caroline Levine's intentionally capacious concept of form as "all shapes and configurations, all ordering principles, all patterns of repetition and difference" (3). With this definitional proliferation comes a lively disciplinary meta-discourse—visible in venues like the 2017 "Theories and Methodologies" segment of *PMLA* and Anahid Nersessian and Johnathan Kramnick's 2017 essay in *Critical Inquiry*, "Form and Explanation." The latter, especially, captures a sense of the discourse's saturation: "What does form explain?" Kramnick and Nersessian ask. "More often than not, when it comes to literary criticism, form explains everything" (650).

Even this brief overview includes a number of totalizing statements: form explains everything, form is at the bottom of things, form is all ordering principles. I appreciate the scope of these claims, and my own use of the term sits most comfortably under the broad awning of Levine's "all shapes and configurations." But it is no wonder that new formalists often have to raise rhetorical guardrails to keep their arguments at manageable scope. "What on this account," Levine asks, "is *not* form*?* Is there any way outside or beyond form?" For her, the answer is a clear yes, "—there are many events and experiences that do not count as forms—and we could certainly pay close attention to these: fissures, and interstices, vagueness and indeterminacy, boundary-crossing and dissolution. But I want to make the case here that these formless or anti-formal experiences have actually drawn *too much* attention from literary and cultural critics in the past few decades" (9). Writing in 2021, I wonder if the situation has changed. I would not go so far as to say that form has drawn *too much* attention from literary and cultural critics of late. But I will say that the recurrent emphasis on form has certain consequences for habits of critical thought—consequences that make it harder to reckon with the shifting protocols of literary interpretation emerging around contemporary realist fiction.

In this last section of theoretical infrastructure before I get to the texts at hand, I intend to make a positive case for the value of "process" as a supplementary category to "form." I have already examined the case for process ontology in the context of contemporary science. Here I want to articulate a preliminary account of the value of processual frameworks to contemporary literary criticism broadly, and ecocritical approaches specifically.

First, an emphasis on process is useful because it serves to emphasize the fact that readerly agency exists alongside (and to some extent is a condition of possibility for) literary form. This is an agency that tends to be diminished in popular conversations about cli-fi, as

questions like the one Dan Bloom posed in a 2015 *New York Times* debate, "will fiction influence how we react to climate change?" abound. "What," the subtext of these questions seems to be, "could any of these books actually do?" This framing manages to underestimate both the complexity of literary objects and the complexity of the act of reading. As Eric Morel points out, "if the answer to Bloom's question were to turn out negative, then the value of these fictions (and presumably reading them) would become altogether uncertain, if not imperiled. When the debate dwells on the merits of individual works as political silver bullets…or on the appropriateness of fiction media as sources of ethical instruction, tout court—the assumption of reading's transparency curtails other thought-provoking and relevant questions" (67). The answer to the question Bloom poses, in other words, depends on how reading works as an individual and collective process—a process guided by rules of interpretation that are themselves emergent.

Reading is pretty straightforwardly a process—a word I'm defining here as "a series of actions or steps in order to achieve a particular end." It could be elucidated in sophisticated cognitive terms, but in everyday language it goes something like this: turn letters into words, turn words into sentences, turn sentences into stories, turn page. For this project, reading is specifically a process of approach or proximity: with critic David Coombs and philosopher Alva Noë, I see reading as one of the "styles of exploring and achieving, or trying to achieve, access to the world" (Noë 45). Against the long philosophical tradition that characterizes aesthetic experience as detached and disinterested—getting enough distance from something to see the shape of it—I take all that page turning and cogitating as a process of moving towards the world and the objects within it.

This understanding of reading as a mode of access leads me to a slightly stronger claim:

not only is reading a process, novels are processes too. The logic goes like this: “access to the world” has always been differentially distributed, an insight that Jacques Rancière underscores in his definition of politics as “an ongoing contest over the distribution of the perceptible.” Literature, for Rancière, participates in that politics insofar as it is “a mode of intervention in the carving up of objects that form a common world, the subjects that people that world, and the powers they have to see it, name it, and act upon it” (7). Taking a novel as a “mode of intervention” shifts the emphasis from its status as a literary object or form to a process of attentional redistribution. While this slows down questions like “does climate fiction generate climate action?” I think it does so in a way that offers a more realistic account of the complexity of literary experience.

This brings me to the second point in my case for “process”: it is an analytical frame that lends itself more easily to discussing time. As Nicholas Dames notes in *Physiology of the Novel,* scholars generally think about form in synchronic, structural terms rather than temporal, processual ones. In fact, literary formalism has had to find a variety of ways to “still time in order to detect structure” (11). “Even histories of the novel,” Dames continues, “find time an embarrassment,” preferring to dwell on the progression of a novel form across time than conceive of novel form as itself a temporal process. I'd argue that this static approach to novel criticism works in the background of many of the contemporary ecocritical arguments for the novel's unsuitability for representing climate change. Amitav Ghosh, for instance, explicitly defines the novel as constituted by borders instead of by processes. "The longue durée," he writes, "is not the territory of the novel. It is through the imposition of these boundaries, in time and space, that the world of a novel is created: like the margins of a page, these borders render places into texts, so that they can be read" (59). Because "the earth of the Anthropocene is

precisely a world of insistent, inescapable continuities" the fact that novels are constituted by sharp delimitations renders them inhospitable to representing contemporary climates (62). Ghosh cites the novel's metonymic tendencies as evidence of its discontinuous form. In the chapters that follow I'll argue for metonymy (along with lists, stream-of-consciousness narration, and description) as their own type of continuous processes, each distinctly useful in addressing the temporalities of climate change.

I would also note here that my call for a "novel-as-process" frame is something of a call-back to previous critical approaches. As Elaine Freedgood has recently argued, the critical history of the novel is "typically forgetful of itself," often writing over previous critical methods (xii). Nicholas Dames outlines one of those methods particularly salient here: “The sense of the novel as a process rather than a structure was a fundamental part of Victorian novel theory,” he writes, “…physiological novel theory imagined novelistic form as produced by reading in time, particularly in the rhythms of attention and inattention, slow comprehension and rapid skipping ahead” (11). I am not calling for a straightforward return to this Victorian novel theory, though Dames' characterization very much resonates with surface reading and the descriptive turn's foregrounding of "attention" as a key analytic (Kramnick and Nersessian 653). I am also not offering this methodological precursor in an effort to diffuse my previous claim of the qualitative difference of contemporary realist fiction. Instead, I'm trying to argue that methodological continuity does not in fact contradict the earlier claim to literary distinction. I am gesturing here to the ways the processual conception of form has remained operative in the literary landscape, and to the ways explicitly addressing this subcurrent clarifies the extent to which contemporary literature has newly metabolized the shift towards process ontology.

The final reason why "process" is a useful conceptual supplement to "form" has to do

with the kinds of questions it enables. One of the consequences of the dominance of substance ontology is the notion that if nothing changes, nothing requires explanation. As Nicholson and Dupré explain, when the default mode "of existence of a thing is stasis," the "need for explanation only arises when changes happen to it. For a process, however, change is the norm, and it is its relative stability that takes priority in the explanatory order. If the living realm is indeed processual, then we should consider the central explanandum of biology to be not change but stability" (14). When stability requires explanation, the work of maintenance, rather than the work of rupture, becomes the primary site of analysis. Foregrounding and personalizing the labor of maintenance—labor often raced, classed, and gendered into invisibility—denaturalizes structures of the given by exposing their contingency. In the context of climate fiction, this yields questions like: what are the factors that enable the continued dominance of petroculture? What is the work that is currently being done to make this climate-changed world livable? What are the stories that allow large corporations to continually make it less so? In the context of this dissertation, a process-first orientation is visible in continued attention to the work of feeding, caring, and cleaning in contemporary fiction. In foregrounding these processes, I argue, my gathered novels offer provocative accounts of just how much labor goes into maintaining the extant. This is not as sexy as an explicit theory of change or a utopian vision of the future. But utopias, in the fullness of the expression, must exist over time. In order to do so, they must be maintained. And if elements of contemporary life are dystopic, understanding how those elements are maintained is a crucial preliminary step to their dismantling.

5. Chapter Summaries

This project moves from foregrounding the process of reading to framing the novel as a process. The first chapter focuses on extra and intra-diegetic scenes of reading—book groups,

tweets, personal experiences, and characters reacting to Russian literature and popular science. The second focuses on disciplinary attention: psychological and biological ways of reading the world as proxies for contemporary method debates in literary criticism. The third begins to think through a more processual version of novel form, drawing on the explicitly diachronic structure of diary-writing to interrogate the political limits of process ontology. Finally, the last chapter looks at the way a stream-of-consciousness narration both breaks up and blanks out traumatic events, a "molecular form" best encountered as a process of creating collectivity. Taken as a whole, these chapters examine attention as a political process particularly liable to literary modulation, and particularly useful for imagining better climate futures.

My first chapter analyzes Richard Powers' 2018 *The Overstory,* a text that explores strategies for rendering the invisible visible even as it models the challenges of changing patterns of notice. *The Overstory's* obsessive tree-description has been widely lauded for shifting the terms of readerly attention, and so it provides the ground for a new materialist reading practice I carry through the subsequent chapters. At stake in Powers' grand tale of biologists, property lawyers, game designers and activists is an alternative mode of ecocritical realism—one where the rhythms and objects of everyday life offer surprising insights into the functioning of biological processes. As Olivia makes a home at the top of a redwood, Dorothy nurses Ray after his stroke, and Patricia finds community at the ecological field station, Powers' metonymic lists and molecular vision make the slow violence of climate change actionable and legible in the labor of maintenance.

The second chapter builds on this attentive pedagogy through a study of Aminatta Forna's 2018 *Happiness. Happiness* follows the budding relationship between Jean, an American wildlife biologist studying London's urban foxes, and Attila, a Ghanaian trauma psychologist

who has come to the city to present at a conference. In staging a disciplinary run-in between biological description and psychological diagnosis (and coming down squarely on the side of description), Forna's novel offers a provocative illustration of empirical attention's dynamizing power. In deploying what I call "metabolic description," or careful attention to the ingestion, disintegration, and excretion of matter, *Happiness* offers a realist account of material contingency of daily life—a contingency that rearticulates organisms and their environments in processual terms. Locating this re-articulation in the description of food and eating both challenges description's reputation as politically quietist, and supplements the energy humanities' focus on oil with metabolic discourses of the edible.

From the mechanics of digestion and consumption I move to questions of domestic provisioning more broadly, reading Louise Erdrich's 2017 *Future Home of the Living God* as a case study in how realist descriptive modes function in speculative fiction. I use this chapter to address one notable gap in the scholarship—inattention to the labor of social reproduction in apocalyptic narratives—in order to engage the larger issue of which this oversight proves symptomatic: the gendered hierarchy of notice that puts the material contexts of care and feeding below critical purview. Insofar as *Future Home's* descriptions of quotidian domestic labor both prove crucial to the plot and serve as metonymic springboards into geologic scales, Erdrich's novel creates the conditions of possibility for new patterns of attention. Her protagonist Cedar's grocery lists, tidying, and diary-writing become coping strategies for life at the human scale. Combined with the novel's epigenetic exploration of environmental conditions as heritable, these scenes of habitual upkeep illustrate the vexed political possibilities of redescribing organism/environment relations in processual terms.

Finally, chapter four takes up Lucy Ellmann's 2019 *Ducks, Newburyport* as both a

counterpoint and limit case to the preceding texts. *Ducks, Newburyport,* a thousand-page novel consisting primarily of a single sentence, follows the stream of consciousness of a mother and baker in Newcomerstown, Ohio. As the narrator muses on the complexities of tartes tatins and accidentally steps on her children's toys, she also frets over gun control, police brutality, and environmental degradation. If *Future Home* raises domestic labor to the primary site of analysis by putting it in the service of plot and collective futurity, *Ducks* forgoes plot entirely, leaving only individual interiority and endless to-do lists. Yet on closer inspection, I argue, the novel's apparent depth-interiority gives way to modeling a collective experience of porosity. *Ducks'* narrator is in the possession of a molecular imagination, and while her food-work mirrors the anti-individualist materialism seen in *Happiness,* her repeated concern over phthalates and the microplastics in sea salt challenges the boundaries of outside and in at a far more drastic scale. This happens, also, on the level of form, as the reader's enduring engagement with the narrator's thought pattern begin to blur the genealogies of reference and thought—a blurring that emphasizes the novel as a process of approach.

CHAPTER ONE

Contingency, Cli-Fi, and Narrative Closure: *The Overstory's* Conditional Good

Richard Powers' 2018 novel, *The Overstory,* closes with an ambivalent testament to the power of verbal art. Guerrilla artist Nick Hoel has traveled up to a forest on the very edge of the "methane-belching tundra" (502). With the help of three men who speak a language "so old it sounds like stones in a brook," Nick drags fallen trees into a series of floral, curling letters that spell out "Still" (492). The men don't exchange names, executing "each other's ideas with almost no words at all" (492). The letters are big enough to be seen from space, and even as the men finish their work "satellites high up above…already take pictures from orbit" (502). Powers zooms out, then, to the purported mystification of these lurking "learners." Why this message? Why now? But "in the blink of a human eye, the learners will grow connections. Already, this world is greening. Already, the mosses surge over, the beetles and lichen and fungi turning the logs into soil." In just two centuries, Nick's letters will "fade back into the swirling patterns, the changing rain and air and light. And yet—but *still*—they'll spell out, for a while, the word life has been saying, since the beginning" (502). Upon completing the project, Nick tells his companions that he'd better be going and stares at the motionless trunks around him. "*This,* a voice whispers, from very nearby. *This. What we have been given. What we must earn.* This will never end." (502). And with that, the novel finishes.

Nick's final scene typifies Powers' characteristic blend of sincerity and heavy-handedness, his skeptical yet whole-hearted embrace of the ecocritical project. Nick is both writing for almost no one (he's in a remote forest by the arctic circle) and putting on a performance for global surveillance technology. His word choice might be a prescription for motionlessness—sit still, be still, do nothing—but it also points to the motion of continuity—still

as in persistence, still as in "and yet." Nick's choice of medium, too, amplifies these divergent resonances. Trees, rooted in place, present the illusion of stillness even as they move slowly towards the sun. In their death—an event that should be an even more conclusive lack of motion—they become again sites of life: teeming with microbes, fungi, and beetles turning the logs into soil and so challenging the sculpture's implicit assertion of continued existence. Nick's word art is thus predicated on productive failure: it promises stillness and persistence and delivers motion and decay. It performs audience-less futility even as its form reaches the eyes of a widespread global network.

Power's novel, I suggest in what follows, relies on a similar mode of productive failure. It harnesses realism's inability to represent the totality of experience in order to explore formal strategies for rendering the invisible visible. It also acknowledges ecocriticism's generic struggles to enact material change in order to make a more nuanced case regarding climate literature as a conditional good. In this chapter, I argue that *The Overstory's* insistent arboreal repetition, its thickly contextualized metonymic objects, and its staged paradoxical relation between openness and closure model a form of realism in constant interchange with the extra-diegetic world. On the level of content, as characters learn how to see and narrate the nature around them, their shifting patterns of attention provide an analogue for readerly experience. And the text's unstable collage of reference, rupture, and speculation means these attentive lessons more easily cross the boundaries of the "closed" novelistic space. I do not want to overstate the value of a simple change in attention, particularly one that is highly contingent on individual readers' reactions. Such a change is connected to change in action by only the most tenuous of threads. But I also don't want to write it off as a non-achievement. Powers has written as if the novel—as a technology of attention, a mechanism of notice—is a tool for reshaping

ecological sensibilities. Although it does so uneasily, this chapter tries to read as if he's right.

The Overstory has become a core text in the growing ecocritical canon for several reasons. The first is popularity. Published in April 2018, *The Overstory* was shortlisted for the Man Booker that September. In 2019, the novel won a Pulitzer, and as I write in February 2020 it is still holding on to the #6 spot on the *New York Times* trade paperback bestsellers list. Powers' critical reception has been, for the most part, adulatory. Thomas McGuane calls the novel " a visionary, accessible legend for the planet that owns us," Barbara Kingsolver calls it "monumental," and Anne Patchett writes that it not only is it "the best novel ever written about trees," it is also one "of the best novels, period." Even Bill McKibben, noted climate activist, has chimed in, describing *The Overstory* as "beyond special…a kind of breakthrough in the ways we think about and understand the world around us, at a moment when that is desperately needed." [2] Powers is a well-established novelist, with 12 books, a MacArthur, and a handful of endowed professorships to his name. But for some reason this book, for all its ponderous greenery, was his breakout hit.

Part of the buzz might be traced to the fact that Powers' writing of this book catalyzed an amply-profiled life change. Powers had been living and teaching at Stanford, when an encounter with a giant redwood triggered a kind of "religious conversion."[3] Suddenly, he says, he understood his place "in a system of meaning that doesn't begin and end with humans." After a research trip to Tennessee's Great Smokey Mountains, he quit his job and moved there full time. While in the past he'd finish writing a book and be excited to move on to a new topic, now Powers says that he just wants to "walk, look, listen, breathe, and write this same book, again

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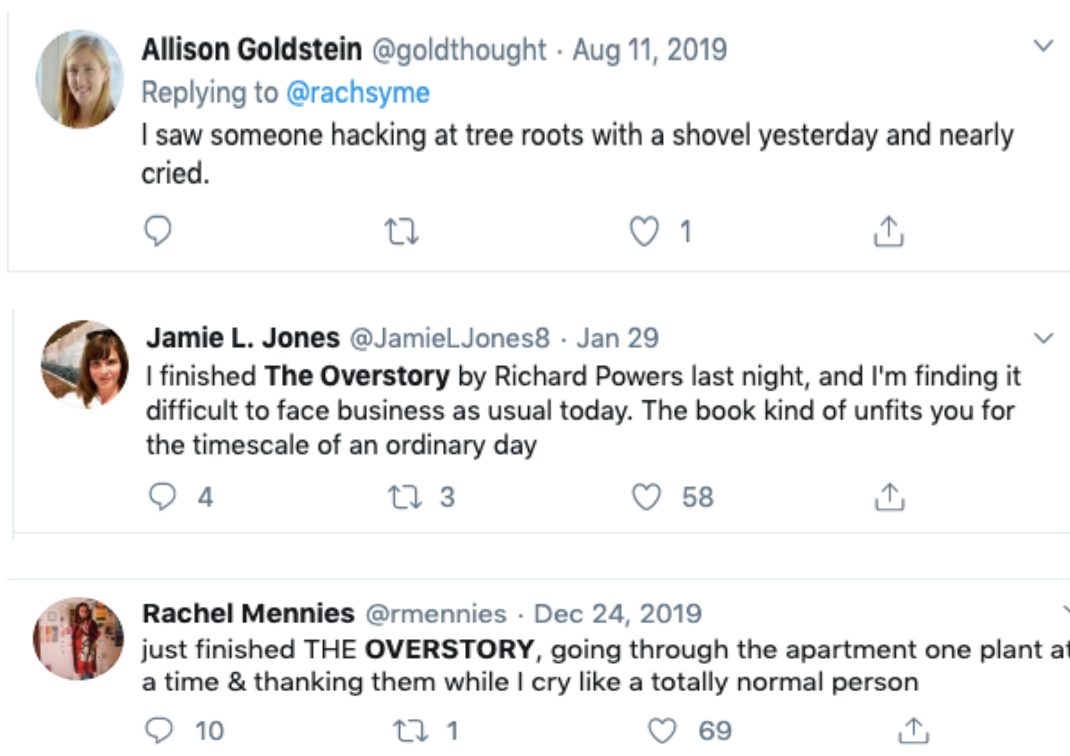
[2] All quotes from the W.W. Norton promotional page:
https://wwnorton.com/books/9780393356687/about-the-book/reviews

[3] https://www.theguardian.com/books/2018/jun/16/richard-powers-interview-overstory

and again, from different aspects and elevations."[4] Power's life change has been covered ad nauseam by the popular press. His move lurks in the background of the critical reception, providing the tantalizing suggestion that ideological literature might somehow be directly linked to individual action. This backstory, I think, is essential. Even Rob Nixon, confident in literature's utility in plotting and giving "figurative shape to formless threats whose fatal repercussions are dispersed across space and time," balks at giving too much credit to the novel form. "Any interest in form," he writes, "must be bound to questions of affiliation, including affiliation between writers and movements for environmental justice" (32). Powers' newfound commitment to walking the trails of Appalachia and giving climate-focused interviews provides the suggestion of such an affiliation.

To some extent, this narrative of *The Overstory*-as-catalyst has been adopted by lay readers. The general reaction, taken here from a highly unscientific survey of my twitter feed and conversations with my mother's book group, forgoes "this book was great" or "this book sucked" in favor of variations on "this book changed how I see the world." For instance:

[4] https://chireviewofbooks.com/2018/04/18/overstory-richard-powers-interview/



Twitter screen-capture, of course, is not a rigorous form of reader-response criticism. And it is certainly not the kind of digital humanism that would let me make sweeping claims about the Twitter-verse's response to Powers' most recent novel. These are curated tweets that portray a common readerly experience: a shift in attentional hierarchy carried, for at least a little while, to life outside of the text.[5]

But these tweets do go some way toward explaining *The Overstory's* rapid canonization. As an enormously popular text that seems to compel people to share their environmental enlightenment, it provides testing grounds for some of the claims of ecocritical analysis. What

[5] Editing this in late 2021, it's worth noting that there has been a certain predictable backlash to *The Overstory's* initial praise fest. In Dwight Garner's review of Powers' 2021 novel, *Bewilderment,* for instance, he mentions that *The Overstory* made Powers "something close to a secular saint." The novel "was seen to be improving and educational and concerned, like the magazines—Mindful, Rock and Ice, Naked Food, Dwell, Runner's World, Yoga—on display at Whole Foods and thus healthy to be observed carrying around." A more recent keyword twitter search for "The Overstory" turns up a lot of vomit emojis.

formal features or generic modes afford this attentional shift? And if we grant that the text has, at least in some cases, produced such moments of illumination, what is the political value there? Put in the terms of the introduction: does *The Overstory* offer imaginative infrastructure for maintaining a livable world? Or does it merely serve to reinforce the inequities of the present with robust arboreal decoration? In this chapter I will first explain how Powers uses the normative patterns of interpreting realist novels to critique anthropocentric hierarchies of attention. Looking specifically at his lists of greenery, I suggest that Powers courts boredom in order to make space for awe. In the second section, I look at the novel's autopoietic discourses as a way into its paradoxical invocation of the actual and the possible. Generating a reading process that I aim to carry into the following chapters, I look to the figure of the metonym as smuggling contingency into the object world even as it relies on convention. In the third section I develop this notion of contingency into a genre intervention, tracing how Powers' temporally unstable relation to the historical record and the rules of realist fiction grant failed mimetic closure speculative power. In closing I return to the consideration of ecofiction's ambivalent utility.

1. The Climate of Realism

The Overstory is an ostensibly realist text, and so works within a generic form understood to reflect the extant hierarchy of attention. It is ultimately invested, however, in a form of attentional redistribution with explicitly ecological ends. Realism, a term the rest of this dissertation will put pressure on, thus operates as a kind of screen. Under the cover of years of critical discourse that puts realist fiction in proximal relation to "the actual" and "the given," Powers' novel in fact harnesses speculative modes to renegotiate the points of narrative emphasis. In privileging dynamic landscapes and the labor of maintenance—or the "slow background change" humans are not primed to see—Powers' metonymic and metaleptic

descriptions draw attention to the way the possible is inscribed within the actual. The novel's political efficacy, limited as it might be, depends on its interface with the conventions of realism: its ostensible continuity with the extant grants the novel's forays into speculation their perspective-shifting force.

My contention that realist fiction might be an effective mode for engaging with climate crisis goes against a fairly robust strain of scholarship that sees realism as too limited for the task. Ecocriticism, in other words, has something of an anti-realist bias. While a full exploration of the roots of this bias is beyond the scope of this chapter, part of its dominance might be traced to Ian Watt's contention that realist novels operate through the combination of reference and individual subjectivity. Formal realism, for Watt, works in the premise that a novel is a "full and authentic report of human experience," and therefore "under an obligation to satisfy its reader with such details of the story as the individuality of the actors concerned, the particulars of the times and places of their actions, details which are presented through a... largely referential use of language" (32). Ecocritics have often been skeptical of a novel's ability to both fulfil this "obligation" to satisfy the reader with detail and grasp the *longue durée* and planetary scale of the climate crisis. Timothy Clark, for instance, suggests that the "scale effects" of climate change "defy sensuous representation or any plot confined, say to human-to-human dramas and intentions" (80).

Some scholars have taken this skepticism still further, suggesting that not only does realism fail to represent climate crisis, but it is also actively complicit in the structures of attention and consumption that have enabled anthropogenic climate change. As Pam Morris explains, realist fiction is generally associated with "Enlightenment grand narratives of the emergence of individualism and the triumph of empirical science." Critics like Horkheimer,

Derrida, and Foucault have pointed to the “dangerous separation” this discourse enacts between a “glorified individualistic subject,” and “an object world to be systematized, exploited, and mastered. This triumphalist perspective, it is claimed, alienates human beings from their own materiality and the physical necessities that bind us together…and has, moreover, brought the earth to the edge of ecological catastrophe” (13). On this argument, to the extent that realist fiction perpetuates the subject/object split, it can be seen as contributing to the growing environmental crisis.

The prominent critique of realism of ecocritical scholarship is often accompanied by a parallel revalorization of speculative fiction. Adam Trexler, for instance, follows his point about realism's formal constraints with the assertion that "the most interesting fiction and criticism about the politics of climate change will dwell in the speculative future, inventing new ways of connecting diverse human beings (236). On the whole, I agree with this line of argument. Speculative fiction’s formal capacities are distinct from realism's, and there are certainly aspects of addressing climate crisis that require explicitly speculative imaginings. What I want to suggest, however, is that realism has been too quickly discarded as a generic resource. Because of the specific critical narrative that tends to get rehearsed in ecocritical studies (the rise of the novel as a journey towards mimetic representation and depth interiority) realism gets underrated. But this version of realism—caricatured as an inherently conservative representation of the given—generally appears these days mostly as a departure point for considerably more capacious understandings of the genre.

These recent reevaluations of realism (discussed at some length in the introduction) mean that there is a need to revisit the attendant arguments about the relationship between realist fiction and representing climate change. As Freedgood explains, “what we ‘figure out’ about a

novel and its meanings has been prefigured by the order of detail, as well as by the history of the literary novel and of novel criticism and the directions that criticism gives us about how to read, or more importantly how *not* to read, those details" (*Ideas in Things* 50-51). Normative reading practices for realist novels have "long focused on subjects and plots," and so have "implicitly enjoined us *not* to interpret many or most of its objects" (10). *The Overstory,* I want to suggest, attempts to offer some new directions about its own reading. In its overt thematization of attention—both in terms of character development and in more metatextual engagements with imagined readers—it shifts the emphasis onto previously "unread" aspects of the natural world. In this I follow Alex Woloch's contention that literary characterization can be understood in terms of a "distributional matrix" or "character system." Like Woloch, I understand the "discrete representation of any specific individual" as tied to the "narrative's continual apportioning of attention to different characters who jostle for limited space in the same fictive universe" (13). Building on Woloch, however, I want to extend the analytic framework of the character system beyond the human. The ruptures and continuities of *The Overstory*'s tree-inclusive character system, I argue, foreground the limits of anthropocentric reading processes.

Powers' shift to a plant-privileging attentive hierarchy is by no means complete or universal. In fact, I'd argue that its success depends on the way Powers initially spends time reflecting familiar hierarchies of attention. These normatively anthropocentric hierarchies mean the novel tends to register as "realist." As Nathaniel Rich writes in his review for *The Atlantic*, "at a time when literary convention favors novelists who write narrowly about personal experience," Powers work in "the grand realist tradition," is "refreshingly unfashionable, restoring to the form an authority it has shirked." Reviews of the book are full of this scope-defining language, describing the text as "sweeping," "ambitious" and even "hefty." Reviewers'

most common literary analogue for the novel seems to be Herman Melville's *Moby Dick.* And like *Moby Dick, The Overstory* achieves this "grand and sweeping" realism in part through a careful subordination of detail—a leveraged understanding of how readers generally approach proliferating taxonomies of the natural world.

Many of *The Overstory's* early lists serve to reinforce normative patterns of reading. Their formal distinction from the flow of the narrative helps to subordinate their contents, to bring the plot and personhood of the characters into greater relief. When we first meet Adam, the psychologist, for instance, we learn that he's spent months amassing specimens in his bedroom: "Owl pellets and oriole nests. The shed skin of a corn snake, complete with tail tip and eye caps. Fool's gold, smoky quartz, silver-gray mica that flakes like sheets of paper, and a star of flint he's sure is a Paleolithic arrowhead" (51). Adam's mother throws out the collection and he slaps her, which earns him a return beating from his father. No one realizes Adam's "wrist is broken until late that night, when it swells up weird and blue like something out of *The Golden Guide to Crustaceans"* (52). This anecdote, upsetting as it is, is also reassuring in its commitment to established attentional hierarchy. The narrative emphasis lands on the human dynamics—we care about the corn snake because its helps us understand Adam's relationship with his mother. The creatures in the Golden Guide get harnessed into descriptive analogy for Adam's newly broken wrist. Something similar goes on when we first meet Patricia Westford, a ground-breaking plant scientist. As a child, she once made a deer out of twigs. "Also: squirrels from pairs of glued walnut shells, bears made of sweetgum balls, dragons from the pods of Kentucky coffee trees, fairies donning acorn caps, and an angel whose pine-cone body needs only two holly leaves for wings" (11). Here, the reassuring hierarchy is twofold. We care about the plant matter—the walnuts and coffee-tree pods—because it is fashioned into more charismatic animal forms. We

care about this list of animals because of how they help us understand Patty: she's imaginative, she likes nature, she, like her menagerie, doesn't do much in the way of talking. The pride of place for the human is upheld with the help of the list.

In these instances, at least, Powers harnesses the list form as a marker of subordinate status in the hierarchy of attention. As Gaddy, van den Broek and Sung's cognitive study of reading puts it, "successful comprehension of a text…involves a reader's ability to appropriately allocate his or her attention to the most important aspects…and at the right times, during reading" (89). While shallow processing is our default mode of attending to literature, authors tend to be aware of this, and have long used certain devices to cue readerly attention. These include, among other things "repetition, section breaks, segmentation, beginnings, and endings" (Letzler 13). On the other side of the coin, there are also those cues that suggest readerly attention is less necessary. Block quotes are one (they'll do a close reading later!). And lists, I'd argue, are another (the specific items are less important than what the list itself is indexing). When I encounter a list I often assume that I will be able to follow the thrust of the story without paying attention to every word.

Powers uses these attentional cues to great, and often metafictional, effect. In a passage focalized through Mimi, for instance, she lists the trees around her while bemoaning her inability to pay attention: "Despite a decade of living in this state, despite repeated attempts to master the field guides and dichotomous keys, she can't tell a limber from a sugar pine, let alone a port Orford from an incense cedar. Silver, white, red, and grand firs are all a frilly blur. And the swarming understory—impossible. Salal, somehow, she knows. Oxalis and trillium. But the rest is a tossed salad of inscrutable foliage, creeping up trailside" (241). In a neat doubling of reader and character, Mimi's "tossed salad" vision of the greenery around her is articulated in the form

of the list—a form that can have a similar blurring effect on the reader's perception. Her attempts at "mastering" field guides and dichotomous keys have been thwarted, and for those readers unfamiliar with the distinction between oxalis and trillium, there is a similar humbling effect. As Elaine Auyoung suggests in an analysis of *Bleak House*, although a list form "appears to present readers with more information than they can handle, its hyponymic structure invites readers to devote less attention to the specific categories of things named" (65). Powers does not stress the layout of this listed forest—there are no markers of spatial relation beyond the acknowledgment of a "swarming understory"—but he does stress the conceptual relation. By presenting the varieties of foliage as "co-hyponyms of the same superordinate category," Powers adopts a "representational strategy that runs against the grain of our critical sensibilities," one that "insists on the importance of paying less attention to somethings to protect oneself from being overwhelmed" (Auyoung 67).[6] Against the critical imperative to close read, Powers' skippable-list depictions of the natural world stage the patterns of attention complicit in environmental degradation.

The form of the list, here, converges with that other immanently skippable mode: descriptions of the setting. As Amy King suggests, "our canonical accounts of the novel form, arising out of formalist, psychoanalytic, structuralist, or Marxist interpretive practices, tend pervasively to occlude or ignore altogether one of its most salient elements: description" (460).

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[6] While Powers lists, taken on a case-by-case basis, tend to follow hyponymic patterns, taken as a whole it might be more useful to consider them as a syntactic side-effect of a more-than-human character system. As Woloch explains about Proust, *Remembrance*'s "distorted syntax" is caused in part by "an inability to accommodate these peripheral characters within the normal flow of a sentence" (28). Analogously, one might read Powers' proliferating landscape lists as a distortion borne of the structural problem posed by a tree-inclusive character system. Metonymy and listing, here, might become a sort of "escape hatch" insofar as they allow for a novel bursting at the seams with non-human minor characters to rupture without disrupting the illusion of realist enclosure.

Concerned as we are with character development, ideological implications and plot structure, description—particularly nature description— tends to fall out of the interpretive purview. William Cohen suggests that this is a tendency one ought to resist. Appreciating something like an author's successful evocation of the relationship between inner and outer states, he explains, often entails paying careful attention to setting. To access this realm of the literary one must dwell on "the 'boring parts,': the descriptions of trees and other natural forms" (6). Powers, conscious of both "plant blindness" and the attendant dismissal of natural description as "the boring part," is relentless in his landscape lists. When Patricia walks around Stanford's campus, for instance, "it's Christmas of lignin. Old, lost friends. Trees she has never seen. Pines spinning out cones in perfect Fibonacci swirls. Backwater genera—Maytenus, Syzgium, Ziziphus" (446). When Mimi and her sisters are camped out under their backyard mulberry tree, she stares up at the foliage: "It bothers her, so many different shapes of leaves. Hearts. Mittens, crazy Boy Scot hands. Some are furry underneath, which creeps her out…All the leaves are notched, with three main veins, like the three of them" (32). Listing genera, listing leaf shapes—again and again, for five hundred pages.

This kind of plant density isn't confined to descriptions of the setting. In an extension of the subordinating logic of the lists, Powers consistently deploys tree figuration in the service of illustrating his human characters. When one of Mimi's clients leaves the therapy session, for instance, she accidentally walks into a tree branch and is momentarily awestruck by the limbs "each one tentative, forked, full of scars, bent by history, and tipped out in insane flowers. The sight takes root in her, ramifying, and for a moment longer she remembers: her life has been as wild as a plum in spring" (405). When Mimi makes eye contact with Patricia during her final speech, the "glance lasts no longer than it takes a leaf to eat a chunk of light" (465). And when

Patricia takes Dennis' hand after his sudden marriage proposal, "it feels good, like a root must feel when it finds, after centuries, another root to pleach to underground" (144). Each of these moments, taken individually, could be subjected to their own rigorous analysis: what does it mean to think in the time units of tree consumption? What happens when you imagine root structures' vivid interior lives, and then map that imagined radiciferous affect onto a human couple? I will think about moments like these more fully later on, but for now, I want to take them as a stylistic mass. Taken as such, their overall effect often verges on boredom. Enough with the plants already.

Just as the plant blindness finds its character analogue in Mimi, this kind of boredom finds character-level articulation in Patricia's storyline. In another moment of metafictional mirroring, the reader's sometimes-tedious encounters with repeated tree figurations rub against Patricia's particular relation to her research. Patricia finds "the most intense pleasure" in the repetitive labor of taping numbered plastic bags over the end of branches and then collecting them at intervals (123). Then she "brings the collected samples back to the lab and spends hour after tedious hour puzzling out the concentrations and molecular weights, determining which gases each of her trees breathed out. There must be thousands of compounds. Tens of thousands. The tedium makes her ecstatic" (123). The tedium of Powers' arboreal metaphors evokes a related affective pleasure. Following Sianne Ngai, I might even call this "stuplimity," or the combination of shock and boredom. Ngai coins this term in reference to the specific combination of astonishment and fatigue triggered by experimental writing like Stein's *The Making of the Americans* or Beckett's late prose. She is, admittedly, decidedly not talking about the kind of repeated motif that crops up in realist fiction.

Nonetheless, "stuplimity" helps move us toward an understanding of *The Overstory's*

formal efforts to shift ecological attentiveness.[7] In Ngai's reading of *Making of the Americans*, she suggests that the book's interest in human taxonomies works in a mode where repetition is the "dynamic force by which new beginnings, histories, and genres are produced and organized" (262). Repetition creates a kind of paralysis, an "open feeling" that might be "described as a state of undifferentiated alertness or responsiveness—a kind of affective static" (283) Powers' incessant tree references harness normative reading practices to create this kind of affective static. Trees are not supposed to carry narrative, and yet their sheer number works against the established rules of notice: the subordinating category of "setting," here, sits in productive tension with the attention-grabbing power of sheer repetition. Powers never engages in Steinian syntactic play. By contrast, his lists and rhetorical figures feel traditional, expected. But in the simultaneously unobtrusive and excessive appearances of plant life, *The Overstory* works towards an "open feeling" that generates new forms of responsive engagement. Boredom, leveraged counterintuitively as a modulation of attention, becomes a conduit for awe.

Let me try to explain this by way of example (an example that unfortunately involves a block quote, so attend as you see fit). In a section late in the book, Powers gives a run-down of the trees Patricia collects for her seed vault:

> Honduran rosewood. Hinton's oak in Mexico. St. Helena gumwood. Cedars from the Cape of good Hope. Twenty species of monster kauri, ten feet thick and clear of branches for a hundred feet and more. An alerce in southern Chile, older than the Bible but still

[7] Something that complicates this, slightly, is the fact that the sublime in the traditional Kantian sense is explicitly tied to awe borne from nature, and also explicitly *not produced* by written depictions of said nature. See Ngai, 265: "And its interesting failure to account for the affects summoned by works like these stems from reasons more complex than the ones detailed explicitly within the Critique of Judgement (1790), such as the fact that Kant limits his concept of the sublime to "rude nature," and explicitly bars it from being applied to products of art "where human purpose determines the form and the size" (CJ, 91)."Stuplime" helps me out, but I still may need to think about this further.

> putting forth seeds. Half the species in Australia, southern China, a belt across Africa. The alien life forms of Madagascar that occur nowhere else on the planet. Saltwater mangroves—marine nurseries and the coasts' protectors—disappearing in a hundred countries. Borneo, Papua New Guinea, the Moluccan, Sumatra: the most productive ecosystems on Earth, giving way to oil palm plantations. She walks through the bleak, manicured remnant woods of over harvested Japan. She walks across living root bridges deep in northeastern India—*Ficus elastica* trained to span rivers by generations of Kasi hill people—into forests where the natives have been replaced by fast-growing pines. (388-389)

Coming as it does after pages and pages of plant description, this segment feels like gliding the lily. Where the preceding text has a tree-heavy narrative, here trees become the narrative—Patricia's world travels articulated in a taxonomy of old and new growth. A version of Ngai's "stuplimity," that combination of awe and boredom, is accessed through the repetitive list's ability to evacuate language of meaning even as it contains moments of wonder—the tree older than the bible, the tree trained to be a bridge. Without crossing overtly into experimental stylizations, Powers' perfectly legible list harnesses the static of stuplimity, and so converts readerly impatience into a more powerful form of engagement.

But stuplimity is just one of the affective modes at play here, and it's one that works to reinforce normative hierarchies as often as it disrupts them. The above passage could be read as a cultivated and purposeful boredom, a merciful announcement to "skim here!" that contributes to the novels meta-reflection on the distribution of attention. But reading this kind of list as mere descriptive excess ignores the embedded narrative. When we read about "Cedars from the Cape of Good Hope," the cedars stand in metonymic relation to South Africa. Ditto, and more directly,

for the Honduran rosewood, the Chilean Alerce, the Papua New Guinean mangroves. This is a tree list, sure, but it is also clever condensation of Patricia's wide-ranging adventures into the space of a paragraph. The dropping of the implicit subjects (*Patricia Collected, Patricia visited, Patricia harvested,* etc.) start the sentences' objects into action, leaving the gumwood and pines to work as narrative motors. In supplanting the human actor with repetitious, agential trees, Powers simultaneously endorses and disrupts the normative distribution of character-space that pushes flora to the background. In the next section, I will focus on a specifically disruptive formal aspect of his prose: autopoiesis and metonymic description. In harnessing metonymy's ability to put subjects and objects in contiguous and contingent relation, *The Overstory* resists conventional reading hierarchies.

2. Metonymy and Autopoiesis: Narrating Open Systems

The novel's insistence on the simultaneity of openness and closure means that it can be productively encountered through the frame of self-regulating or autopoietic systems. As Angela Allan suggests, "novels can tell readers a great deal about the systems they inhabit, making both strange and familiar worlds legible, just as systems thinking can inform the different ways novels can order those worlds." "What is more," she explains, "systems can tell readers about themselves: to recognize the reader as yet another input in system dynamics is to recognize that textual meaning is…essentially nonlinear. To read the system is to change the system" (421). This section begins by assessing some of the systems dynamics visible throughout *The Overstory,* moving from anthill autopoiesis to legal autopoiesis to the form of the metonym as a similarly "operationally closed system." This progression works in support of my broader point that the novel's obsession with autopoietic distinctions between "inside" and "outside," as well as "system" and "noise," allows it to self-consciously correct those who read trees as "outside"

the bounds of interpretation and character. In other words, its investment in systems thinking results in an intervention in the reading process. Metonymy, which troubles the boundaries between system and noise and serves to reveal the contingency of the extant, serves as a key figure in reorienting the process of interpretation.

First, a crash course in autopoiesis, Francisco Varela and Humberto Maturana's foundational concept in systems biology. An autopoietic system is a system that reproduces itself. As Bergthaller explains, this means "that it is what it is because it can distinguish between itself and its environment, between inside and outside" (43). The system, "as long as it persists, can refer to its environment only by simultaneously referring to itself, that is, by regenerating its own constitutive elements and thus continuing its autopoiesis." While technically open, "autopoetic systems can therefore be described as *operationally closed*" (43). A classic example of an autopoietic system, one invoked in the text of *The Overstory* itself, is an anthill. Ants are able to determine the shortest path between a food source and their nest by assessing the strength of pheromone trails left by other ants. Shorter paths are re-impregnated with scent more regularly, and so become more attractive, eventually prevailing in a "quasi-evolutionary competition between ant trails of different lengths" (Bergthaller 40). Collective maintenance work provides collective knowledge, winnowing down potential paths until the most efficient prevails.

As Powers puts it, in a moment focalized through young Adam, "nobody's in charge of the mass mobilization, that much seems clear. Yet they port the sticky food back into the nest in the most coordinated way. Plans in the absence of any planner. Paths in the absence of a surveyor" (54). Adam, caught up in "a tangled conga line of unreal beauty," spends the rest of the fall watching the ants. His ants are self-organizing, reacting to the "inside" information of

pheromone trails and ignoring the “outside” feedback of the rest of the environment. Agency is distributed, here, both on the level of syntax and content. As the ants scurry about their business, the anaphora of "in the absence" provides a formal echo of the patterns of ant-knowing—progress based on repetition enacted on a grammatical level. The planner and the surveyor, missing from the scene, are syntactically subordinated: pushed to sentence-end in deference to "plans and paths." Adam watches the logics of this system, both immersed in and categorically outside its machinations.

An older version of Adam also gets caught up in an autopoietic system, this time the judgment of the law. Law can be understood as autopoietic insofar as it operates according to a binary coding of legal and illegal. Just as the ants’ system of communication operates by discarding non-pheromonal signals as noise, legal communication similarly discards information from alternative discursive modes. The good/evil coding, for instance, while applicable to a discussion of moral systems, falls outside the logic of the legal, thus demonstrating its operational closure. When Adam is under house arrest, for instance, and gets lured outside by a giant piece of public art, his tracking device sounds an alarm. When he calls the tracking clerk to explain that his transgression was “an accident,” a “human failing,” the clerk explains that “reasons don’t matter. We’ll send force next time” (458). This verdict is an echo of the one that landed Adam under house arrest in the first place. In burning logging equipment he acted illegally, and his actions resulted in the immolation of a woman and the destruction of private property. The overarching moral framework—the landscape of ecological crisis, harm that might be judged imminent if only the legal timeframe worked on arboreal scales—was not relevant. Just as novels, for Latour, “disseminate the sources of actions in a way that the official philosophy available at their time is unable to follow,” here a novel’s articulation of action

exceeds the logic of the legal. Viewed from outside the legal discourse domain, in this case as a literary reader, the autopoietic functioning of the law starts to look less epistemologically authoritative. The legal logic of individual responsibility gets displaced with a systems model of agency and action, opening seemingly causal narrative structures to new forms of productive contingency.

This productive contingency might be best explained in the literary terms of tautology and paradox. As Cary Wolfe writes, autopoietic or "operationally closed" systems are paradoxical because of "the unity of difference between two sides of the distinction that anchors the systems code. For example, the first-order distinction between legal and illegal in the legal system is a product of the code's own self-reference—that is to say, the problem is that *both* sides of the distinction are instantiated by one side of the distinction (namely, the legal: hence the tautology 'legal is legal')" (15). But this tautology can be observed only by a second-order observer, an observer operating within another code, which must not acknowledge its paradoxical distinction if it is to use that distinction to maintain autopoiesis, and so on and so forth. What Wolfe finds interesting, here, is that "these constitutive paradoxes, far from hindering the autopoiesis of self-referential systems, in fact *force* their autopoiesis" (16). Rather than paradox threatening operationally closed systems and established orders—a premise that resonates with the promise of deconstruction—systems theory sees the paradoxes of self-reference to be productive or reconstructive.

In formally asking the reader to move between first-order and second-order observation of various scientific and cultural discourse domains, Powers encourages a form of attention that uses paradox to engage the speculative within the domain of realism. As systems theorist Niklas Luhmann writes,

> We need a concept of meaning as the simultaneous presentation…of actuality and possibility. . . The distinction actual/ possible is a form that "re-enters" itself. On one side of the distinction, the actual, the distinction actual/possible reappears; it is copied into itself. . .If we observe such a re-entry, we see a paradox. The re-entering distinction is the same, and it is not the same. But the paradox does not prevent the operations of the system. On the contrary, it is the condition of their possibility. (42)

I cite Luhmann at length here because his somewhat slippery frame seems to offer a model of formal attention that understands form as process, less a static shape than an iterative relation grounded in difference and multiplicity. As he argues more explicitly in *Art as a Social System*, "art can no longer be understood as an imitation of something that presumably exists along with and outside of art," but "to the extent that imitation is still possible, it now imitates the world's invisibility, a nature that can no longer be apprehended as whole…The paradox unique to art, which art creates and resolves, resides in the observability of the unobservable**"** (149). The realist novel succeeds in rendering the invisible visible, (or revealing the possible embedded in the actual) precisely because of its inevitable failure at total mimetic representation.

Metonymy in *The Overstory,* I'd suggest, is one of the most potent examples of this productive failure. Metonymy, or using the name of one thing to stand in for another with which it is associated, is a technology of attention. As a figure of speech, it is a form whereby objects become narrative agents. In so doing, to borrow a phrase from Bruno Latour, it directs "our attention to the common ground of agency" (8). "Far from trying to 'reconcile' or 'combine; nature and society," Latour explains, "the crucial political task, is on the contrary to distribute agency as far and in as differentiated a way as possible—until that is, we have thoroughly lost any relation between those two concepts of object and subject" (17). "Great" novels, he finds, do

just this: they “disseminate the sources of actions in a way that the official philosophy available at their time is unable to follow.” Often scenes that feel “realistic” do so precisely because of this dissemination—they represent a confusion of subject and object that aligns with lived experience but is not represented in philosophical understandings of agency. This redistribution has high stakes. Specifically, it ought to make clear the fact that “all agents share the same shape-changing destiny,” resulting in a coalitional approach to matters of shared concern (17). Here, in contrast to the line of argument detailed earlier this chapter, Latour points to realist fiction as sometimes collapsing and nuancing the subject/object divide instead of reifying it. "At the time of the Anthropocene," Latour continues, "with its utter confusion between objects and subjects, it is probable that the reading of Tolstoy would do a great deal of good for the geo-engineers" (9).

Yet against Latour’s rosy reading, it is not obvious that this redistribution of agency has any inherent ethical implications, let alone the potential for organized political resistance. As Hannes Bergthaller points out, “The realization that all matter has agency offers no more ethical guidance than the attribution of intrinsic value to all living beings—it merely begs the question how exactly, then, human value and agency are to be weighed on the onto-ethical scales” (38-39). If the bulk of the energy of new materialism has been expended on the “blurring of clear boundaries or distinctions between bodies, objects, and contexts,” (Coole and Frost 16) this becomes troubling in light of the fact that most forms of discourse need clear distinctions to function. This is especially true, for Bergthaller, “of those forms to which new materialist thought appeals most often when it proclaims its own transformative potential—namely ethical, legal, and political discourse. A lawsuit, for example, necessitates that at some point a sharp cut is made through the causative tissue of the world so as to apportion responsibility” (39). *The Overstory* explicitly thematizes the need for these kind of cuts by featuring an intellectual

property lawyer, an eco-terrorist on trial, and various mediations of the psychological mechanisms of climate change denial. Amid a network model of causation where non-human agents share in the work of narrative propulsion, it is largely in legal contexts that individual responsibility gets apportioned. The novel primarily frames ownership—of genes, of land, of one's decisions—as a form of necessary and artificial closure wrought by law. On the level of narrative form, however, it also invokes the need to resist this closure, frequently relying on the interpretive openness of metonymic association to cover swathes of historical time and map networks of material agencies.

Take, for instance, the moment early in the text when Powers explains the Hoel family history though an enumeration of the events that go *uncaptured* by the obsessive tree photography. "The photos," he writes, "hide everything:

> The twenties that do not roar for the Hoels. The Depression that costs them two hundred acres and sends half the family to Chicago. The radio shows that ruin two of Frank Jr.'s sons for farming. The Hoel death in the South Pacific and the two Hoel guilty survivals. The Deeres and Caterpillars parading through the tractor shed. The barn that burns to the ground one night to the scream of helpless animals….The cancers (breast, colon, lung), the heart disease, the degloving of a worker's fist in a grain auger…The countless chemicals with names like Rage, Roundup, Firestorm, the patented sees engineered to produce sterile seeds. (16)

Beginning with a failure of representation (the pictorial record that obscures "everything a human might call *the story*" (16)), the list goes on to leverage that failure to make the invisible visible. Where the lists I referenced in the first section tended to foreground the absence of narrative, here Powers deploys a form of metonymic list-making to explicit narrative ends.

Metonymy is used to condense great swathes of time and space. “Deeres and Caterpillars,” stand in for the industrialization of agriculture. “Rage, Roundup, and Firestorm” stand in for Monsanto and the inputs treadmill—they index the pernicious relation between capitalist development and American food systems. Even the items that do not specifically deploy brand names seem to work according to metonymic logics. “The Hoel death in the South Pacific,” stands in for WWII, the combination of geographic specificity and the list’s temporal logic triggering the historical association. If in the example of Patricia’s trees objects worked as narrative motors across space, here we have a metonymic invocation of object-agency for moving through time—from the twenties through WWII through contemporary plant genetics. Metonymic association provides a kind of continuity not predicated on complete articulation.

Metonymy, however, is a highly contingent rhetorical figure, and so I would concede from the outset that the above reading reflects my perhaps-idiosyncratic readerly tendencies. As Elaine Freedgood suggests, one of the reasons metonymy is critically understudied is that it is “both too weak and too strong: it tends towards the conventional, the obvious, the literal the material—it conjures of the real so successfully that its status as a trope seems to disappear.” Unlike metaphor, which generates surprising connections across disparate fields “metonymy is ham-fisted: it tells us what we already know by habit and convention” (*Ideas in Things* 12). Yet it is precisely this reliance on habitual reading practice that gives the metonym its opening force. Who is doing the associating? Where are they? What kind of emotional, intellectual, and contextual baggage do they bring to the endeavor? Because of the possibility for radically different interpretations, metonymy is “both routine and random, an invitation to cliché that comes packaged with the threat of contingency.” To the extent that metaphor and analogy map the relationships between vehicle and tenor or “source” and “target,” both comparative figures

provide something like representational closure. Metonymy, by contrast, operates on principles of contiguity and openness. In sum, Metonymy is a figure both constrained by routine existence within systems and constitutively open-ended.

Powers not only consistently deploys metonymy to access the broad spatiotemporal scales his narrative requires, he also works to encourage a specific form of metonymic reading. For both Freedgood and Pam Morris, metonymic reading, or reading that attends to the "inanimate" as a dynamizing force, entails a reevaluation of realism. In Freedgood's case, metonymic reading involves taking literary objects seriously—investigating them in terms of their own properties and histories as means of uncovering the imperial repressed, and the play of history beyond the novel's edges. While Freedgood does not situate herself directly in relation to new materialism, her attempts to disrupt received grammars of interpretation by prioritizing the ostensibly "inert" stuff of nineteenth-century fiction gestures toward a reading practice both attuned to lively matter and to the political necessity of such reattunement. Morris makes a similar move, following Latour to read objects as "gatherings," or "complex points of intersection of past and present meaning systems, economics, social relationships, identity and values" (27). Both approaches reject the Moretti-Ghosh line of thought that understands literary things as markers of the real. Reading with this kind of attention to "thick metonymy," recasts the relation between diegetic and extra-diegetic worlds into a relation of contiguity instead of reflection. Just as reading *The Overstory* in terms of its autopoietic systems draws attention to its simultaneous openness and closure, attending to its metonymic structures foregrounds both the contingency of interpretation and the porousness of the novel form.

The Overstory's realism might be best understood as "metonymic" along these lines. Powers explicitly describes objects as intersection points, encouraging a mode of attention that

moves across subjectivities as well as across time and space. When Douglas goes out to celebrate the planting of his fifty-thousandth tree, for example, he learns from a stranger in the bar that his labors are for naught. Those companies he plants for get "good-citizen" credits for every tree he places, allowing them to raise their annual allowable cut. He's "putting in babies so they can kill grandfathers," creating "monocrop blights…drive-through diners for happy insect pests" (186). Shaken, Douglas goes home to bed. When he wakes up he's "missed the complimentary continental breakfast by four hours," but a merciful hotel clerk sells him "an orange, a chocolate bar, and a cup of coffee, three priceless tree treasures that get him to the public library. Planting seedlings has done nothing but green light more colossal clear-cuts. It's dinnertime when Douggie accepts this fact beyond all doubt. He has eaten nothing all day since his three tree gifts. But the idea of eating again—ever—nauseates him" (187). Framing the orange, chocolate, and coffee as "tree treasures" returns them to the thickness of their origins. Instead of alienated objects, Douggie's makeshift breakfast becomes inscribed in a variant of "know-your-farmer" logic. These products came from something and somewhere, and in the textual context of monocrop blights and dead tree grandfathers, the ecological foundations of those supply chains appear under threat. Powers' thick metonymy puts this meal in contiguous relation to environmental crisis.

Sometimes Powers takes his thick metonymies even further, reaching into histories of colonialism and exploitation. When Dorothy reads to Ray discover a white pine in their backyard, for instance, she reads him a tale of the tree's history. "It's a story," Powers writes,

> to match any fiction: the well-wooded land, succumbing to prosperity. The light, soft, strong, dimensioned boards, sold back across the ocean as far away as Africa. The triangular profit making the infant country's fortune: lumber to the Guinea coast, black

> bodies to the Indies, sugar and rum back up to New England, with its stately mansions all built of eastern white pine. White pine framing out cities, making millions in sawmill fortunes, laying a bed of rails across the continent, building and pitching warships and whaling fleets that wander out of Brooklyn and New Bedford into the unmapped South Pacific, ships made of a thousand trees or more. (422)

This passage is a good example of Powers' challenge to normative grammars of interpretation. The trees, again are subjects and agents: "framing out cities," "making millions, "laying a bed of rails." In Powers' strong metonymic realism, the white pine in the Brinkman's yard is bound to the exploitative dynamics of triangle trade, the violence of whaling, the railroad as a tool of colonial expansion. Read generously, this might be one of the ways metonymy works as a figure of openness and possibility. By its accretionary logic, the kind of neat subject/object divides surmised to be perpetuated by the realist novel and to undergird ecological crisis, start to proliferate into networked chains.

But if we put this excerpt in conversation with the tree-treasure example, the metonymic structure starts to look far more conservative. Speaking of "tree gifts" occludes all the labor that the pine history attempts to expose—the work of the coffee and orange pickers, the trade agreements, the people who transported the products from the fields to Douggie's mouth. Because of the constraints of narrative (namely, representation must be selective) putting the breakfast products in explicit relation to their arboreal producers elides the human cost. The same goes for the subjectification of the pine planks. In this instance, the pine trees are building warships while "black bodies" are cargo objects. The occluded labor of the railway men and city builders and the depersonification of the enslaved people serves as a crucial reminder that metonymy is "ham fisted." Here, the dynamizing effect of Powers formulation relies on the

cultural habits of racist history and refusing to see the people doing maintenance labor, as well as the accustomed grammars of subject-verb syntax. If, as I mentioned earlier, part of the "attention-shifting" success of *The Overstory* lies in the way it strategically reflects extant hierarchies of value, this moment serves as a key reflection of a very real strain of American environmental activism—one that values trees above the nation's marginalized communities. A cynical take on Powers' success, then, is that he maintains the dominant hierarchies of value and merely moves trees up a few notches.

Still, one might claim that the novels' self-conscious negotiation of hierarchies of attention are intended to help readers to see more clearly the failures and ideological implications of moments like this. As Morris suggests, metonymic realism is not just the re-valorization of literary things, but a set of questions tuned to contiguity and openness: "Is the life-world of the novel constituted by a plurality of particular perspectives and continuities, rather than normative universalism, imposed uniformity and closure of identity? To what extent does the work train us to move across, and inhabit, first, second, and third person perspectives?" (28). *The Overstory,* for all its flaws, seems formally committed to the project of perspectival plurality. From its disorienting opening page, it plays with focalization. "First there was nothing," the text begins, "Then there was everything. Then, in a park above a western city after dusk, the air is raining messages. A woman sits on the ground, leaning against a pine…The tree is saying things, in words before words" (3). These trees continue to talk to this woman, invoking a deictic "you," that is capacious enough to hold the reader, too: "Your kind never sees us whole. You miss the half of it, and more. There's always as much below ground as above" (3). These italicized intervals of tree talk continue through the narrative, marking the border between "Roots," "Trunk," "Crown," and "Seeds."

Even when *The Overstory* is focalized through more conventional human characters, Powers' narration jumps restlessly across subjectivities. There are eight distinct character threads, and while many of them ultimately converge, the reader is still initially left with the feeling of reading a short story collection. Powers wanders around within these discrete narrative strands, generally occupying a position of classical detached omniscience, but jumping in and out of characters' heads and dictions when it suits him. When the Mas go camping and encounter a bear, for instance, Powers describes it standing on the lakeshore "wondering if today might be a good day for the swim." The bear looks at Mimi's mother in the water and "waits to see what the always insane species will do next." As Mimi's dad talks to him, cajoling, the bear "reconsiders his whole approach to the situation. Sadness percolates up in him. He sits and claws the air" (37-38). That night, at the new campsite, Mimi asks her dad about being afraid. "He laughs, embarrassed. 'Not my time yet, not my story.' The words chill her. How can he know his story, ahead of time? But she doesn't ask him that" (38). In a mélange typical of *The Overstory*'s narration, here Powers switches between free indirect discourse ("the always insane species" "How can he know his story, ahead of time?"), reported speech ("Not my time yet"), and omniscient third person ("Sadness percolates up in him"). The subtle inhabitation of multiple subjectivities, in addition to the finely braided narrative structure, means the text can be seen as "metonymic" in the sense of training the reader to inhabit a plurality of perspectives.

This perspectival proliferation is another moment where the realist mode opens out into speculative possibility. As Alex Woloch explains in *One vs. The Many*, the realist novel "is structurally destabilized not by too many details or colors or corners but by *too many people...*As the logic of social inclusiveness becomes increasingly central to the novel's form—with the development of eighteenth-century empiricism and nineteenth-century omniscient social

realism—this problem becomes more pressing" (19). Powers exacerbates this destabilization by explicitly including trees as minor characters, thus multiplying the scale of "the many." If flattened characters have always been crucial to novel worlds, and as a function of their flatness they tend to appear and reappear without remark, Powers' novel is not only aware of its potential "to shift narrative focus away from an established center, toward minor [human and non-human] characters," it also actively attempts to foreground that awareness for the readers. For Woloch, "the minor character rests in the shadow-space between narrative position and human personality: an implied human being who gets constricted into a delimited role, but who has enough resonance with a human being to make us aware of this constricted position as delimited" (40). *The Overstory's* deployment of trees-as-minor characters rehearses this dynamic with a difference. Powers' trees—Mimas, the fig that saves Douggie in Vietnam, the Ma's mulberry—exist in that aforementioned "shadow-space." On one level, their narrative constriction seems appropriate. Trees, after all, are primarily encountered as a background decoration, and so seem well suited to the "flat" depiction of minor roles. But on another, Powers is careful throughout the novel to emphasize the depth and dynamism of tree existence: their relational networks, constant motion, and sophisticated forms of conjecture. In this tension between the novel's arboreal pedagogy and the tree's constricted character space, Powers invites his readers to both recognize the delimited role novels apportion to flora, and start to imagine beyond them.

For Morris, this kind of exercise in "imagining beyond" and inhabiting plural perspectives begins to articulate “elements of realist utopian praxis within everyday life” (28). The focus on intersubjective contiguity serves to expose the possibility of already existing potential worlds within the present order of things, rejecting a correspondence notion of truth based on actualism in favor of “the unpredictable, unclosable nature of new emergences” (25). If

you'll forgive me for letting so much rest upon an encounter with a sad bear, I want to suggest that *The Overstory*'s inter-species subjectivity-switching contributes to its general investment in the inscription of the possible within the actual. The novel's metonymic realism, combined with destabilizing moments of metalepsis, make it available for the utopian imagination. If, for Jameson, this utopian element is most present in science fiction, where novels imagine new worlds and provide various scenarios that we might still have the power to choose from, I would argue with that realist novels maintain their own utopian power. While their alternate worlds announce themselves without the help of aliens and spaceships, in demonstrating the proliferating ontologies encoded within the "real," these novels provide powerful resources for imagining otherwise. Their simultaneous continuity with and difference from the extant enable the bridging of a bleak now and a speculative future.

3. Growing Speculative

According to *Speculate This!,* a collaborative manifesto on the power of creative imagining to combat the delimiting force of speculative finance, to affirm is to "live simultaneously in the virtual…and the partially actualized, rapidly mutating present." *The Overstory*, with its fluctuating relationship to history and to the category of the "real," is affirmative speculation in a similar sense. To make this case, this section first examines a specific instance of historical rupture and its relation to a fluctuating now. It then moves to an analysis of the novel's most notable intra-narrative rupture, Olivia's ambiguous relation to both the Brinkmans and the category of the "real." In Sam Jordison's negative *Guardian* review*,* he complains about these ruptures. "Huge chunks of the book don't properly fit," Jordison writes, "…Ray Brinkman and Dorothy Cazaly's story (concerning a divorce that is postponed when Ray has a stroke)…feels at odds with the main narrative. The closest they get to the central protest is

sometimes reading about it in newspapers." [8] Yet Jordison's complaint, to my mind, ultimately registers the productive failures of Powers' speculative project. *The Overstory* can be read as slightly sloppy realism—a failure to achieve narrative coherence. Or it can be read as an accurate portrait of a rapidly mutating and contingent present. Marching under the banner of "the real," Power smuggles in simultaneous otherwise.

In *The Overstory*, for instance, the narrative is littered with references to historical events. The Hoels suffer the great depression. Douglas fights in the Vietnam war. When we first encounter Olivia, she's heading back to her house at college at the close of the cold war: "Home. December 12, 1989. The Berlin Wall, coming down. From the Baltic to the Balkans, millions of oppressed people take to the winter streets. Her scraped-open ankle spills blood through the foyer. So what? She bends to press a dry Kleenex to her wound, stanching the flow. It stings like mad" (147). Dorothy feeds Ray one morning and "Seattle is at war. Something about the future of the world and all its wealth and property. The breakfast hosts, too, sound confused. Delegates from dozens of countries try to gather in a convention center; thousands of protesters refuse to let them" (382). These references might be read as part of the reality effect—a historical variant of a barometer signifying "real." But as Freedgood points out, reference, too, is a kind of rupture: "the reality effect created by the presence of Napoleon, of Nepal… in works of fiction ought to jolt us into an uncomfortable awareness of the impossibility of such multiple ontologies…in other words, it is metaleptic in that various ontological layers collapse or rupture into one another: the historical breaks into the fictional, an epigraph disturbs the text it is both inside and outside of, and the world in which the telling takes place interrupts the world of which we are being told" (*Worlds Enough* xvi). In *The Overstory*, Vietnam War and the Battle for Seattle

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[8] https://www.theguardian.com/books/2018/dec/18/how-could-the-overstory-be-considered-a-book-of-the-year-richard-powers

perform a similar dual function. Indexing the real and destabilizing the extradiegetic/diegetic boundary, these references combine with the text's intersubjective ethos to emphasize the speculative possibilities of the realist form.

This destabilizing simultaneity is partially achieved through Powers' consistent use of the present tense. Present tense narration, though sometimes maligned as the stuff of writing workshops and aspirational edginess, can yield a sense of immediacy. In the case of Powers, the combination of this immediacy with moments of historical reference serves to create a thick and unstable present. As Irmtraud Huber suggests, "in contemporary fiction…retrospective present-tense narration is often used consistently, without any referentially unmotivated tense switching" (39). This consistency makes it mostly unobtrusive, except for the way that the impossibility of simultaneous experience and narration heightens the sense of fictionality: the third person narration must come from a place outside of time. Therefore, if "past-tense narration seems to suggest that a past that has happened is made present in the experience of reading, present-tense narration immediately suggests the fictionality of the past it presents" (53). Powers' consistent present thus allows him to have his cake and eat it, too. The coherent temporal relation mostly lets the mimetic illusion remain in place, while its implicit logical failures highlight the ontological oddity of narrative voices, thus opening the text into the realm of the speculative.

This choice of tense works in tandem with Powers' preference for metonymic description. Metonymy, following Kenneth Burke, is the "prized figure for/of the present because it is the name of the tropological operation of reduction by which consequential historical and cultural...lived differences are leveled or effaced altogether" (Beisecker 420). In its connective and simultaneous logic, metonymy performs the expansive work of reaching through space and time even as it reduces that expanse into the closed space of a word or phrase. Powers' present

tense narration does comparable paradoxical work. Reading in the present tense produces the sensation that something is happening now, a heightened reality effect that gets countered with the obvious knowledge that that thing is not happening to you. This goes double for present-tense narration of historical events. The grammatical suggestion of the contemporary moment sits in uncomfortable tension with readerly knowledge of historical progression. "Here and now" gets bound to "then and there" in a mode which both accurately evokes the palimpsest of lived time in relation to historical time and challenges the representational stability of the realist form.

To take this out of the realm of the abstract, let's look at another moment where ˆ*The Overstory* coincides with a fixed point in American history. When Adam stumbles across Douggie in Zuccotti park, for instance, the narration goes like this:

> Douglas nods, fingering the brim. A group of tourists ring the sidewalk in front of them around a wild animal. It's huge, muscular, charging, nostrils flared, with long wicked horns ready to gore the throng ringing it and taking selfies. Seven thousand pounds of bronze guerrilla art, tucked in by its maker in the dead of night and left on the stoop of the stock exchange as a gift to the public. When the city tried to haul it away, people objected. The Trojan Bull. A few short weeks ago, a ballerina riding the beast bareback in mid-pirouette became the stunning poster child of the latest stop the Humans movement:
>
> WHAT IS OUR ONE DEMAND? #OCCUPYWALLSTREET BRING TENT. (429-430)

On the most basic level, this moment creates a mild cognitive dissonance. Occupy Wall Street, the reader might remember, happened in 2011. Even absent the specific date, many would have a sense that this happened recently but not too recently—that it's a news event from several years back. Taken in conjunction with Powers' present tense (Douglas nods, tourists ring), we have the kind of instability that often escapes notice in realist novels. This is happening now. And this has

already happened. The collapsed temporality, here, pushes what appears to be straightforward realism into the realm of the speculative.

A more rigorous attention to historical detail just heightens this instability. In this passage, Powers is referring to artist Arturo Di Modica, who in 1989 snuck a metal bull sculpture onto the doorstep of the New York Stock exchange. The bull, long a symbol of aggressive financial optimism and prosperity, thus embeds another sense of the speculative—the calculated risk of speculative finance. And this symbolism, in turn, is what allowed the sculpture to play a key role in the 2011 protests, beginning with the image described above of the ballerina "riding the beast bareback." As Kalle Lasn, the cofounder of the Canadian magazine *Adbusters,* explained to *Vanity Fair* in 2012, "We put together a poster for the July issue of Adbusters. The poster was a ballerina—an absolutely still ballerina—poised in a Zen-ish kind of way on top of this dynamic bull. And below it had the hashtag #OccupyWallStreet. Above, it said, 'What is our one demand?'[9]" Powers copies this text almost exactly, but renders it in the font that has been consistently associated with Nick's guerrilla signage.

This kind of historical reference can be read as an instance of both continuity and rupture. For Freedgood, coopting the historical specifics of Occupy Wall Street might be part of the realist novel's structure of complicity. The rupture between the historical record and the novel's diegetic space is a moment we "use to establish multiple worlds in which to imagine the fictional and the referential." It is something that "gives us a kind of imminent and eminent domain over a reality that we get to construct according to our individualized, or apparently individualized needs" (*Worlds Enough* 102-103). Ruptures in fiction's speculative world—the not-quite-right intrusion of the historical record— simultaneously perpetuate the ecologically dangerous illusion

[9] https://designobserver.com/feature/the-poster-that-launched-a-movement-or-not/32588

of individual control and the fantasy of escape to other worlds. If there are other worlds, and the reader can move between them at will, the psychological urgency of climate action gets diffused. Yet given the referential content of this scene (a protest against the injustices of capitalism and its ties to ecological crisis), the illusion of escape seems awfully fragile. In a textual moment where speculative finance, metaleptic rupture, ecological uncertainty, and generic instability coincide, the overwhelming sense is one of fraught continuity. There might be another world at play, here, but in its porous relationship to the problems of our own, there is little sense of escape. Powers' productive failure to both fully represent and fully break from the extant world foregrounds the contingent nature of the livable present.

If this sense of contingency emerges through the novel's relation to historical reference, it becomes even clearer in the ongoing ambiguities of Olivia's storyline. For one thing, the first time we encounter Olivia she seems to come back from the dead. High and just out of the shower, she "reaches up into the shade of the floor lamp to shut it off and plunge herself into delicious darkness. But as her damp hand pats for the switch on the cheap socket, all the current in the sub-code house enters her limb and pours into her body." As she lies there, "naked, wet, convulsing," she "manages to birth up one ambiguous croak before her heart stops," and then "the whole house dims" and she dies (152). Olivia is dead for a minute and ten seconds before her body falls off the bed and the impact restarts her heart. Her recently ex-husband comes over, finds her comatose on the floor, and rushes her to the hospital. She sneaks out upon waking, and apparently makes a fully recovery.

A full recovery, that is, with the added bonus of hearing voices. "For the first time, she realizes *being alone* is a contradiction in terms. Even in a body's most private moments, something else joins in. Someone spoke to her when she was dead…the presences—the only

thing to call them—removed her blinders and let her look *through"* (159). These presences proceed to tell Olivia to leave her insurance class and drive, that she'll be driving for a long time, that she has been "spared from death to do the most important thing" (163). In the parking lot of a warehouse store they "infuse her again." The presences "speak no words out loud. Nothing so crude as that. They aren't even *they*. They're part of her, kin in some way that isn't yet clear. Emissaries of creation" (163). These emissaries stay with Olivia throughout the novel, guiding her to Nick, to the free bioregion of Cascadia, to her work as an activist and tree-sitter. Like her improbable death and resuscitation, they sit somewhere on the edge of the possible: Powers, after all, is overtly concerned with different forms of being in the world, with the way bodily experience changes modes of perception. Perhaps Olivia is hearing voices, and perhaps this all has a logical explanation that has something to do with brain currents.

But perhaps not. As Douglas and Adam continue their conversation in Zuccotti park they seriously entertain the possibilities. "Do you think anything was really talking to her?" Douglas asks, "Or was she just…?" Adam, psychology professor that he is, gets interested. "What did the dead Joan of Arc hear? Insight or delusion. Next week he'll tell his undergrads about Durkheim, Foucault, crypto-normativity: how *reason* is just another weapon of control…[he] casts a look behind them, down the concrete canyon of Beaver Street. Beavers: the creatures whose pelts built this city. The original Manhattan exchange. He hears himself answer, 'Trees used to talk to people all the time. Sane people used to hear them'" (432). Against the specter of brain damage—one that gains extra force from the novel's general preoccupation with disability—talking trees, or at least listening trees, get raised as an equally plausible explanation. In a muted attempt to represent the material violence of speculative finance, here the literal streets of the financial district are shown to rest on the corpses of small mammals. In another moment of

redistributed agency, human labor gets elided (pelts, not men, build the city). Adam, too, seems to be not entirely the agent of his own speech ("he hears himself answer"). And again, the indigenous people displaced along with the beavers are left completely off the page. The critique I raised in the last section—that Powers' environmental project performs a particularly race-blind attentive and agentive redistribution—reappears.

But the other thing that strikes me about this passage is its lively sense of contingency. While "contingency" is often used in popular discourse as a synonym for chance, in the realm of philosophy it describes quite precisely "the exclusion of both necessity and impossibility from a proposition" (Lupton 1173). Contingency, in this sense, explicitly refers to something that already is while making it apparent that it need not have been so. Looking down the "concrete canyon" of Beaver Street, contemplating the time before it was quite so cavernous and concrete, the Adam-focalized description accesses both the "might be" of talking to trees and the "might have been otherwise" of specific historical progressions. The financial district recognizably exists in diegetic and extradiegetic space. But without the beaver pelts (and by metonymic extension: the fervent colonial desire for fur hats and the resulting trade network) this particular bit of coastal North America might have looked different. As Lupton explains, "we live in sense-making systems that generate the experience of contingency, soliciting our resignation to the world while simultaneously alerting us to its current state not being inevitable" (1174). Reading the realist novel with an eye to its contingency—a method that entails paying special attention to rhetorical devices like metalepsis and metonymy—helps expose the ways the genre's quality of "givenness" also opens into possibility.

Olivia, again, provides the most compelling example here. Not only does her narrative begin with a clear might-have-been-otherwise (she dies and comes back to life) and continue

with a foot in the realm of the might be (she's guided by possible tree voices), the givenness of her existence is also thrown into question by her relationship to Dorothy and Ray. We first encounter these characters' relation in the table of contents page. There, it seems straightforward. Ray Brinkman and Dorothy Cazaly's narrative begins on page 64. Olivia Vandergriff's story starts on page 145. We never learn her parents' first names, but it seems safe to assume at least one of them is also a Vandergriff.

Yet the apparent separation between the Brinkman-Cazalys and Olivia starts to fall apart almost as soon as Olivia appears on the scene. Olivia tells Davy, her eventual ex-husband, that her "father was a human rights lawyer…not entirely false," and that her "mother was a writer, which was pretty much bullshit, though based on a fact-like scenario" (149). She's not ashamed of her parents, but "in the world of satisfying stories—her preferred domain—both of Olivia's parents are so much less than they should have been" (149). Later in that first segment, Powers reveals that Olivia's dad used to tell her that a "named apple is a patentable apple," an example of his steadfast belief that "protecting intellectual property creates wealth" (162). This is the first in a series of echoes that barely register on first reading but start to emerge with more clarity on subsequent passes through the novel. Olivia's dad, like Ray, appears to be an intellectual property rights lawyer. Her mom is "not a writer," though that claim would have a "fact-like" element, a vagary that would certainly apply to Dorothy's stenographic employment. In itself, this might just be sloppy writing. Ok, so there are two intellectual property lawyers. Maybe Powers is being heavy-handed about Monsanto again or something.

Taken in conjunction with Ray and Dorothy's speculative narration, however, these professional coincidences start to look less accidental. Like Olivia, Ray's own brush with death is accompanied by an epiphany. As he struggles for vision at the beginning of his stroke he

thinks, "with what is still a coherent thought: *I've been a man who happily confuses the agreed-on for the actual. A man who has never doubted that life has a meaningful future. Now that's done"* (310). After the stroke, Ray is mostly paralyzed and Dorothy cares for him—care work that eventually involves investigating backyard flora with dichotomous keys and reading Tolstoy novels or Patricia's *The Secret Forest*. As "they sit together in the evening, reading and looking…every baring twig seems to Dorothy like a trial creature, apart from but part of all the others. She sees in the chestnut's branching the several speculative paths of a lived life, all the people she might have been, the ones she could or will yet be, in worlds spreading out just alongside this one" (443). Ray seems to be in a similar speculative mindset. "Paper cup," he says. "Seedling. On the Windowsill." Dorothy is confused, initially disturbed, but then she understands: "He's entertaining her, turning Things as They Are into something better. Telling her a story, in return for the years of stories she has read to him. *Planted it. The Chestnut. Our Daughter"(*444). The trees exist in their stories as objects even as they model the narrative form. This, again, is a moment of tree figurality, a stuplime embedding of the tree *as* and *of* life.

But given its location in a realist novel, specifically a novel's subplot wherein the two characters spend a lot of time negotiating the various merits of nonfiction and character-driven fiction, it also serves to draw attention to Power's own contingency-heavy engagement with the realist form. As David Wellbery points out, "contingency is always a selection, an actualization that draws on a reservoir of other, non-actualized possibilities…without this selection there would be no events to concatenate in narrative series." Narrative closure, in other words, "the givenness" that serves as the foundation for so many critiques of the realist form, is also highly contingent. Contingency is thus both "that which can never be narratively appropriated" and the thing "without which narrative could not be" (Wellbery 250). This understanding of the

contingent, in Christina Lupton's key formulation, makes narrative closure the site of its relationship to possibility. In the specific context of *The Overstory,* the formal constraints of the realist mode are precisely what lends Powers' text its opening force. In carefully mirroring extant hierarchies of information only to suggest that that value system might need shifting, Powers' mimetic closure opens out into the might-be-otherwise.

This principle operates most visibly in the passages following Dorothy and Ray. Ray initially confused "the agreed-on for the actual," or put in terms that recall the discussion of legal autopoiesis in section one: law is law because it's law. By the novel's end, however, he understands law as the "agreed upon," not a total system of value. He is both aware of the radical instability of Things as They Are and concerned with narratively "turning Things as They Are into something better." Dorothy, too, is busy seeing life as a series of branching possibilities. When she first uses the dichotomous key to identify her backyard trees, she recognizes the "splitting and choosing" of the book's form: "*Are the needles evergreen and arranged in sheathed bundles of two to five needles each? If yes, go to…"* (420). To Dorothy, the book is "like the law, those cases she transcribed during all those years when she played a court stenographer: the evidence, the cross-examinations, messy negotiations and manufactured facts, the path narrowing in on a sole allowable verdict" (420). Yet if legal proceedings and dichotomous keys are designed to produce a verdict (illegal/legal, Eastern white pine/Not Eastern White Pine), Powers' novel is concerned with the ways multiple possibilities can coexist. Recalling Latour's suggestion that geo-engineers would benefit from the portrait of distributed agency found in Tolstoy, Dorothy and Ray's varied diet of *Anna Karenina,* legalese and popular biology yields a sophisticated understanding of object potentials. Just as Dorothy looks at her backyard chestnut and sees in its branching "the several speculative paths of a lived life," Powers

structures his narrative in a speculative register.

For instance: the moment when Dorothy and Ray collaboratively narrate the life of their might-have-been daughter productively unsettles the novel's operative realism. Sometime after that first description of a child planting a tree in a paper cup, Dorothy asks Ray to "'tell me more about her.' Her heart pumps harder at the taboo question. All her life she has flirted with craziness, and still this new winter game of theirs feels worse than scary." "Moves fast," he answers, "Will-fed…Fierce, Fine. You."

> It's enough to get her back into the book, and the yard opens like two pages spread in front of her. Tonight, in the growing darkness, the story runs in reverse. A succession of girls, younger and younger, head out the back door and into the miniature, simulated world. Their daughter at twenty, on spring break from college, in a sleeveless tank top that reveals a horrible new baroque tattoo on her left shoulder, sneaking out to smoke a joint after her parents have fallen asleep… the image appears against the shadowy trees… It's so vivid that Dorothy is sure she's seen some model for it somewhere. This is how read-aloud goes now, the two of them holding still and watching. Who knows what the life-long stranger in her house is ever thinking? She does, now. Something like this. Something exactly like this. (459)

The "baroque tattoo on her left shoulder" stands out here, echoing, as it does, the "florid tattoo on her scapula" when we first meet Olivia in college (150), and the moment when she is sleeping close to Nick and her pajama top slips off, "revealing a tattoo across her scapula, in florid script: *a change is gonna come'"*(217). Sneaking out for joints sounds like Olivia, too, seeing as her college experience is described as consistently cannibinoidal. But the real clincher, for me at least, is a moment at the very end of the novel, when Ray and Dorothy let their yard and

imaginations run wild. “She’s a good girl, you know,” Dorothy tells Ray—her present tense an echo of Powers' own narratorial form. “She was just lost for a little while. All she needs to do is find herself. Find a cause. Something bigger than she is” (470). The second part of Olivia’s narrative is the story of finding that cause, her untimely death a sacrifice for that “bigger” thing. The intellectual property, the body modification, the need for epiphany: it all contributes to the ambiguity of Olivia's ontological status.

Still, as in the case of Olivia’s trip through death and her subsequent spectral voices, Powers leaves space for a realist interpretation. The counterfactual daughter is so vivid that Dorothy is sure she’s “seen some model…somewhere.” It is possible, after all, that Ray and Dorothy saw Olivia on television at some point. One morning as Ray sits in front of the TV, he watches as a “crowd surges and splits, lashes out and regroups. A phalanx of riot shields beats them back….The cameras linger on something remarkable in the throng: a herd of wild animals. Antlers, whiskers, tusks, and flapping ears, elaborate masks on the heads of kids in hoodies and bomber jackets. The creatures die, fall to the pavement, and rise again, as if in some Sierra Club snuff film” (328). As he watches, a “memory steals into Ray’s altered head. He shuts his eyes from the pain of it. He recognizes the animal masks, the painted leotards... He has seen them, in something like a photograph. He knows that can’t be, but facts don’t erase the uncanny feel” (328). These animals sound remarkably similar to the ones in a protest we know Olivia led, one where she was a dressed as a cougar and her creaturely companions emerged from coffins blocking a main road. This similarity both serves to clarify and complicate the Brinkman/Vandergriff relationship. On one hand, here is something like evidence that Olivia’s crew had enough airtime to plausibly lodge her in a TV watcher’s subconscious. On the other, said TV watcher reacts to this moment with a deep sense of the uncanny—a sense that he has

seen them “in something like a photograph,” and this familiarity is enough to cause him pain. In this ambivalence, Powers encourages interpretative processes that rely on openness rather than closure.

4. Metatextual Modeling

The ambivalent speculative dynamics of Powers’ world complicates what can seem like an overly earnest attempt at didacticism. In the passage I’ve just been on about, “a succession of girls, younger and younger, head out the back door and into the miniature, simulated world.” Just as Mimi and Patricia served as characterological analogues for modes of attention the novel deploys on a metatextual scale, here Powers simultaneously invokes his own writerly project and the model-work of Neelay and Dorothy. Dorothy and Ray, in this sequence, have moved past the need for language. “Holding still and watching,” they co-create a simulation, one both recognizable in its basic contents and unsettling insofar as it renders the preceding narrative indeterminate. Their simulated world also serves as a call-back to Neelay, a computer programmer obsessed with building an ever-improving virtual realm. Neelay sends his team memos about verisimilitude, calling for “*more realism…More life!…Let’s build this place up in every detail, from stuff* out there*. Real savannas, real temperate forests, real wetlands.”* In a follow-up that seems to recall Powers’ own aesthetic philosophy, Neelay enjoins, “*The Van Eyck Brothers painted 75 different kinds of identifiable plant species into the Ghent Altarpiece. I want to be able to count 750 kinds of simulated plants in Mastery 7, each with its own behaviors…”* (277). Neelay, like Powers, is building a world-system out of a conjunction of "if: thens." Both the novel and the game simultaneously evoke the illusion of representative plenitude and the inevitable narrowing of possibility that comes with narrative progression.

But for all Neelay, down to his obsessive tree-preoccupation, seems like an embedded

Powers figure, the novel articulates a deep skepticism about the effects of his modeling project. Neelay's imagined world starts out as a relatively simple open-source platform for exploration, but it quickly morphs into a landscape of conquest and exploitation. Players are obsessed, "hiring Chinese inmates with web connections to level up their character while they sleep" (411), and Neelay's company has been so successful that he's the "sixty-third richest man in Santa-Clara County" (414). His team all earn "six figures; most are millionaires" (410). The game has progressed from iterative version releases to a system of constant updates, a continuously evolving virtual world with over seven million players. But Neelay is frustrated. His game, he thinks, has something rotten at its core, "no endgame, just a stagnant pyramiding scheme. Endless, pointless prosperity" (410). Neelay suggests adding an atmosphere, a water quality variable, the opportunity to make decisions that run the model-earth to ecological ruin or preserve it. But his team shut him down. "Complex adaptive system. A god game that has escaped its god. It's clear to him: the massively parallel online experience will go on, faithful to the tyranny of the place it pretends to escape" (414). On some level Neelay's project approaches the utopian mode of affirmative speculation: a desire to live "simultaneously in the virtual…a future unsettled from the present" and the "rapidly mutating present." But his speculation, in its final hour, gets excavated of utopian promise: it merely mimics the firmative logics of its Silicon Valley home.

To an extent, *The Overstory* performs a similar function. In supporting the fantasy that there are multiple worlds, and that we might inhabit them simultaneously, the novel might encourage disregarding shared worldly humanity. Following Johannes Fabian, ideas about modernity allow us to imagine that some primitive 'others' live in a distinct historical moment from those who inhabit the contemporary world. The diegetic space and temporal progression of

narrative, held in relation to extra-diegetic reading contexts, models one form of this simultaneity and separation. As Freedgood continues, "imagining that we can live in our own worlds is a high-stakes denial of what Gayatri Spivak has described as our common planetarity" (*Worlds Enough* xv). If the idea of multiple, separable worlds provides enabling fantasies of the "archaic other," it also offers infrastructure for denying shared vulnerability in the coming climate crisis. Insofar as the effects of climate change will likely be felt in intensities directly correlated to a given subject's class and race position, there is some truth to this fantasy of separation. What I want to draw attention to, here, however, is the way that this argument renders even the most realist fictions complicit in the oft-critiqued "just terraform Mars!" line of environmental thought. Narrative's worlding power means even realist attempts to represent the Earths' climatological challenges might inevitably support the form of denial that manifests as "We'll just go somewhere else."

Yet given the arguments I've made so far about the instabilities of realism generally, and Powers' realism specifically, I want to suggest that the book also works contrary to the logics of escapism and separability. In fact, the metonymic chains and metaleptic ruptures help readers to understand this novel as embedded in the world, an embedding that helps to carry the shifted hierarchy of noticing past the scene of reading. What I mean by this seemingly equivocal ending (the novel enables escapism/ the novel also changes your relation to the world around you; the novel is complicit in reinforcing extant social hierarchies/ the novel models new socialities) is that novels like this one are conditional goods. Conditional goods, following Joshua Landy, exist somewhere between the objectively indispensable and the objectively superfluous. Like a blueprint for a supercomputer, which is of value only *if* legible, *if* the necessary materials are available, *if* someone's around who has the technical expertise to assemble the parts, literature's

value is conditional. "In order to matter, plays and poems and stories need a little help from us; they are…neither automatically futile (as the cultural-capital brigade would have us believe) nor automatically beneficial (as the moral improvement brigade would have us believe), but instead something whose importance depends in part on our involvement" (48). At the beginning of this chapter, I asked about the political value of a text that produces a (limited, differentially experienced) change in ecological attention. What I'm suggesting here, and what I will continue suggest throughout this dissertation is: it depends.

Coming down on contingency, however, does not negate the capacity to analyze the specific potentialities of any given text. Rather, it helps move past the binary of utility vs. *l'art pour l'art* and opens space for a "positive, reasonable, and pluralist understanding of literature's effects, such as clarification, training, formal modeling, and reconnection to affect" (Landy 55). *The Overstory* is neither automatically futile nor necessarily an ideological tool of colonialist expansion. It is also not an instrument of moral improvement, a bracing whack across the face with a tree branch that causes readers to change their gas-guzzling ways. What it does, and what it does with remarkable effectiveness, is challenge the norms of reading realist fiction. In its stuplime arboreal recitations, its thick metonymic chains, and its staged paradoxical relation between openness and closure, *The Overstory* models a form of realism in constant interchange with the extra-diegetic world. At the level of content, characters learning how to see and narrate their environments provide a simultaneous analogue for the readerly experience. The problems of reference and rupture—history bleeding into fiction bleeding into fantasy—mean these lessons more easily traverse the boundaries of the "closed" space of Powers' narrative.

In the next chapter I'll take the method generated here to a new text, one with significantly fewer trees and significantly more foxes. Reading Aminatta Forna's *Happiness* with

an eye to metonymy and energy systems, I’ll continue to develop the case for description’s dynamizing force.

CHAPTER TWO

Actual, Possible, Edible: Metabolic Description in Aminatta Forna's *Happiness*

Happiness, Aminatta Forna's 2018 novel of grief and globalization, is notable in part because of its investment in disciplinary description. It follows two primary characters: Jean, a recently divorced American wildlife biologist who's moved to London to study urban ecology, and Atilla, a Ghanaian trauma psychologist who's come to the city to keynote an academic conference. Jean and Atilla meet by chance—running into each other on the street—and Atilla soon recruits Jean to help search for Tano, his close friend's missing son. As the two conduct their parallel searches, they reckon with their mutual attraction. They also recruit a band of helpers in the form of London's doormen, garbage men, and street performers. What results is a hybrid tale: part nature writing, part will-they-or-won't-they romance plot, and part fantasy of cosmopolitan subject-hood. Yet for some—particularly those readers professionally mired in the debates of literary criticism—*Happiness* might register most powerfully as an allegorical rendering of contemporary method wars. In staging a run-in between a trauma psychologist and a wildlife biologist, Forna's novel could be read as a meta-fictional exploration of the right balance between scientific description and psychological interpretation.

If we follow this thought experiment a little further, it appears that *Happiness* comes down firmly on the side of description. This is in part because Atilla has reached a stage in his career where he is suspicious of the pathologizing gaze of his fellows and the diagnostic temptations of psychological depth. But it is primarily because most of the narration is aligned with Jean's uniquely ethological form of attention. As Jean roams around London musing on its ecological histories and noting the urban plants, she often relays her findings in luxurious detail. Curious about the history of her favorite London cemetery, for instance, Jean learns that it was

locked up after the First World War and "left to die." Instead, it thrived: "Saplings sprang up, prying open graves, toppling obelisks and urns, knocking angels from their pedestals. Snowdrops burst from the soil in winter…Moss greened the gravestones, ivy curled around pillars" (49). Dead bodies and the institutional "death" or closure of the cemetery become the catalyst for vibrant growth, the vibrancy emphasized by the urgency of Forna's verbs. The plants in this dead cemetery "spring," and "pry" and "topple." In this instance, *Happiness's* descriptions are decidedly dynamic: emphasizing the energy and motion of locations (a winter cemetery) that more commonly index stillness.

This dynamism is doubly notable because it is achieved through description, a mode traditionally associated with pause or stasis. In his classic essay, "Narrate or Describe?," Georg Lukács accuses description of rendering characters and readers mere "components of still lives" (139). Gérard Genette gets at something similar, defining narratological stasis as "when narrative discourse continues while historical time is at a standstill, usually in order to take care of a description" (126). This association of description with stillness is even more pronounced when the object under observation is the natural environment. As Elizabeth Hope Chang explains, "the history of the realist novel's narrative development premised itself from the outset on an endemically representative and silent setting," and so the moments "a narrative pauses to regard a plant, whether potato, oak, or orchid, have often been seen as gaps or breaks from regular narrative work" (3, 9). Amy King puts this more bluntly: "narrative natural history," she writes, "places an absolute value on observation rather than narrative momentum: it values dilatoriness or stasis over event" (462). *Happiness,* I want to suggest, challenges the notion that descriptive observation—even the observation of the mundane and the "natural"—entails a cessation of narrative movement. If Powers' excursions into nature description courted boredom to serve as

metafictional reflections on anthropocentric hierarchies of attention, Forna seems intent on making description a mode of lively—even troubling—interest. In emphasizing the shifting relations of material objects generally rendered subordinate to character psychology, Forna's description emphasizes the uncertainties and contingencies of everyday life.

This is particularly true in the case of what I am calling "metabolic description," or the novel's exacting attention to processes that circumscribe and invigorate a text's living bodies. Forna's descriptive investment in the ingestion, disintegration, and excretion of matter heightens the sense of contingency that accompanies the state of mere existence. In what might be called an "anti-individualist materialism," the bodies, organisms, and environments in her book seem precarious—dependent upon each other, ontologically unstable, and almost improbable in their functioning. As Heather Houser suggests, description is a "tool for suturing extratextual matter, perception, and language," and so there is a certain logic to the coincidence of the renewed critical interest in description and the new materialist turn (13). Though contemporary fiction "does not necessarily have thematic investments in lively matter" it "describes imagined worlds in a manner that corresponds to new materialist recognition of the liveliness of things" (Houser 14). In "honoring matter's elusiveness…the writer abandons the mimetic impulse and yet achieves a mimetic effect: she registers the potentialities of matter" (Houser 14). Forna's metabolic description, lingering as it does over decomposing bodies and photosynthesizing plants, draws attention to the material contingency of daily life. As it follows the energy flows of consumption and growth, it consequently dynamizes the representation of the given, locating narrative energy in what is conventionally read as filler.

In this chapter I propose that Forna's descriptive dynamism means that *Happiness* has something valuable to add to the evolving conversation in the energy humanities. First, following

Roman Bartosch's recent claim that "analysis of the energy of stories must indeed precede analysis of stories of energy," *Happiness* provides a useful case study in the formal mechanisms that power a novel's moves through time and space. By "energy of stories," here, Bartosch refers to narratives' " expressive force rather than the mere representation of…energy systems in fiction" (121). As Imre Szeman suggests, "it does very little to point to the presence of fossil fuels in fiction, to go searching about for those few places where coal, gas or oil might resurface, receive mention or be extracted from the narrative. What we need instead is a new critical sensibility in our analyses of world literature…that permits us to understand how every social practice, cultural form, and political expression is animated by…energetic capacities" (286). *Happiness,* like many contemporary novels, might be said to be animated by petroculture's structuring absence[10]. But its interest for my purposes lies less in the specter of extraction, and more in a structuring presence: the way its descriptions of energetic exchange themselves power narrative motion.

Happiness is thus relevant to the energy humanities in its provocation to rethink conventional accounts of the energy of stories and its insistence on considering what energy means beyond oil. As Christopher F. Jones points out, energy humanities in its current iteration might be said to suffer from "petromyopia," or the "over-privileging of petroleum accompanied by the relative understudy of other energy topics" (1). This is concerning, he continues, because

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[10] As Szeman suggests, understanding "the modern as a petrocultural era" means "we need always to be attuned to the complex ways in which energy surplus narrates, shapes and circumscribes our various modes of existence" (285). Szeman continues: "It is for this reason that adding oil to our analyses is not a choice, but a necessity, and why the energy humanities must not merely foreground oil, coal, electricity, nuclear, etc., but rather the dispositions, expectations, capacities and desires that energy excess makes possible. The horizon of the capitalist world-system, then, is what world energy literature has to concern itself with—much more than with any simple or direct mapping of energy type to literary form" (285). All of which to say: novels set in the contemporary era are petrocultural whether they directly engage questions of fossil fuel extraction or not.

it risks both reifying the power of oil over our lives, and underemphasizing the diversity of sources currently fueling the world. *Happiness,* for its part, primarily emphasizes the energetic capacity of food. While food "represents only a tiny fraction of energy use for those in developed nations," for much of human history, human and animal muscles provided the bulk of power, "making food calories a foundational source of energy" (Jones 7). I offer this novel as a productive addition to energy humanities discourse in part because it sits in direct contrast to the contours of the oil imaginary. "Oil," Jennifer Wenzel explains, "is everywhere and nowhere" ("How to Read" 156). It both enables the functioning of everyday life and is rarely registered in cultural production, a paradox Amitav Ghosh cites in his now-canonical diagnosis of the paucity of petrofiction.[11] Food, like oil, enables the continuity of everyday life in its most basic sense. Unlike oil, however, it is abundant in novelistic contexts. Instead of what Wenzel calls "the temporal and material mindfuck of oil" ("Taking Stock" 31), food is imminently understandable: this is a potato, this is a sandwich. Edible objects are used to ground readerly imaginations.
So if oil is an "absent presence" in contemporary world literature, constantly discussed in criticism but rarely manifest in novelistic objects, food might be termed a "present absence." It is everywhere in literature—and crucial to the maintenance of human life—but comparatively unstudied by energy critics.

In part through its focus on food, this chapter attempts to bring the concept of metabolic description into the conversation about literary energies. In the first section, I examine Forna's commitment to ethological or "thin" description, a prose style that might seem to condemn *Happiness* to merely representing the actual. Upon closer analysis, however, the novel's

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[11] See Amitav Ghosh's "Petrofiction: The Oil Encounter and the Novel." *Incendiary Circumstances: A Chronicle of the Turmoil of Our Times*, Houghton Mifflin, 2005, pp. 138–51

expansive treatment of spatio-temporal systems actually occurs most often by way of this close empirical attention. Through defamiliarizing descriptions of the human and metonymically disruptive object-landscapes, Forna's text provides the imaginative tissue for engaging alternate models of London's past and future. These models suggest that realist description can serve as a dynamizing—not just dilatory—narrative force. The second section makes the case that metabolic description is particularly dynamic: not only does *Happiness* map energy flows along circuits of consumption, it also destabilizes the ontological boundaries between the eaters and the eaten. Section three takes up this question of porous subject-hood, suggesting that these digestive descriptions oppose the plot-level endorsement of liberal pluralism. The final section expands on the political stakes of this anti-individualist materialism, weighing critiques of resilience discourse against Forna's case for the importance of maintenance labor.

1. Ethology and Descriptive Expansion

Happiness's two main characters offer distinct disciplinary endorsements of the value of abstaining—at least initially—from symptomatic interpretation. For all that Atilla's livelihood rests on his ability to plumb psychological depths, by the time he appears in *Happiness* he is deeply suspicious of the pathologizing gaze of his colleagues. Listening to the first speaker on the *Responses to Adverse Life Events* panel, Atilla questions the premise that the trauma victim experiences a corruption of "the core experiences of the world we hold true" (227). "Who did [the speaker] mean by 'we?' he wonders, "'We' in this hall or we in Stanford? Or 'we' wearing $600 suits?" Some of Atilla's criticism, to be sure, rests in the abiding eurocentrism of the trauma studies discipline—the notion that prior to the traumatic event "we" understand the world as essentially certain is one that fails to account for the lived experiences of a large proportion of the world's population. But there is also a sense that Attila is frustrated with his colleagues for

not paying attention, for being so consumed with their explanatory frameworks that they fail to really see. As a medical student, for instance, Atilla's mentor performed an experiment wherein he expressed concern about one of his student's mental health to the rest of the class. The fellow in question had a persistent sniffle, and after a week the other students handed in their diagnoses to the professor. "An anxiety disorder was the most frequent diagnosis, with psychotic features (the fugue type wandering). Between the seventeen members of the class they recommended a light cocktail of antidepressant and antipsychotic drugs" (230). Atilla, however, wasn't fooled. When the prof handed back his diagnosis—"hay fever"—he shook his hand. Insofar as Atilla receives praise for "seeing what's there" as opposed to yielding to the diagnostic temptation of the latent, this moment looks an awful lot like a repudiation of symptomatic criticism.

Jean's perspective also serves to endorse surface level visual description. When we first meet Jean, she is sitting on her London roof and looking for foxes. She sees a vixen and watches it stop, raise its head, and slip "sideways from the wall into the overgrown buddleia" (17). The description of Jean herself works in a parallel objective register: After briefly turning her attention to a green parakeet, "Jean put the camera down, sipped her coffee and recorded the sighting of the fox in a spiral-bound notebook. She turned back the pages and totaled the number of sightings of the light bright vixen" (17). We don't learn Jean's motivations, her feelings, or her plans for the future. We do learn about her observable actions. This primarily empirical, surface-level description might be best understood as "ethological."

Ethology, first popularized in the current sense of the term by Nikolaas Tinbergen in 1950, seeks to predict future animal behavior by way of close observation and subsequent interpretation. The key tool for this process is the ethogram, "a time budget of the various activities" in which an animal or species engages (Ristau 132). Ethograms were distinct from the

work of naturalists like Charles Darwin or Jean-Henri Fabre because of their insistence on specialized syntax. Instead of using ordinary action words like "see" and "feel," which tend to have some association with subjective experience, early ethologists like Konrad Lorenz talked about animals' "specialized escape and defense reaction" or "innate releasing mechanism." In these mechanistic locutions, researchers sidestepped questions of phenomenology in favor of material causation (qtd. In Herman 216). Yet as Jussi Parikka explains, although the early phases of animal ethology did yield relatively mechanistic understandings of the relationship between bodies and milieus, contemporary ethological perspectives lead us "to evaluate bodies not according to their innate, morphological essences, but as expressions of certain movements, sensations, and interactions with their environments. These are always intensive potentials, not pre-determined qualities, which underlines an experimental empiricism" (xxv). In other words, the commitment to close empirical observation has remained, but contemporary ethology is more concerned with potential dynamic relations than linear chains of cause and effect.

It is in this latter form that ethology plugs in to contemporary debates around critical method and the politics of description. As suggested earlier, description has been a relatively unfashionable topic in literary criticism, not least because it is often seen as inherently conservative. Close observation of the extant world, George Levine explains, runs the risk of "metaphysical complicity with things as they are" (4). Or as Nathan Hensley puts it in a more explicitly damning articulation of contemporary methods, models like distant reading and surface reading that "borrow their authority from the sciences" forgo the feather-ruffling 'critic as hero' model and instead transfer power to an external object world. In "deferring uncritically to objects," these methods ensure a "reiterative, even positivistic relationship to items under observation, since any merely descriptive method must perforce narrate in other terms what

already is" (63). When Hensley talks about "perforce reiteration," or Levine worries about "metaphysical complicity," both scholars engage in the humanist tendency to posit an improbably neutral understanding of description.[12] Yes, a truly neutral description might bleed troublingly into positivism. But description is inevitably inflected by perspective, intuition, values, and prior knowledge. Even in its barest, more objective forms—and sometimes especially in those—it has the power to unsettle the sense of the given. *Happiness'* ethological description works in tandem with its plot-level endorsement of "seeing what's there" to suggest the dynamic potential of objective attention.

Throughout the novel, Forna consistently depicts the complex systems of interaction between organisms and environments while maintaining a distancing or surface-level gaze. The description of the psychology conference, for instance, sounds almost like an Animal Planet voice-over about watching academics in their natural habitat: "Atilla shouldered open the tall oak doors, stepped inside and took a seat in the back row. Kathleen Branagan in the same row leaned forward until she was in his eyeline. Atilla touched his fingers to his forehead. He raised his right buttock and pulled free the flyer beneath, which gave the order of papers to be presented for the day" (Forna 227). Atilla, described primarily in discrete body parts (shoulder, fingers, buttock) is portrayed as moving through space and interacting with his fellows without his observable gestures being given cultural context. While not precisely in the ethological register of "specialized-escape-and-release-mechanism," Forna's language has a similar distancing effect. It's not that Kathleen leaned forward to say hello to her colleague, she "occupies his eyeline" and he "touches his head." It's not that Atilla wanted to see what was going on, or was curious about

[12] For more on this see Sharon Marcus, "Erich Auerbach's *Mimesis* and the value of Scale," 304-305.

the speaker, or was uncomfortably seated, it's just: "he raised his right buttock and pulled free the flyer." Here is a version of empirical description that begins to gesture towards its disruptive potential: with the distancing gaze of the merely observable, human behavior gets defamiliarized.

Forna's description doesn't just make the familiar motions of everyday life unfamiliar, she also lets static objects work disruptively without immediately harnessing them into figurative service. There are often collections of things in *Happiness* that work metonymically, harboring lively chains of associations even as the text remains purely in the descriptive mode. When Attila visits Quell, for instance, he looks around the room assessing its ambiance. "Every surface was covered with objects. Framed photographs by the score. A lacquered box. A pen on the display stand. China figurines. The cut-glass decanter Quell was at that moment holding. Medals and trophies awarded by the governments of various nations. A snow globe, a cheap souvenir, struck a discordant note among so much good taste" (206). In a similar vein, there's the description of the installation artwork made from objects plucked from the Thames at low tide, findings "displayed in a cabinet of curiosities inside the new gallery. Plastic toys, oyster shells, clay pipes, buttons, rusted chains, more than one letter in a bottle, false teeth, bricks, hobnail boots, bottles and fragments of glass, and the bones of horses. Rib bones, femur, scapula, fragments of the skull, whole jawbones. The fractured skeletons of animals that had once worked the city, pulling carts, carriages and bags, consigned to the waters of the river" (185). Both these object-lists are notable for their curation—they are gathered according to an organizing principle of taste or provenance. And as Hensley suggests, curation, especially when it comes to aesthetics, is a process worthy of suspicion. Curators of culture are often "guardians of the status quo whose political interest in reproducing dominant regimes of value finds voice in a discourse of appreciation, a burnishing of the already-there" (Hensley 64). A curatorial reading or writing

practice, in this sense, is “neutered of its ability to disrupt conceptually its source material,” inevitably confined to a “cozy relation to the given” (65). These object lists, read in the tradition of mimetic realism, might work as exercises in selective appreciation of the extant.

But Forna’s descriptive curation, like Powers’ object descriptions in the realist tradition, uses metonymic association to significantly more destabilizing effect. Her empirical gaze describes things at their surfaces even as those things work to disrupt stable categories of object-hood. Quell’s living room decor, encountered in the context of his work in international conflict zones, metonymically indexes middle class comfort (the density of tchotchkes) and the violence of colonialism (lacquered boxes, old medals). The objects dredged from the Thames exceed their categories even more readily; Forna’s gesture to the accumulated body parts of working animals allows the curiosity cabinet to serve as connective tissue for imagining London’s past ecologies of multi-species labor. In a return to Bartosch’s call to attend to the “energy of stories,” here we find the literal energy history of animal workers inscribed and described in seemingly inert objects. This description, in turn, becomes a formal key to the novel’s own energetic expansion: seeing what’s there becomes the first step toward seeing what was and what might be. This is less an instance of deferring uncritically to objects and more an example of the way curated objects themselves prove critical to denaturalizing the given.

I see this energetic expansion as resisting the body of theory that understands the realist novel as fundamentally limited in scope. In *The Great Derangement,* for instance, Ghosh describes the scalar resistance that the Anthropocene presents to the techniques of literary fiction. “Its essence,” he writes, climate change “consists of phenomena that were long ago expelled from the territory of the novel—forces of unthinkable magnitude that create unbearably intimate connections over vast gaps in time and space” (63). “Within the mansion of serious fiction,”

according to Ghosh, "no one will speak of how the continents were created; nor will they refer to the passage of thousands of years: connections and events on this scale appear not just unlikely but also absurd within the delimited horizon of a novel" (61). Timothy Morton makes an even more extreme version of this argument, suggesting that climate change and other "hyperobjects" are not just unrepresentable in literary fiction but are effectively "invisible" to humans for long stretches of time. Hyperobjects, for Morton, are "things that are massively distributed in time and space relative to humans." They are both "viscous" in the sense that they "'stick' to beings that are involved with them," and "nonlocal" in the sense that any 'local manifestation of a hyperobject is not directly the hyperobject" (1). A measurement of rising sea-levels taken in the Bay of Fundy, to put this in concrete terms, is not climate change. Climate change's extended temporality renders it essentially incompatible with human phenomenological experience.

But novels have been reckoning with stuff outside of the scope of lived experience for a long time. The fundamental question, David Herman offers, might be recast in the following, more familiar, terms: "What strategies have humans developed to accommodate, in the domain of lived experience, structures and processes that exceed the size limits of the lifeworld as we know it—size limits that have both temporal and spatial dimensions?" (258). While stories might be "grounded in and adapted to a human-scale lifeworld," Herman continues, "storytelling practices furnish means for negotiating the differences of scale introduced by phenomena beyond the scope of the human" (258). Herman, in other words, challenges Ghosh's assertion that novels cannot reckon with temporalities of "unthinkable magnitude." Certain types of novels invested in multi-scale narration, in fact, might address the challenges posed by Morton's hyperobjects. Through manipulations of narrative time, allegorical laddering, and the cross-mapping of trait codes associated with story-world agents, narratives become technologies of representation

suited to precisely this problematic.

Forna's novel expands through time via the relatively subtle material histories of collected objects, but it also achieves this through much more explicit speculative biology. In an instance of ethological description attuned to the "might be," Jean and Osman walk through London talking about *I am Legend* and imagining the city "given back to nature." "First thing," she says, "the water level would rise. The drains would get all blocked up, nobody to work the pumps that stop the sewers and the subway from filling up with water, nobody to man those huge flood barriers. One big surge would likely breach the riverbanks" (131). Jean gets temporarily distracted by a Chinese ailanthus, keeps walking, considers the possibility of a return to biodiversity. "But maybe that wouldn't happen," she continues to herself, "maybe England would become a mass of Japanese knotweed and giant hogweed with tree of heaven forests." Then she turns to Osman again. "You know, when Trafalgar Square was excavated one hundred and fifty years ago they found an ancient riverbed and it had hippo bones in it. There was evidence of elephants and lions. Hyenas. Hippos once wallowed in Trafalgar Square" (132). Embedded within a conversation in the diegetic now, Forna layers a speculative future upon a surprising past. She uses shared cultural objects (a Will Smith movie) and proximal visual objects (ailanthus trees) to catalyze multi-temporal imaginings. As Jean and Osman traverse London's streets and move toward the intimacy of friendship, they are also wrapped in an intimacy with other times and places. Wallowing hippos, geographically associated with the African Savannah, get inscribed within the indexical heart of London, a spatial collapse that works in tandem with the post-human imaginings to disrupt the bounds between the possible and the actual.

This kind of spatio-temporal dynamism rendered by what appeared to be relatively

straightforward description is even clearer in the repeated references to the Greenhampton wolfer. *Happiness* begins with a section called, "The Last Wolf," explicitly marked as taking place in "Greenhampton, MA. April 1834" (Forna 1). The wolfer meditates on the history of the landscape around him, noting that "fathers and grandfathers had cleared the rocky soil of New England, had felled trees and then hitched mules to tree stumps and heaved each stump loose, had sunk wells and built walls around their farms. Now the sons of these men were handing the land back to nature and heading west to the plains, where a man could stand in one spot and turn around and see nothing but open space in every direction" (1). In a preemptive echo of Jean's imagining, this wolfer describes a "return to nature," one that would be eventually erased by the urbanization of the northeast United States. But more to the point, the novel's repeated returns to the 1830's drastically expand the narrative's reach—an instance of the external analepsis that Herman sees as providing the "conceptual scaffolding for movements back" into stories that exceed "the size limits of human-scale lifeworlds" (264). The regular interjection of scenes of historical wolfing and their parallels to Jean's current work means the description of her quotidian labors becomes dynamically unsettled in place and time. The labor she does to maintain her lifestyle—the familiar rhythms of tracking and camping and note-taking, become vertiginous reminders of more-than-human energetic histories.

In a flashback to 2004, for instance, rendered in the same italicized font as the scenes of nineteenth-century Greenhampton, Jean describes her attempts to trap a coyote so she might shoot it with a tranquilizer dart and attach a radio collar. Jean, much like the wolfer one hundred and seventy years prior, is repeatedly frustrated. She and the wolfer both spend nights huddled against the chill of the New England winter, both bait their traps with tempting morsels, and both encounter the wolf in a moment of sudden violence. Given these similarities and the continuity

of formatting, when Jean finishes her dinner of canned hot dogs and looks at how the moon "lit the snow-covered branches of the trees, cast sharp shadows on the scorched snow and highlighted the shape of the drifts and dunes," it's hard not to dwell on the possibility she's on the same land we encountered forty pages and one hundred years earlier (44). Rooted in place, Forna uses the contours of the landscape to move through narrative time.

2. Metabolic Description: The Dynamism of Dinner

If *Happiness'* ethological attention serves to both defamiliarize familiar patterns of behavior and detach familiar objects from fixed points in time, its moments of specifically metabolic description help move the novel through space. One of Forna's most common techniques for diegetic expansion is close attention to the everyday practice of cooking and eating. As Jean digests her hotdogs while doing field research, for example, she thinks about "how on Saturdays Ray liked to cook curry." She imagines him "thirty miles away in their Greenhampton kitchen, a ball game playing on the old portable TV in the kitchen while he grated ginger, ate poppadoms and rummaged through the cupboards looking for the containers of cumin and coriander and fenugreek among the ketchup, French's and Folgers" (45). The expansion, here, works on two levels. Most overtly, by marking the scene of dinner preparation as "thirty miles away," Forna's narrative does not just follow two separate character tracks but begins to articulate the distance and terrain between them. Instead of the confined space of her tent in the woods, we begin to see the tent as precisely located in larger space, thirty miles from the domestic labor of Jean's family life. Second, and less overtly, Ray's culinary cosmopolitanism suggests a wider spatial expansion. As Jean eats canned hotdogs, an American dinner if there ever was one, Ray hunts among the markers of American foodways for curry ingredients, a dish not attached to specific nation but instead to multiple and hybrid culinary traditions. On

Saturdays, Ray eats curry—a dish not from "here." His domestic "hunting," narratively juxtaposed with the violence of wolfing and Jean's coyote-tracking efforts, becomes a toothless echo of the violence of colonial expansion. Thirty miles from the woods and hundreds of miles from the origins of poppadoms, Ray's domestic space gets inscribed within geohistorical circuits of trade and environmental degradation.

Forna also uses a version of this consumption-centric technique to great effect in her depictions of the urban space of London. I quote at length, here, because the full passage is necessary to demonstrate the combination of multi-species attention and energy circuits that expands the narrative space. It begins with a what seems to be a relatively standard description of a young child at a restaurant on the top floor of a high rise, her nose pressed against the glass. "To the young girl," Forna writes, "…everything about the city was new."

> Right now she was watching a bird. To the child the bird looked like a sky diver, falling through the air with outstretched arms: wings spread, beak down, feet angled backwards, its feathered body shivered and shook against the wind, flight feathers rippled. Once or twice a wing dipped as if the bird was a tightrope walker who had momentarily lost and regained balance, now the bird was lifted on a thermal and set back again seconds later. The child blinked and watched. She did not try and tell her parents. She stood as still as the hovering bird…Six hundred feet below a pigeon departed the world. The pigeon, which had been pecking at the discarded crust of a pasty from the West Cornwall Pasty Company booth by platform six in the station, was flying away with a piece of pastry in its beak when it was hit at two hundred miles an hour by the falcon and promptly fell to earth, to be snatched back up in the raptors claws a split second later. The falcon carried the pigeon eastwards, parallel to the riverbank, over the city's municipal buildings in the

> direction of Tower Bridge, where it turned south…The falcon flew until it arrived at the abandoned gas works on the Old Kent Road where it perched a metal strut and with its beak tore open the pigeon's heart. (86-87)

As in the example with Roy, several forms of expansion are taking place here. The child's parents are sitting "among the ruins of afternoon tea," the quotidian labor of feeding oneself again serving as the hinge for an expansion of diegetic space (85). This time, however, we have an expansion working along multiple axes. The tea-taking family is on the "thirty-second floor of the building known as the shard," a height that allows their daughter to look in a reasonably straight line at the falcon riding currents of air (85). But from this airy perch we're suddenly plunged downward with the falcon's attack, "six hundred feet below" to a pigeon who'd just snagged a bite of pasty.[13] From there, the trajectory of expansion becomes horizontal again, as we follow the Falcon and pigeon east, "parallel to the riverbank, over the city's municipal buildings in the direction of the Tower Bridge, where it turned South." The bird flies until it reaches the abandoned gasworks on Old Kent Road, where it perches on a strut and opens the pigeon's heart—an action that sends a single drop of blood down (the vertical axis again) to where Atilla is standing with Jean.

In this section, Forna maps urban space in a way that maintains a sense of its dynamism and multi-dimensionality. While, as Amy King suggests, "description [can become] dilatory" and even serve to halt forward narrative motion, Forna's description emphasizes the more dynamic pleasures of flow (465). Forna's ethological description of the falcon, initially mediated through the gaze of the young girl before the bird flies free of her attention, does initially seem to

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[13] A pasty, incidentally, explicitly marked as coming from the West Cornwall Pasty Company, a name that has its own ties to geographic locality. The company's status as the "UK's largest pasty operator" and its 50+ sites (some, of course, in London) mean that the brand itself inscribes its own spatial consolidation and expansion. See: http://westcornwallpasty.co.uk/cornish-soul

arrest the forward movement of the plot. We learn nothing about Jean and Atilla, our primary characters, in this moment. But instead of a narrative pause, one gets a sense of the active subplot, the brief drama of pigeon death and falcon dinner emphasizing the lively energy flows of the urban landscape. *Happiness,* here, gestures towards formal strategies for moving through continuous space. Where Amitav Ghosh understands fictional settings as "constructed out of discontinuities" and inevitably disconnected from the outside world, Forna stylistically encourages a mode of material attention that challenges the illusions of a bounded space (59). As her writerly gaze moves from subject to subject, there is a parallel sense of material interchange: by virtue of metabolic conversion, pasty becomes pigeon becomes falcon. Description, here, serves to emphasize the dynamism of continuity and challenge a version of the world where "what is" remains stable.

3. Urban Metabolism and Anti-Individualist Materialism

It's not incidental, I think, that observable contents of the world are thrust into dynamic relation primarily through chains of consumption. As Erik Swyngedouw suggests, in contrast to "other fashionable metaphors that attempt to fuse together heterogeneous entities—like networks, assemblages, rhizomes, imbroglios, collectives," metabolism conveys "a sense of flow, process, change, transformation and dynamism in addition to the 'inner-connectedness' suggested by the other tropes" (22). This section, building on Swyngedow's suggestion and the preceding discussion of metabolic description, reads *Happiness'* ecological assemblages together with metabolism's conceptual legacy. Foregrounding metabolic exchange, I argue, reveals an anti-individualist materialism that challenges the novel's fantasy of liberal cosmopolitanism—a fantasy intimately bound to contemporary oil imaginaries.

The novel's vision of liberal utopian pluralism[14] is most apparent at the level of plot. Forna tells a story of London as a cosmopolitan city, a place where multi-national bonds of romance and friendship flourish, and where each person develops their individual skill set toward a vibrant collective whole. Finding Tano, for instance, is accomplished by the collaboration of a professionally and nationally varied group of individuals: American Jean uses her understanding of animal behavior to predict Tano's movements, Ghanaian Atilla uses his knowledge of the human psyche, Nigerian Olu uses the experience and infrastructure from his security job. In their successful endeavor we might see a John Stuart Mill-style "faith in the ideal of self-development,"—a model of "individual fulfilment" and "harmonious diversity" that Amanda Anderson cites as liberalism's conventional markers (3). In the popular press, this conventional liberalism is something of a selling point. As David Schuman writes, "*Happiness*'s globalist worldview will reassure its readership—its heroes are the American expat, the doctor without borders, a plucky group of runaway-finding immigrants, and a skulk of scrappy, charmingly-named foxes using strategies of assimilation and camouflage to make a life for themselves in a world they never made. Its villains are rigid immigration laws, a right-wing radio host, and local bureaucrats" (*Kenyon Review Online*). For the right audience, there is something pleasurable about a realist novel that envisions a form of copacetic globalization.

But this liberal fantasy, as scholars in the energy humanities have thoroughly established, is closely tied to the oil imaginary. As Dipesh Chakrabarty notes, "The mansion of modern freedoms stands on an ever-expanding base of fossil fuel use. Most of our freedoms are energy intensive" (208). The basic tenets of liberal political philosophy—individual fulfillment,

[14] Thanks to Christina Fogarasi for pointing out *Happiness*'s tendencies toward liberal utopianism in a conversation early on.

economic expansion, harmonious diversity—were imagined in the context of consistently growing energy resources. Mark Simpson criticizes this framing as one of "lubricity," what he calls the vision of a "frictionless world contingent on the continued, intensifying use of petro-carbons from underexploited reserves in north America." Simpson critiques "lubricity" as contributing to the "contemporary mobility regime that, idealizing smooth flow, mystifies so as to maximize the violent asymmetries of movement and circulation globally" (289). If *Happiness* sometimes participates in this vision of lubricity—Atilla slips effortlessly across the globe under the banner of diplomacy and glides around Southern England in a Jaguar—it also sometimes registers friction. Much of the context for Atilla's London excursion is provided through flashbacks to his work in the 2009 conflict in Iraq, and the violence of these scenes recalls the persistent rhetorical slight-of-hand whereby the promise of democracy obscures the true motives of extraction. *Happiness,* to the extent that it evokes oil as an absent present, puts petroleum in vexed but intimate relation to liberalism. For all the implicit violence of the oil encounter, the promise of the self-actualized individual (the diplomat, the president, the successful immigrant) remains.

The food in Forna's novel sometimes works to reinforce this image of individuals as cosmopolitan consumers. Ray's curry, Jean's hotdogs and bulgar salads, Tano's maple syrup at a hotel breakfast, and Jean and Atilla's dinner at an Ethiopian restaurant all collectively contribute to the text's self-conscious cosmopolitanism. The edible, here, beyond serving as descriptive filler or a marker of the real, becomes a convenient shorthand for the bounties of globalization: diverse characters eat diverse foodstuffs and are collectively nourished. But just as Forna insisted on material links to accompany the chain of attention in the falcon passage above, her deployment of literary foodstuffs does not rest in the realm of the merely indexical. It signifies

spatial expansion, yes, but it is most often spatial expansion linked to specific bodies and places. This means the novel resists the dematerialized version of "global" that—among other things—allows energy to appear as commodity without consequence.

In a scene early in the text, for instance, when Jean is returning from one of their first attempts to hunt for Tano, the narrative suddenly cuts to "three miles distant," where a "dog fox crossed Waterloo Bridge." In its jaws, the fox has "the bone of a Berkshire pork chop, the remainder of which rested, along with the side order of sautéed mushrooms, the Dorset crab starter and a quantity of decent claret, in the belly of a fund manager now headed due west in the back of a cab" (96). The fox, unaware of the westward motion of the rest of the pork chop, climbs the "stairs to the open terraces of the National Theatre" until it reaches the third level, jumps on one of the raised flower beds, and buries the bone (96). As with the pasty from the "West Cornwall Pasty Company," here we have a cluster of reasonably proximate provenances—the Dorset crab, the Berkshire pig. We also have a loose equivalent to the falcon "flying eastwards," this time the fund manager headed "due west" in the back of the cab. Like Jean thinking about her husband "thirty miles distant," this time we know she's "three miles" from the scene of fox and its bone. Taken together, these details create a zooming out effect—they perform a pedagogy of attention that asks the reader to mentally link multiple places, and keep in mind the violence of consumption. Jean, the fox, and the fund manager are occupying separate spaces. And more than occupying, they are *moving* through these spaces. Instead of mapping a static global network, Forna's unique descriptive attention creates a dynamic landscape attached to mobile observers.

These observers are rendered doubly mobile through Forna's metabolic description. Instead of allowing the taxonomy of characters to remain stable (fund manager, fox) the attention

to digestion opens up space for ontological connection. The narrative style here draws attention to the identity transfer at the heart of eating—the way crab and pork for dinner entails making an animal into oneself. Describing the pork and claret in the belly serves as a graphic reminder of the death and disintegration that undergird the maintenance of life, and the porosity of bodily existence. In highlighting these aspects, I follow a growing body of work that takes food as a prime exemplar of new materialist theories, and, consequently, as a challenge to standard formations of the liberal subject. As Lisa Heldke and Raymond Boisvert explain in *Philosophers at Table,* "all formulations that begin with single, separate, auto-sufficient entities, formulations quite common in the standard philosophical context, are out of bounds for a perspective that takes the stomach seriously" (170). Considering consumption in any rigorous way requires acknowledging bodily vulnerability and the fluid boundaries between organism and environment.[15]

For this reason, while relatively unaddressed in energy humanities contexts, food and eating provide consistent case studies for new materialist scholarship. According to Jane Bennet, for instance, "enhanced alertness to edible matter can contribute to a theory of vital materiality" (40). For Stacy Alaimo, "trans-corporeality," or the understanding that the human is ultimately inseparable from the environment, might be best explained through eating. The clear transformation of animal and plant to human flesh, for Alaimo, provides a "route through person and place" even as it challenges those categories as discrete entities. Food, then, provides a

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[15] Working more directly in the field of literary criticism Maria Christou makes a similar point, suggesting that while the "historical, geographical [and] national" implications of literary food stuffs are widely acknowledged, the ontological implications are less frequently addressed (7). The very banality of the phrase "you are what you eat," she argues, has prevented scholars from plumbing the depths of questions like "what can eating tell us about being?" and these are questions worth considering (2).

useful illustration for new materialism's conceptual infrastructure of connectivity, assemblage, and mesh. It is rhetorically useful for both its straightforward materiality and ontological mutability. But where it proves most relevant to the discourses of energy humanities—and, to my mind, where it becomes most powerful as a political analytic—is in the context of metabolism.

Metabolism and energy, as Cara New Dagget points out, both arose as concepts in the 1840s, and were conceptually twined from the start. "One of the so-called discoverers of energy, the German doctor Julius von Mayer, even arrived at the notion of the conservation of energy through a metabolic (and imperial) approach, observing sailor's blood on a Dutch colonial ship and hypothesizing that human bodies required less oxygen to maintain blood heat in the tropics" (115). Metabolism, from the Greek for "change," foregrounded the way "the overriding stability of organisms relied on constant chemical and physical changes" (116). Metabolic description, to put this fact in the more specific context of the essay at hand, performs a parallel function: it both represents the continuity of the given, and exposes the dynamic energy exchanges that enable that continuity. Crucially, however, metabolism as a historicized concept does not enable this exchange to occur without friction—it is "always already about bodies and their survival" (839). Following Alexander Wehiliye's argument that, contra paradigms of liberalism, "suffering and enfleshment [are] integral to humanity" (14), and that humanity is "hungered into being" (136), focusing on metabolism offers a framework for a more embodied energy imaginary. *Happiness*'s relentless scenes of eating provide a counter-discourse to the fossil-fueled liberal vision that obscures the material frictions of consumption.

To the extent that we meet both Atilla and Jean as eating bodies, their character descriptions become sites of co-dependence and relationality. When *Happiness* first introduces Atilla, for instance, he is characterized in terms of appetite. A "man so tall" he appears "to be

wading through the crowd," Atilla is in a reverie about the "boiled beef *Tafelspitz* and chopped-chicken salad" at his dinner reservation to come (11). At the theater he has a gin and tonic and orders a vanilla ice cream at intermission, and then, "driven by hunger," he hurries back across the bridge to the restaurant (12). Once seated in his preferred seat by the kitchen door (so as to better observe the waiters and their burdens of dishes), he orders "calf's liver and bacon because both of these things were hard to come by where he lived, and the potted brown shrimps because these, too, were a rare treat." He completes his meal with a carafe of rioja and a "caramel and chocolate pudding, the chocolate sponge dusted with icing sugar" (13). Hunger sated for the time being, Atilla leaves the restaurant, tracing the skyline with his forefinger in the moonlight, in his mind "already planning the breakfast he would order in the hotel dining room" (14). Atilla, here, is initially rendered in terms almost curiously material. He is very, very tall and he is very, very hungry. This emphasis on Atilla's need for metabolic maintenance continues throughout the text. After a concert the next day, Atilla finds himself again in search of dinner. For him, "hunger and impatience were conjoined twins," and after remarking "Food!" aloud to himself, he speeds to a Brazilian restaurant where he orders *salchichas, higado* and *falda* too*"* (34). Once there, he asks the waiter to put on the CD he just acquired at the concert, and the sound of the singer's voice fills the restaurant. "This," writes Forna, "was Attila at his happiest" (34). Gesturing toward the intimate linkage between emotional state and material conditions (or, put more colloquially, toward the reality of hanger), Forna emphasizes corporeal vulnerability. A key component of happiness, before any of the more sophisticated psychological considerations, is having enough to eat.

This concern with the simple necessity of food extends through Forna's depiction of Jean, though in her case relieving hunger is much less explicitly tied to pleasure. When Jean finishes

the first consultation on her client's urban garden, she suddenly realizes she hasn't eaten all day. To remedy this, she acts efficiently. Jean, Forna writes, "found a sushi and salad bar, chose a tub of bulgar salad from the section in the refrigerated cabinet and paid. Back outside she walked and ate using the plastic fork. At the end of the street she passed a trash can and threw the tub away" (21). Where Atilla is pleasurably anticipating breakfast as soon as he finishes dinner, Jean is largely uninterested in what she's eating next. This does shift a little over the course of the novel, but what does not change is that, interested or no, Jean also needs to eat. Later on, feeding Tano his first peanut butter and banana sandwich, Jean remembers how her father used to make that same dish for her as a child, "its creation a fine art: the banana, overripe by a day, smooth peanut butter, wonder bread." Musing over having forgotten the combination's pleasures, Jean remembers how her father "had told her that a diet of sardines, spinach, and something else, she forgot what, contained every nutrient the human body required...living alone again…she had begun to exist on almost as pared down a diet" (218). Hunger drives Atilla over the bridge. It bores Jean, yet she has to heed it anyway.[16]

Throughout the novel, Forna's descriptive metabolics serve to teach a form of attention that sees this bodily necessity alongside and athwart food's metonymic and reality-marking functions. As she tracks hunger and satiation, the violence of falcon-hunting and the dispersal of

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[16] It might be tempting, here, to read Jean's re-discovery of the joys of peanut butter & bananas alongside her budding relationship with Atilla, sexual possibility and gustatory pleasure accompanying the slow shift from the solo to the social. On one reading, her newly expanded menu might be cast as a reward for moving towards the socially-sanctioned norm of heterosexual coupledom. But given Jean's pleasure in her solitude, and her general orientation towards the factual and the functional, one gets the sense that her efficient bulgar-munching was not without its satisfaction. The thing I want to emphasize, then, is less the shifting social contexts of consumption (we see Jean and Atilla eating Ethiopian food together, Jean and Tano eating popcorn, the whole rescue crew eating meat skewers) than the way Forna has consistently marked its necessity.

leftovers from a fund manager's supper, food becomes a circulating energy resource as opposed to a kind of realist decoration. This notion of food-as-energy is further emphasized by its consistent juxtaposition with London's more conventional material flows. As Jean and Atilla walk along the river front thinking about Tano, for instance, Jean stares at the "faces of children in the crowds, visiting London with their families." The river beside them smells of "dead trees and diesel," and as they pass a row of food stands, "the smell of sausage and caramel peanuts [mingles] with the dark scent of the river" (116). Several scales of metabolism are suggested here. There is the familiar, individual scale that I've emphasized thus far—Jean and Atilla, hunger roused by the sausage and peanuts, eventually give in to the seductions of the street vendors and buy and eat a bag of chestnuts. Then there is the sense of individual metabolism multiplied, the crowd of London visitors each arriving with their own energy needs, collectively driving the vibrant snack business.

This hungry crowd brings us to the third, and most abstract scale: the scale of urban metabolism. Urban metabolism studies attempt to understand "the sum total of the technical and socio-economic processes that occur in cities, resulting in growth, the production of energy, and elimination of waste" (Kennedy et al. 44). In practice, this often involves a process called "material flow analysis," which quantifies and tracks the inputs, outputs, and storage of energy, water, nutrients, materials, and wastes for a given urban region (Newell and Cousins 703). Forna, in describing the Thames' smell of "dead trees and diesel," alongside the waves of traveling tourists, invokes material flows at the level of urban metabolism. Here we have an instance of scaled-up ethological description: objective observation of organism/environment interactions expanded by scalar analogy until the environment, insofar as it is figured as a metabolic system, takes the role of the organism. On a narrative level, this renders what is conventionally

understood as static (the landscape, the given) as both dynamic and mutable. To use Bartosch's terms, the "energy of stories" gets refigured outside the progression of plot as literal "stories of energy" unfold in multi-scalar relation.

The multi-scalar nature of *Happiness*'s metabolic attention means its energy story unfolds in a way that maintains the friction of lived experience. Besides Jean and Atilla, the characters in the motley crew of Tano-searchers are all directly involved with the regulation of urban metabolism. Abdul, a street sweeper, is charged with keeping the city's arteries passable and containing vectors of disease. Komba, a traffic warden, maintains circulation systems, directly regulating the flow of traffic and thus the flow of consuming bodies and resources. Olu, a security guard, modulates circulation at a smaller scale, regulating who passes through into the warm space of his lobby. Just as Forna's descriptive attention to food as a circulating energy resource ultimately highlights contingency and relationality, repeated references to Komba, Olu, and Abdul's work draws attention to the huge amount of labor that goes into the maintenance of an urban system. Foregrounding and personalizing the labor of maintenance—labor often feminized, degraded, and otherwise rendered invisible—denaturalizes structures of the given. Rather than the reifying the status quo, Forna's metabolic description instead yields a sense of interdependency and dynamism.

I want to be careful to point out, however, that deploying the figure of city-as-organism (the figure upon which urban metabolism discourse depends) is not without its dangers.[17] As much as the metabolic frame brings forward the energy required for maintenance, the cross-mapping of organism and urbanism can also sometimes work to elide human labor and create the

[17] A representative instance: Herbert Spencer's 1860 essay, "The Social Organism," and his invocation of organismic metaphors to distinguish between "higher" and "lower" societies. For more on this see Dagget 117-119.

impression of self-regulation. When Forna describes a "lone street-cleaning vehicle in Aldwych" nosing "close to the kerb, like small animal rooting for scraps" before "it" lifts its brushes and speeds off to the river, the organismic simile obscures the work of the driver (242). And as much as the ecological metaphor can be leveraged for environmental critique and constructing sustainable urban systems, it can also consolidate capitalist notions of circulation and equity. In 1857, for instance, German metabolism theorist Jakob Moleschott, described the *Kreislauf des Lebens,* or the "cycle of life," in terms ripe for political and theological analysis:

> What man excretes nourish the plant. The plant changes the air into solids and nourishes the animal. Carnivorous animals live on herbivorous animals, to fall victim to death themselves and so spread abroad newly germinating life in the plant world. The name 'metabolism' has been given to this exchange of material. We are right not to mention this word without a feeling of reverence. For just as trade is the soul of commerce, the eternal circulation of material is the soul of the world. (qtd. in Schmidt 87)

In this doubly materialist world view, gustatory consumption becomes a kind of commercial exchange— "souls" in both cases are taken from the realm of immateriality and defined as the constant interchange of stuff. The cause for reverence, here, is the manifestly material, a sort of beatific vision of nature's redistributive genius. Thinking urban metabolism in these terms risks endorsing the fantasy that individual fulfilment guarantees a mutually beneficial material exchange.

But if Moleschott's thinking underpins a liberal faith in the possibilities of economic exchange, his insistence on the constant metamorphosis of composition also provides a challenge to liberal onto-politics. As Chad Lavin explains, life, for Moleschott, is "not a function of individual bodies, individual will, or individual rationality, but rather emerges from a plenitude

of matter that somewhat randomly gathers and disbands to constitute, reconstitute, or deconstitute bodies." We're not, to put this in even more explicitly political terms, "discrete selves standing sovereign over our bodies; instead we are merely specific organizations of the same matter that surrounds us" (52). This cognizance of material continuity provides an early articulation of the concept of "species being" that would go on to influence political thought from Marxism to contemporary ecological activism. It is a moral obligation, Moleschott writes, "to act first and foremost as a member of the species rather than as an individual." In this articulation, as well as his commitment to process ontology, Moleschott's metabolics challenge both "the ontological and political assumptions underlying the liberal social contract tradition." Even as his work celebrates the dynamics of commercial exchange, his thought also problematizes the idea that we are "a consistent, self-same being over time that can be held accountable for our promises and actions," as well as the idea "that there is some moral standing to pursuing self-interest" (Lavin 53). Forna's writing, I've been attempting to show here, makes a similar case through its specifically nutritive and digestive orientation to consumption. The dynamics of her ethological description, particularly the moments where food chains are followed from pasty to pigeon or fried chicken to fox, start to paint a picture of an anti-individualist materialism. In so doing, she supplements a plot-level endorsement of liberal lubricity with a broadened energy imaginary that challenges dominance of petrologic.

To be clear: I am not arguing that *Happiness* intentionally engages Moleschott's metabolic thought. I am not arguing that the fact of represented eating necessarily negates the novel's liberal streak. What I am suggesting is that considering *Happiness's* chains of consumption and production reveals a system of lively exchange that serves as a counter discourse to the text's narrative of global capital and liberal self-fashioning. Food serves as

consistent reminder of mutual dependence, and so it's true that to some extent a focus on eating would offer similar provocation in any given novel. But what is unusual about Forna's text is the extent to which her prose stylistically encourages this kind of attention to material process. Her orientation toward continuities in time and space means that her surface-level description of bodies and places feels dynamic as opposed to static. In simultaneously representing a liberal fantasy of globalization and a metabolic urban ecology that troubles claims to discrete identity, Forna's ethological orientation toward London life makes a case for the energetic potential of description.

4. Chicken Processing: Resilience, Neoliberalism, and Contingency

Even as a focus on consumption seems to challenge one part of the novel's politics, it also serves to shore up another: Atilla's repeated assertion of the normal presence of death in life. Death might be traumatic, Atilla suggests, but while trauma entails a certain amount of suffering, it does not necessarily entail damage. The only thing it guarantees is change. In rejecting what the novel portrays as the dominant Western psychotherapeutic model of violence as exceptional, Atilla's argument resonates with a Moleschottian framework wherein death and destruction underpin all life. As Hannah Landecker explains, from Moleschott's "monist theory of all life as matter-in-motion," he drew "the conclusion that the endless circulation of matter (Stoffwechsel) meant a constant presence of death in life and life in death. His suggestion of the practical application of this outlook was to use corpses to fertilize the fields, and 'that every meal be seen as the Eucharist,' a position that not surprisingly ultimately led to resignation" (255). *Happiness* does not quite get to corpse-composting, but the consistent descriptive attention to systems of consumption and production serves as a materialist analogue to Atilla's psychological stake in the copresence of life and death. Forna's descriptive metabolics, in other words, manage to

disrupt the given even as her novel is primarily oriented toward maintenance, continuity, and resilience.

Atilla's belief in the coextension of violence and daily life appears again and again in *Happiness*. As he looks for Tano, for instance, Atilla recalls his own "sense of fearlessness as a child, for lacking the knowledge of death…for still believing bad things happened only to other people. How long you held on to that particular belief depended on where you were born" (87). In these musings, Atilla gestures towards a continued refrain in the novel—that trauma studies as a discipline is based on Eurocentric premises and flawed understandings of the normalcy of violence. Working the case of Adama Sheriff, Atilla has call to articulate this argument more explicitly. Resisting Greyforth's speedy diagnosis of PTSD and "abnormal reactions," Atilla asks, "'By what measure do we define normality? Where do we draw the line? Do we take the life experiences of the people of Cuckfield as the measure and decide all else is deviant?" (258). From there, the dialogue shifts into free indirect discourse. "How to construe normality was not a new argument," he thinks by way of the narrator, "but it remained the fact that preventing practitioners in places like this from defending the values of the West was to wage an unending campaign" (258-259). Still grieving the loss of his wife, Attila is adamant that death, even early death and its accompanying suffering, is very often part of life. When Adama's neighbors "crossed the road in avoidance of another person's anguish," he explains, "they weren't afraid of death…they were afraid of life. Now, that should be classified as a clinical disorder" (260). Rejecting the diagnosis of Adama's PTSD and arguing in his final speech that trauma merely entails change, not damage, Atilla's character presents a psychological world view oriented towards resilience and metamorphosis.

Jean, for her part, espouses a similar mode of attention in terms appropriate to her

discipline. Looking at a dead tree she can see from her roof, for instance, Jean muses on its changing ecological role. As she looks at the "dark wood of its trunk and limbs" and its "unforgiving silhouette," she considers how "the tree was dead and yet in death had conceded nothing. Photographers and artists were attracted to dead trees and Jean could understand why:… There was something comforting about a dead tree, children were attracted to climb in their branches, bees to hive in their hollows and animals dug through the soft wood at their base to make burrows. After death the tree continued to preserve life." (163). Jean, as Forna notes explicitly, looks at the world through the eyes of a gardener. Like most gardeners, she sees "a garden's beauty not just in the late spring or early summer when it was most vividly alive, but now in winter, too, in the morning sun, the nacre-edged leaves of the ferns touched by hoar frost, each filigree and spore outlined in crystals of ice" (196). As is the case with the dead tree and the cemetery scene I read in the opening, here Jean finds aesthetic value in the play of the dead and the living. Just as Atilla understands normal life to encompass disruption and state change, Jean offers an appreciation for the changes and cycles of local ecologies. Both characters valorize the power and utility of adaption.

Forna, in a response to a critical roundtable on *Happiness*, suggests that this convergence lies at the heart of her novel's structure. "The immeasurable adaptability of urban wildlife," she writes, "struck me as an allegory for resilience, for the greater the threat to the animals, the more behavioral and evolutionary survival they seemed capable of producing" (421). Jean understands that "animal resilience arises out of the ability to adapt," and Atilla "offers the same analysis of human behavior and psychological well-being." Against the European "desire for greater control of the lived environment," Atilla suggests that the key to psychological well-being is to accept and adjust (421). Aligned with the postcolonial trauma scholarship of Veena Das, Antjie Krog,

and Stef Craps, Atilla suggests that "trauma survivors are not necessarily under the tyranny of the past," and reactions vary widely across cultural context (Diop 388). Addressing trauma, in other words, needs to begin with careful attention—an allowance for the possibility that "suffering and damage are not the same" (*Happiness* 251). Thus, for Forna, "both Jean and Atilla, posed with different dilemmas, ask the same question. Is there a problem that requires treatment? Or does the problem lie in how the situation is viewed?" (422). From distinct disciplinary positions, Jean and Atilla advocate for shifting the terms of attention—instead of immediately asking "how would we diagnose the problem?" they first interrogate the perspectival frame that makes something into a problem in the first place. Changing the form of description, for both characters, radically adjusts both what is visible and what is problematic.

Throughout *Happiness*, Forna foregrounds this determining power of descriptive frames through repeated disciplinary cross-mapping—particularly using ecological metaphors to describe psychological states. How does figurative language change the geometry of attention? In this case, consistent ecological analogies shift the ideological emphasis toward resilience. Jean, out for a run soon after Tano has been found, considers his mental health in the terms of her profession. "As in her world," she thinks, "sometimes there was no fix, sometimes it was better just to let a thing find its own equilibrium. The more you interfered the more you risked upsetting the infinite variables… Tano's brain was an ecosystem, it would reconfigure itself to survive" (214). Mapping the terms of wildlife biology onto human psychology, here, results in a decidedly non-interventionist outlook: Tano's brain, like an ecosystem, will fix itself. Atilla, despite having a host of psychological terms at his disposal, also couches his musings on trauma in meteorological or ecological registers. In a call back to Jean's winter gardening projects, he considers the fact that the "untouched, who were raised under glass, who had never felt the rain

or the wind, had never been caught in a storm or run from the thunder and lightning, could not bear to be reminded of their own mortality…They treated the suffering of others as something exceptional, something that required treatment, when what was exceptional was all this" (232). Admittedly, Atilla comparing the untraumatized to a sheltered winter vegetable is not a perfect analog to Jean's suggestion that the brain is an ecosystem. But both reach to the natural world to suggest that security and stability is the exception, not the rule. Resilience, not the absence of suffering, is the pragmatically desired state.

Jean and Atilla's endorsement of resilience is particularly interesting in the context of the previous discussion of *Happiness* and the liberal subject, as the concept of resilience is increasingly criticized by social scientists as a handmaiden to neoliberalism[18]. Resilience emerged in the field of ecology, but since then it has migrated into a staggering number of discourse domains. Psychologists use it to explain why some individuals can withstand acute stressors, economists use it to explain how economies adjust to changes in resource availability, disaster response policy-makers harness its rhetoric to frame political interventions. As defined by the United Nations, resilience is ''the capacity of a system, community or society potentially exposed to hazard to adapt by resisting or changing in order to reach and maintain an acceptable level of functioning and structure' (United Nations qtd. In Reid 355). For scholars concerned with correlating resilience and sustainable development, resilience is defined as "the capacity to buffer change, learn and develop...a framework for understanding how to sustain and enhance

[18] Neoliberalism," a term frequently deployed in contemporary academic discourse, is a convenient bogeyman—capacious, malleable, and good for virtue signaling. For the sake of clarity, I want to stress that I'm using it here in the narrower sense of "neoliberalization" as outlined by Kathleen Tierney. Neoliberalization, for Tierney, has three key elements: an emphasis on economic growth and capital accumulation, best achieved by means of neoliberal policies and practices; a rejection of Keynesian approaches to economic regulation in favor of deregulation; and a preference for private-sector actors over state power (132).

adaptive capacity in a complex world of rapid transformations" (Folke et al. 437). Notable in both these definitions is the rhetorical presupposition of a social order that is continually at risk of disruption. The U.N. definition stresses "adapting" to hazardous conditions in order to "reach and maintain an acceptable level of functioning," while Folke et al. deploy the less specifically dangerous image of a "complex world of rapid transformations." Rather than intervening in the social order to create an environment of security or stability, resilience discourse accepts flux as given and puts the onus on the individual or the community to react to changing contexts.

It is in this transfer of responsibility that the logic of resilience begins to coincide with the logic of neoliberalism. While the state ostensibly "steps back" and encourages the free conduct of individuals, in practice this occurs through active interventions to open new ground for privatization and decentralization. Resilience discourse, insofar as it encourages people to take responsibility for their own social, mental, physical, and economic well-being, can be seen as a particularly insidious extension of the logic of neoliberalization. As David Chandler suggests, the resilient subject is "an individual capable of self-governing in a world of contingency and radical uncertainty. The autotelic self turns insecurity into self-actualization, into growth" (220). In its multi-disciplinary valorization of resilience, as well as the descriptive orientation towards contingent material context, *Happiness* can seem to end up endorsing this vision of a self-actualizing neoliberal subject.

If we follow the dominant social-science thinking on resilient subjects, this is straightforwardly bad. Julian Reid, for instance, makes the case that there is a "fundamental antimony between the resilient subject of neoliberalism and the political subject of resistance" (356). "The resilient subject," he writes, "is a subject which must permanently struggle to accommodate itself to the world. Not a political subject that can conceive of changing the world,

its structure, and conditions of possibility, but a subject that accepts the disastrousness of the world it lives in as condition of partaking of that world" (355). To be a resilient subject, in other words, is something akin to having given up on a making a world otherwise. It is to devote one's resources to adaptation and survival, rather than struggling to shift the structures of the given. But for all there is something true and resonant in the conjunction of acceptance and resilience, Reid's formulation is curiously committed to a binary structure. Why, exactly, does resilience exist in fundamental antimony with political action? Why couldn't a subject struggle to accommodate themselves to the world even as they dream and work for a different one? *Happiness,* it should be noted, presents the resilient subject as a critique of the general eurocentrism of trauma studies. Resilience is specifically deployed here in reaction to the universalizing gaze of psychology, deployed against the logic that that reduces the complexities and circumstance of trauma victims to a set of predetermined cognitivist models. Returned to this narrative context, Forna's resilience begins to incorporate elements of the resistance Reid and others are so determined to push into a separate category.

In so doing, *Happiness* offers a useful corrective to the strain of social theory that frames resilience as neoliberalization. More specifically, and in terms that recall the introduction, *Happiness* separates the degraded work of maintenance from necessarily conciliatory politics. The struggle to accommodate oneself in the world, it suggests—to feed and clothe oneself and ones' children, to carve out a home in uncertain times—is often both the necessary grounds for political struggle and political in and of itself. In this argument I follow Mierle Laderman Ukeles's 1969 "Manifesto for Maintenance Art," a proposal for an exhibition where Ukeles proceeds as usual with the work of housekeeping in the hallowed halls of the art museum. The opening of Ukeles' proposal outlines the difference between the Death Instinct and the Life

Instinct: the former encompassing "separation, individuality…dynamic change," and the latter "…the perpetuation and MAINTENANCE of the species; survival systems and operations, equilibrium" (1). Ukeles, siding with the "Life Instinct," teases out the disruptive elements of perpetuation. Working in an art world preoccupied with genius and rupture, Ukeles proposal to clean the floors of the Wadsworth Atheneaum attempts to recast the work of maintenance as the stuff of high art. In Ukeles' manifesto, performing repetitive care labor—the kind both fundamental to resilient communities and inevitably elided—is the life-affirming prerequisite to changing hierarchies of notice. In this, Ukeles is aligned with an essentially utopian strain of everyday life theory, one attributable to Henri Lefebvre. Both seem committed to the notion that "everyday life harbors within itself the possibility of its own existential or ontological transformation" (Sheringham 12). For Ukeles and Lefebvre, it is the critic's or artist's job to tease out the "power of resistance contained in the everyday" (Sheringham 149).

Forna's model of resilience is one attuned to this possibility for transformation. Her novel's interest in the processes of street cleaning, dinner preparing, and food foraging refuses to let resilience be a sign of having given up hope on stability. In foregrounding the contingency of the material world, and the ways that care and violence together undergird the quotidian work of maintenance, *Happiness's* dynamic description draws attention to a Lefebvrian sense of resistance in the everyday. Because "every structure embodies a geometry of attention that renders some things audible/visible and others inaudible/invisible," Joan Retellack explains, and because "cultures do their orientational work in large part…in naturalized figure-ground relations that appear to be simply the way things are," habits of attention are difficult to inspect, much less change (175). Part of the argument of this chapter, then, is that forms of descriptive narration are one of the tools for defamiliarizing "the way things are." Forna's descriptive metabolics, as

outlined in sections one and two, make visible the complex dynamics of something as naturalized (and hence unread) as having dinner. Considering the metabolic processes that circumscribe and invigorate a text's living bodies—the ingestion, disintegration, reformation, and excretion of matter—heightens the sense of contingency that accompanies the state of mere existence and thus the important work of maintenance. Yet insofar as each individual and collective metabolism is a process, it is also a narrative, and so jostles among the other metabolic stories to be worthy of attention. This kind of narrative attention to change over time could not be applied consistently without a dilation that would yield something distinct from what we generally understand as a novel. Authors (and readers) must select which bodies and organisms to follow in the fullness of their flux.

The selective attention to process, the kind of attention particularly useful in making visible the possibility of transformation within the everyday, is most clearly deployed in the novel's depiction of chickens. Tracking the extent to which *Happiness's* chickens are rendered as discrete objects versus energy systems should help demonstrate why careful attention to descriptive form yields insight into geometries of attention. For instance, while foxes and parakeets are carefully observed in ethological terms, chickens are generally apprehended in nutritive or agricultural ones. Within this span of distinctive disciplinary approaches to chicken representation, there is also a spectrum of descriptive expansion. On one end, there are moments like the dinner Roy cooks for Jean early in their relationship: "a chicken jalfrezi with fresh Mexican chilies" (238). The chicken in this context is relatively static object, the chilies stinging Jean's tongue the closest the bird gets to agency. Slightly further along the spectrum is the dinner Jean and Tano cook together at the novel's end, "a chicken (free range) casserole" (233). Here, Forna's parenthetical both serves as a kind of virtue signaling for Jean and begins to give

the chicken-object a sense of process or duration—at one point it had the capacity to range.

On the process-heavy side of this spectrum might be the depiction of Atilla's gardener's preparations for making chicken yassa. Once the bird is caught, the gardener scatters ant powder along the floor around its cage because "he did not want the bird bothered by the red ants that swarmed around the dog's bowls. In his village he had seen roosting chickens eaten alive by soldier ants, feathers falling like orchid petals to the ground" (268). When it is time to make the dish, the gardener grasps "hold of the chicken's legs in his left hand and let the bird's body fall," while his right hand wrings the neck. He then holds the chicken firmly for another minute as it continues to flap and writhe in his hands (272). Compared to the relative inertia of the "chicken jalfrezi," this chicken is inscribed within quotidian networks of violence, time, and care. It is protected from the consuming ants so as to prevent its suffering, and so as it to ensure the availability of its flesh to human diners. It had free-range of the yard, it existed in a cage, and then even after its death it continued to jerk and writhe. For all this scene maintains Forna's general commitment to ethological description (we have no sense of the gardener, nor the chicken's, emotions or interior thoughts) we end up with a thick sense of the temporal extension of the chicken's existence and its place within the domestic energy system. If we return to the "chicken (free range) casserole" in light of the preparations for chicken yassa, we now have a sense of absence—a marked turning away of textual attention from the extension and eventual termination of the bird's ranging.

This is particularly true when we read the novel's various chicken dinners in relation to the seemingly disjunctive snippet of television that Atilla watches when he has first rescued Tano: "Now the television showed what looked like a poultry farm, a vast space, a coop containing a thousand chickens, the birds were all white, the coop was filling with white foam

from an overhead hose. As the birds were covered, they began to flap and die in the whiteness, nothing visible except the movement of their wings" (152). While it seems likely Atilla has encountered news coverage about attempts to contain avian bird flu,[19] the moment continues the dynamic of selective descriptive attention. The more object-like textual chickens that have preceded this scene become, retrospectively, evidence of elided industrial violence. Atilla's view into the slaughterhouse—one both aesthetically striking and horrifying—contains a version of *Happiness's* concerns both condensed and globalized. The chickens must die to contain the threat of bird flu, a threat predicated on our essential porousness and bodily vulnerability. To consider the maintenance and dynamism of chickens as living systems is to engage that vulnerability. It opens up space to question exactly what enables the smooth functioning of everyday life. In other words: it renders the everyday contingent on maintenance work.

This excavated contingency is, in some ways, a deeply unsatisfying place to end. Finding uncertainty within daily life, particularly in a moment when resilience discourse has become so ubiquitous, does not seem to offer much in the way of novel analysis, much less utopian futurity. Jonathan Joseph makes this case particularly clearly. For Joseph, if "contemporary social theories contribute to an ontology that renders the world governable in certain ways," the cluster of philosophies that go under the name of "new materialism" collectively assume a world "that is increasingly complex but also contingent" (39). This consequently supports "the sociological view that society is moving away from enduring social relations based on such things as class, nation-state, and social identity in favor of a view of the world as comprising individualized consumer-citizens with their own life pursuits" (40). Resilience, metabolism, and other off-shoots of ecological materialism, fit with "a social ontology that urges us to turn from a concern

[19] (https://www.mirror.co.uk/news/world-news/footage-reveals-gruesome-foam-suffocation-84457280)

with the outside world to concern with our own subjectivity, our adaptability, our reflexive understanding" (41). It's a social ontology, in other words, that urges its subjects to greater practices of awareness even as it cultivates an atomizing individualism.

In the foregoing discussion of Forna's metabolic style, I've been arguing something similar about the novel's emphasis on material flows and the consequences for descriptive attention. The predominantly thin description of *Happiness* is used to draw attention to the dynamic systems of everyday life— multi-scalar relations that open up both possibilities and uncertainties. Appropriate reactions to this shifting landscape, the text seems to suggest, include both greater attention to extant worldly contours and greater resilience in the face of inevitable change. This, as Joseph argues, may be harnessed in the service of explicit political ideology— converging as it does with elements of classical liberalism and contemporary neoliberal discourse. But as the novel's emphasis on contingent material relations can just as often be read as challenging these subject formations, ultimately I'm not so interested in arbitrating exactly where *Happiness* falls on the political scale. Rather, it is the bare fact of its dynamic openings, or its attention to contingency in itself, that I want to prioritize.

This is for two reasons, or perhaps: a consequence of two contexts. The first is the larger academic debate about the politics and affordances of literary realism. *Happiness* (and, I would wager, books that share its particular descriptive orientation) suggests that the terms of discussion around the "new realism" and its relation to empirical observation might need to be shifted. In using thin descriptive techniques to expand across time and space, Forna's text offers a dynamic rebuttal to the line of argument that understands limited spatiotemporal purview to be a necessary characteristic of realist narrative. Forna's metabolic description helps demonstrate how seemingly-static objects might be described instead as processes, and how allowing

description to be an engine of narrative energy means the realist novel can cover considerably more conceptual ground.

The second, the vexed critical relationship to maintenance, is related, though distinct from the first. To the extent that realism maintains or endorses the status quo, it is demonized by some critics as complicit in the perpetuation of unjust systems. When realism is recuperated, it is often valued precisely to the extent that it "interrupts" or "disrupts" a perceived real. Forna's metabolics, in drawing attention to the material contingency of daily life, do some of this work of disruption. The bodies, organisms, and environments in her book seem precarious—dependent upon each other and almost improbable in their functioning. But this attention to contingency has the paradoxically concordant effect of making visible the enormous importance of maintenance work. In a world with so many variables, the feeding, cleaning, caring, and hosting that make and preserve sensations of stability emerge as key components in the building of a future. Like Ukeles disrupting artworld norms by maintaining a gallery space, Forna's realist disruption is one paradoxically predicated on maintenance, stability, and continuity. If, *pace* Lefebvre, everyday life contains the possibility of its own transformation, Forna's novel paints a picture of continuous transformation held in abeyance by the work of maintenance. In the next chapter, I will examine what happens when this maintenance work is extended into the future via epigenetic temporality.

CHAPTER THREE

Reading the Grocery List: Epigenetics and Collectivity in *Future Home of the Living God*

Louise Erdrich's 2017 novel, *Future Home of the Living God,* takes the form of diary entries by a pregnant woman named Cedar. Cedar, born to Ojibwe parents and raised by white "Minneapolis liberals," writes with the knowledge that "there have always been letters and diaries written in times of tumult and discovered later." The fact that she "could be writing one of those," motivates her diary-keeping even as she acknowledges that there may be no readers in the years to come (3). There may be no readers, of course, because the climate is rapidly warming, small dinosaurs are roaming suburban backyards, and a genetic shuffle at the global scale has left the reproductive future of the human race in question.

Yet if Cedar's contexts are squarely in the realm of science fiction, her writerly mode would fit comfortably among the familiar names in eighteenth-century realism. When Daniel Defoe's Crusoe explains that, "having settled my household Stuff and habitation...I began to keep my Journal, of which I shall here give you a copy," he renders the narrative that follows simultaneously epistolary and diaristic—a mode closely related to Cedar's missives to her unborn child (52). Cedar's opening address ("When I tell you…") is a surprising literary echo of the opening of Samuel Richardson's *Pamela*: "Dear Father and Mother," Pamela writes, "I have great Trouble, and some Comfort to acquaint you with" (11). Cedar and Pamela's respective deictics explicitly address absent parents and unborn children even as they afford the kind of intimacy and immediacy that has come to characterize the realist mode. This is a seemingly real diary, a seemingly real letter, and the flexible "you" affords a kind of readerly involvement as effective as it is traditional. Cedar and Pamela also share the narratorial simultaneity—what critics call "writing to the moment"—that let Richardson in for so much literary ribbing: an

improbable diaristic present that means Cedar is somehow escaping from a hospital and writing the experience at once. The present tense in *Future Home*, like the present tense in *Pamela* and *The Overstory,* demonstrates the way conventional modes of realist storytelling have always played with inconceivable relations of space-time

This defamiliarization of realist technique also plays out through the vexed individualism of *Future Home's* epistolary-diary form. When Ian Watt lauded Defoe and Richardson for creating a "sense of personal identity subsisting through duration and yet being changed by the flow of experience," he laid the groundwork for both a lingering critical association of the novel and the individual, and a narrower association of the diary-letter and interiority (24). While the consensus that the novel is an essentially liberal-individualist project is gradually eroding under the weight of alternate theories of its aesthetic politics,[20] the very force of this counter-trend points to persistence of the liberal-individual thesis. Julie Park, in a recent and compelling variant of the Wattian tradition, suggests that literary letters are a specifically effective form for drawing "lines of enclosure." "The moment such lines...are drawn around the world as an aspect of the self's perceptions and experiences," she writes, "the individual is created. Within those lines, the space of interiority lies" (26). If the realist novel as a whole is often critically understood to prioritize individualism, epistolary form could be said to further emphasize a commitment to interior experience.

[20] In broad strokes: the critical trajectory from Ian Watt to Frederick Jameson to Nancy Armstrong reads the private individual as realism's reason for being. But recent accounts of realist fiction often stress qualities like its "commitment to detailed environments," "internally consistent social matrices," and investment in questions of "knowability, empiricism [and] probability" instead (Kornbluh 102). See also Colleen Lye and Jed Etsy's 2012 MLQ essay, "Peripheral Realisms Now," and Ulka Anjaria's 2017 Oxford Research Encyclopedia entry, "Twenty-First-Century Realism," for useful accounts of realism's shifting contemporary reputation.

Erdrich, a member of the Turtle Mountain Band of Chippewa, names canonical realists among her many influences, and so to some extent it makes sense that Cedar's diary hews to their model of individual interiority. In her early years, Erdrich "read Madame Bovary and Jane Austen and George Eliot over and over," and she even wrote the critical introduction to the 1987 Bantam edition of Eliot's *The Mill on the Floss* (Erdrich 1994, 233). *Future Home,* perhaps consequently, often registers as realist despite its fantastical premise. The novel's uncomfortably proximate relation to present circumstance underscores this generic ambiguity. *Future Home* describes a world suffering under a repressive political regime—a place where women's bodies are legislated and "real winter" is a thing of the past. In the author's note that accompanied the advance copies of the book, Erdrich explains that she wrote the first draft back in 2002, when President George W. Bush reinstated the 'global gag rule' barring the U.S. from funding health care organizations that provided abortions or abortion counseling. When Trump was elected, she read her old manuscript again and found it newly urgent. "I felt I'd circled back to 2002," she writes, "only worse." She reworked the novel, cutting nearly two hundred pages, and it was fast-tracked to a publication date of November 2017. Reading *Future Home* in the fall of 2020, against the contours of Trump, a global pandemic, and the threat to reproductive freedom posed by Amy Coney Barrett, the novel's premise feels very real indeed.

Yet for all that *Future Home's* verisimilitude and diary form seem to suggest a realist commitment to individual psychic depth, in this chapter I argue that Erdrich's novel is strikingly oriented toward the collective. Erdrich is writing in a literary mode associated with individualism, but attempting to tell a story at the species scale. Critics have generally read this disjunction as a failure of deep characterization rather than a successful portrait of population. Ron Charles, for instance, called the writing "weirdly depth-resistant," complaining that "while

the plot material is here for an interesting exploration of Anglo and Native American attitudes about women, reproductive freedom, and environmental protection…those issues remain overshadowed by Cedar's far less interesting rumination on her parents." Michael Schaub echoes this point, complaining that Erdrich's writing is "oddly flat, and occasionally inexplicable," full of excessive descriptions of Cedar's grocery shopping that "somehow [turn] out even more boring than [they] sound." Building on the revalorization of ethological or "flat" description I argued for in Chapter Two, here I want to suggest that *Future Home's* flatness gestures beyond a narrow version of "the social" that defines itself against the materiality of eating. Resisting the argument that Cedar's adventures in pantry-stocking obstruct the novel's interrogation of pressing environmental questions, I argue that *Future Home's* thematic concern with domestic provisioning and maintenance serves to extend the horizon of political possibility, grounding a vision of new collectives in prosaic material details. This register—in which the mundane work of caring and eating contains a folded futurity—I call the "epigenetic everyday."

Epigenetics, or the study of heritable changes in gene expression that occur in the absence of change in DNA sequence, is a growing field in contemporary bioscience. It is useful for my analysis here for several reasons. First, where earlier genetic models stressed a one-to-one deterministic relationship between DNA and phenotype, epigenetics proposes a more flexible system of interactions where the body is active in its own developmental unfolding. In practice, this means that social and environmental factors at the scale of an individual life (like stress, exposure to toxins, and nutrition) get registered in genomes in ways that can be passed down through generations. This challenges received notions about the distinction between "nurture" and "nature" and creates a scalar instability where everyday decisions, habits, and conditions of life take on multi-generational import. In giving quotidian activities broad scalar reach,

epigenetic discourses reframe the everyday scenes of realist fiction into the kind of longue dureé organism/environment interactions supposedly out of the genre's ambit. In writing a novel of the epigenetic everyday, Erdrich's adoption and defamiliarization of realist literary structures register the temporal disruptions of postgenomic thought at the level of form,

This is not to assign primacy to epigenetics' relational framework. If mainstream science is just cottoning on to the co-constitutive relation of the social and the biological, many indigenous worldviews have long acknowledged such networks. As Dakota STS scholar Kim TallBear asks regarding the growing interest in relational biology, "Is it too easy a comparison to say that Western thinkers are finally getting on board with something that is closer to an American Indian metaphysic?" Yet TallBear also cautions scholars engaged in this kind of comparative work to "beware of their own discrediting languages," that risk portraying indigenous articulations of reciprocity as "belief" or "metaphor" rather than documented knowledge ("Why Interspecies"). *Future Home,* in drawing on both indigenous-catholic mysticism and the complexities of genetic outcomes, is less invested in discrediting or lionizing a particular field of discourse than in exposing sites of dissonance and overlap. I want to tease out the text's vexed relation to epigenetics, then, because epigenetics rubs provocatively along the borders of questions of biological relation, cultural memory, genetic determinism, and indigenous metaphysics. I also invoke epigenetic discourses because they extend the previous discussions of metabolism generationally—raising the question of inhabitable futures through the routines of everyday life.

So I begin this chapter thinking about *Future Home* through the lens of Cedar's metabolic needs. Reading Erdrich's grocery lists against a literary-critical tradition that sees food and eating as anti-narrative, in the first section I suggest that *Future Home* gestures to a version of

the social that doesn't define itself against the materiality of eating. The second section extends this analysis generationally, using concepts from contemporary epigenetics to map the relations between individual consumption and collective well-being. The third section puts this question of responsibility in explicit dialogue with climate change, reading descriptions of the everyday labor of care as imaginative infrastructure for a better climate future. In focusing the narrative on Cedar's journey towards childbirth against a backdrop of population decline, Erdrich seems to call up the metonymic relation between the health of the family unit and the health of the nation. There is the promise of reproductive futurism, a child brought safely into the world linking a thriving domestic interior and national domestic. Yet in *Future Home's* refusal to find simple hope in genes or babies, it ultimately works beyond the scale of the individual subject to locate the possibility for thriving in mundane relations of collective care

1. **Filler up: Gas-Station Food and Speculative Potential**

In the context of contemporary indigenous fiction, realism is a vexed generic mode. As Cherokee scholar Daniel Heath Justice explains, depicting the "real," is too-often conflated with narratives of language loss, substance abuse and dispossession. Writing in the fantastic mode, by contrast, "opens up and expands the range of options for indigenous characters (and readers); it challenges our assumptions and expectations of 'the real,' thus complicating and undermining the dominant and often domineering functions of the deficit model." Speculative writing, in other words, offers an opportunity to imagine otherwise: "for indigenous writers of speculative fiction," Heath Justice continues, "the fantastic is an extension of the possible, not the impossible" (*Apex*). Guided by Heath Justice, I want to suggest that *Future Home*'s extension of the possible is achieved through the very prosaic details of gas station food, grocery lists, and land-use plans that emphasize materiality over interiority. The quotidian labor so aligned with

"the real" that it is dismissed as below the level of interpretation becomes, in Erdrich's speculative imagining, a key site of communal possibility.

Future Home achieves this, in part, through careful attention to eating as both an individual process and an investment in collective futurity. Much like Atilla, one of the first things we learn about Cedar is that she's hungry. In an early diary entry, she drives north to her biological family's home on the reservation. Despite the evolutionary chaos and rising theocratic fascism, none of the scenery seems terribly weird: "a bit quiet, perhaps, and some sermons advertised on church billboards seem more alarming than usual— "*Endtimes at Last! Are You Ready to Rapture?*" (13). In a "fallow," "weedy" field Cedar sees a sign that reads "*Future Home of the Living God,"* and this sends her into a tailspin of evolutionary anxiety until she stops for a meal. One egg and cheese biscuit and two cartons of milk later, her head clears, and she crosses into the reservation. But hunger strikes again: "a serious kind of pregnancy hunger, *ravening hunger,* and now I just want to stop the car and cry. I drink some water. Eat a little bag of peanuts from my glove compartment. Compose myself" (15). Cedar's hunger in this instance is the product of individual circumstance—brought on, in part, by pregnancy, and compounded by navigational stress. If there is scarcity here it is primarily of the road-trip variety—when is the next exit? Are there any more snacks? Yet in conjunction with the "fallow" field outside the car, Cedar's hunger becomes more ominous. A formerly fertile space lies dormant, agricultural production replaced with divine promise and routed through the rhetoric of real estate. For all that fields are sometimes left fallow to restore soil health and future production, in context such agroecological management seems unlikely. Individual metabolism and agricultural metabolism are held in tension, an early instance of the novel's careful toggling between personal experience and collective vulnerability.

Cedar's metabolism continues to drive plot development after she locates her family, and her own hunger is quickly re-scaled to the level of community. "I am going to ask them to lunch," she writes, "after which, I decide that I'll drive back to Minneapolis, counting my blessings all the way" (28). Eddy is momentarily surprised by the invitation. "'There's still lunch? Of course there is,'" he says, '"We can probably still sit down and order our usual Cobb salads and wild rice soup. Lettuce is still being shipped here, most likely. Corn is still tasseling. Cows have not stopped giving milk. But then, I think, it won't take long before they give a lot less as they are bred for milk capacity'" (28). Scarcity, previously kept to the outskirts of the narrative, comes more fully into view in the prospect of lowered yields. And Eddy's comments set Cedar to thinking again: "I remind myself to lay in a stock of powdered milk right away, to maybe hit a big Cub or Rainbow market before I get back to the cities. I make a mental list of long-shelf-life high-protein foods. Peanut butter. Durum pasta. Rice, beans, lentils. And salt. I'll get a lot of salt. We'll need it whatever we become. And people run quickly out of liquor, right?" (28). The promise of Cobb salad quickly gives way to the threat of its coming absence—a scaling up from individual to collective hunger. It is accompanied by what might be seen as a narrative flattening: global crisis takes the mundane form of a grocery list, a catalogue of material singularly lacking in psychological interiority or identifiable plot.

Cedar makes these lists fairly frequently, and here, again, her diary seems to call up the stylings of eighteenth-century realism. Like Robinson Crusoe, Cedar's domestic accounting is intimately tied to survival, and in both novels lists of the edible are crucial the narrative's formal mechanics. As Dorothee Birke explains, "the meticulous inventory of things [Crusoe] has at his disposal serves to reinforce the impression of plausibility." Crusoe's lists suggest—by virtue of their mundane pragmatism—that "in this kind of narrative, no *deus ex machine* is allowed"

(301). Taking stock of pantry stores, in the context of survival or apocalyptic narratives, thus helps explain the rules of the narrative game: it suggests both the material reality and the material limitations of the diegetic world. This kind of listing is distinct, but related to, Powers' freewheeling tree catalogues discussed in chapter one. Powers' lists sometimes formally suggest the reader pay less attention so as to avoid being overwhelmed, and Cedar's lists invite this kind of skimming. Grocery shopping, after all, is like a forest insofar as it generally forms the uninterpreted background for a novel's plot. But they also challenge this readerly impulse in tying these inventories to the main character's survival—a question much higher up on the hierarchy of notice. Rather than working towards a stuplime awe, each prosaic detail of provisioning becomes important in ensuring a future.

In this context, Cedar's detailed lists serve to disrupt the normative hermeneutics wherein domestic description is rendered unimportant. Naomi Schor makes an explicitly gendered version of this point: "in most instances," she writes, "the feminine privileging of the detail entails a dangerous blurring of the line between the principal and the incidental event, the main protagonist and the secondary characters" (16). When Cedar finally goes grocery shopping and comes home with "salt, rice, beans, whole wheat flour, pancake mix, lots of canned vegetables…peanut butter…a bottle of juice, a crisp New Zealand apple, a stack of stoned-wheat crackers, and a ball of mild white mozzarella," her list collapses the crucial and the frivolous. She has enough food to survive (important). The crackers are made of stoned wheat (perhaps less so). For a reader like Franco Moretti, these details about beans and flour serve as "fillers," or the kind of everyday descriptions that "rationalize the novelistic universe, turning it into a world of few surprises, fewer adventures, and no miracles at all" (82). Something like eating a meal (Moretti: "could you imagine a more perfect filler?") might be said to rationalize in the sense that

reminds readers that characters have caloric needs. This is not, in conventional approaches to realist fiction, the stuff of narrative interest.

In making eating a constitutive part of its narrative arc, *Future Home* resists a longstanding critical association of food plots taking the subordinate role. Michael Parrish Lee traces the origins of this association to the nineteenth century. "With the emergence of Malthusian population theory and its unsettling links between sexuality and the food supply," Lee writes, "the British novel became animated by the interplay between…desire and appetite" (2). Since Watt's *Rise of the Novel,* Lee continues, "critics have aligned the novel form with companionate marriage and psychological depth," and while there have been some significant revisions to this assessment, "it still makes up a key part of understandings of the nineteenth-century novel" (2). Even when marriages fail, or remain unrealized, or are accompanied and facilitated by non-heterosexual desires, critical approaches to the realist novel tend to privilege erotic and romantic narrative arcs as sites of analysis. In Catherine Gallagher's reading of *Middlemarch,* for instance, despite Gallagher's acute critical awareness of the complexities of embodiment, "Dorothea becomes fully animated only with the eruption of 'erotic sensation,' that reshapes her 'around a sexual and reproductive core'" (qtd. In Lee 3). Or on a more macro level, one might look to Peter Brook's *Reading for Plot,* which famously articulates a vision of narrative as mobilized and animated by erotic desire.

The desire for food, by contrast, has tended to serve as a threat or limit point to narrative progression. Lee defines the subordinate "food plot" as "those moments and sequences where the materiality of food, eating and appetite garner narrative attention." The more material these sequences become, the more they "disrupt the movement of narrative toward wedlock and the depiction of personhood as centrally composed of a deep interior, an inside to be filled with

yearnings and sympathies instead of bread and cheese" (2). Because eighteenth-century philosophies of aesthetic taste were established partly through the subordination of alimentary taste, it makes a certain kind of sense that appetite would be read as a narrative limit point in the nineteenth century[21]. Brooks, again, makes this critical approach explicit. In contrast to the "socially defined" desires of nineteenth-century characters, he suggests, the struggle against "starvation" foregrounded in earlier narratives marks a "rock-bottom paradigm of the dynamic of desire" (38). Hunger is thus posited as desire's (and thus narrative's) nadir, providing the narratological precedent for dismissing Cedar's fondness for mozzarella. Within the established critical paradigms of the novel as an exploration of individual interiority, cheese-eating not only fails to provide character development, it also actively threatens a text's formal success as a narrative propelled by desire.

Recent scholarship, however, has pointed to the ways the depth-individuality model of narrative neglects narrative's engagement with communal life and elides more complex forms of the social. Emily Steinlight, for instance, suggests that nineteenth-century novels "both established and tested" the innovation of governing on the scale of the aggregate. In order to critically appraise these experiments, she calls for a shift in focus from a "micropolitics of the individual subject to a macropolitics of population—a politics for which the individual is no longer the basic integer and social integration no longer the telos" (15), This entails recognizing

[21] Lee is careful to acknowledge that hunger *was* a key narrative force in nineteenth century fiction. One only has to think about Charles Dicken's *Oliver Twist,* or Jos Sedley in William Thackery's *Vanity Fair,* or Thomas Hardy's general preoccupation with the material necessity of food entwined with the social necessity of marriage. What I want to take away from his argument is less an allegation of the total subordination of the food plot in Victorian fiction, and more an acknowledgement that the initial subordination cast a long literary shadow. As Lee puts it, "the Austenian subordination of eating to the marriage plot provided the essential framework for the Victorian novel, and it continues to shape the way we read" (42).

"that vitality, health, and biological reproduction are elemental to the ways in which political community came to understand its own problems and possible futures" (15). Aligning species life with political futurity means the fate of an individual cannot be the sole bearer of narrative significance. Writing about slime molds, Dena'ina Athabascan/Alutiiq scholar Carol Edelman Warrior calls for a similar widening of the parameters of sociality:

> Indigenous philosophers from the Western Hemisphere seem to agree that all contents of the cosmos are related to one another…that is, they suggest that all 'things' are not things so much as process or movement….To think about the nature of reality in this way begs some questions: Are there boundaries between individuals, or between a person and any other thing?…Paula Gunn Allen once implied that such divisions are fallacious and claimed, "It's my nature to transform energy through this conglomerate of critters that I like to call my body." (368)

Warrior's relational framing of cosmos-contents and Gunn Allen's "conglomerate of critters" push Steinlight's call for a politics beyond the individual one step further: the need is not just to shift from micro to macropolitics of population, but to do so in a way that puts pressure on the kind of person/thing boundary that excludes food from the hallowed space of narrative.

Reading the body as a conglomerate transforms the individual subject to a collective, a collective that is best understood as a metabolic proces*s* of energy transformation, not a product. Put differently, and perhaps a bit reductively, the dominant model of literary interpretation prioritizes relationships—particularly erotic and marital relationships. Because the natural and material world is not understood as a site of relation in traditional western ontologies, it is often left out of literary-critical analysis. Reading Steinlight through Warrior opens space for the provocation that a "political community" exists beyond the species, and that "recognizing

vitality, health, and biological reproduction" as crucial to narrative progression entails a metabolic approach of human relationality. Bringing the processual orientation to daily existence I developed in chapter two to bear on *Future Home* helps explain the novel's more-than human relational frame.

Future Home, despite its formal adherence to the conventions of individual interiority, provides a surprising example of this depiction of relational existence. Written in the form of a diary, *Future Home* seems to occupy almost the opposite population pole of crowded Victorian novels. Cedar spends a lot of time alone in her house, confined in a ward, or hidden in a cave—carefully described spaces that explicitly sequester her from any ability to perceive "the masses." The character system of the novel is relatively restrained in scale, and the action takes place not against the threat of overpopulation, but the threat of human extinction[22]. Further, we have access to the details of this threat only through Cedar's diaristic voice, seemingly locating her as the individual access point to a social totality. Yet if we return to Schor's discussion of the detail-as-threat, it opens *Future Home* to a reading at the scale of the population. For Baudelaire, Schor explains, "the more our artist turns an impartial eye on detail, the greater is the state of anarchy…all hierarchy and all subordination vanishes." Here, she continues, the "troping of the detail as revolutionary mob overtly politicizes the aesthetic; the peril posed by succumbing to the invasion of the barbaric or feminine upstart detail…is nothing less than the end of civilization itself" (17). One way of reading *Future Home's* abundant domestic and gustatory details*,* then, is as an aesthetic commitment to the proliferation of relations beyond the conventional pairings of Mother-son/ Mother-daughter/ Husband-Wife. Baudelaire's anarchy of detail becomes less a

[22] Or, to put this in slightly more precise terms, the threat of the extinction of *those we now consider to be human.* The threat is less an absence of hominid life and more the specter of degeneration that so haunted Western modernist imaginations.

threat to aesthetic success than the preferred aesthetic mode for Erdrich's political project: modeling the revolutionary potential of systems of care beyond the human reproductive unit of a nuclear family, and beyond a vision of the social that relies on disavowing material needs.

This specifically material, processual sociality often finds its most explicit articulation through Eddy. Towards the end of that first family lunch, for instance, Eddy takes out his briefcase and hands Cedar some recent pages of his manuscript. The project, which "is basically an argument against suicide," consists of a collection of numbered entries detailing reasons to stay on earth (29). The offered page, numbered 3027, is titled "Even Gas-Station Food Can Save You," and goes (in excerpted form) like this:

> 1
>
> Today I did not kill myself because of the sweet foam on the top of a cheap cardboard cup of cappuccino. What can I tell you except that it was delicious, swept off the surface of the dense brew onto my finger, which was slightly redolent of windshield wiper fluid…I tasted fully. Malt dextrose and a resonance of airplane glue with a scorched plastic finish. My senses fully awakened. Awful and Superb!
>
> …
>
> 3
>
> I ate a postdated ham-and-cheese sub. Then two oranges from the fruit bin. Thusly, tasting deeply of all that gave me life, I made it through another unpromising morning and wholly treacherous afternoon in which between ringing up sales and unblocking gas pumps I attempted to manage my dread. The syncopation of my heart. A willful retreat of my entire mental process. As I contemplated the 1 p.m. Tribal council meeting which I was scheduled to attend.

Strike that. Endure. *That I was scheduled to endure.* (30).

To recap: in this scene of filial reunion, Eddy and Cedar discuss the supply-chain contours of future hunger in the anticipation of satisfying their present-tense hunger for lunch. The act of lunching thus serves as a hinge between what Brooks would call Cedar's "socially defined" desire to connect with family and narrative's "rock-bottom paradigm" of starvation. However, food as functional nutrition—the most narrowly material relation between eating and survival—quickly gets supplanted by Eddy's reformulation of the links between eating and being. Eddy's survival food, here, is both explicitly non-nutritive (malt dextrose, scorched plastic) and explicitly delicious. The material pleasures of cappuccino foam and fruit-bin oranges help him manage his dread, the syncopation of his heartbeat, the labor of unblocking gas pumps. They get him through to the tribal meeting, thereby explicitly twining themselves to collective sociality.

Later in the novel, when the crisis has progressed, Eddy again finds reassurance in the gas station food. "Don't worry," he writes in a letter to Cedar, "we're all eating. We've moved everything out of the store into our basement and foodstuffs have a long shelf life (Twinkies approx. Forty years) …Grandma's fine and your sister, with no TV to watch, has finished *Thus Spake Zarathustra*" (96). Here Eddy's relation to the food from his gas station has shifted from one of personal survival (foam staving off suicidal despair) to more collective ends—providing literal sustenance to Sweetie, Little Mary, and Grandma as well as emotional succor to Cedar ("Don't worry…"). But taken in the context of *Future Home's* earlier treatment of food access on the reservation, Eddy's reference to the "long shelf-life" inscribes a longer history of settler-colonial relations. At the first tribal meeting Cedar attends, for instance, Sweetie and Bangs get into a discussion about Saint Kateri. Kateri, Sweetie explains, had most recently appeared to a group of big-time gamblers: "She was forthright, accusing, and even said specifically to Hap

Eagle that he'd wasted good food money and his kids would now have to eat from the commodity warehouse." "Do they have commodities in heaven?" a council member responds, "How'd she know about commodities?" (24). "Commodities," here, refers to goods from the U.S. Government's "Food Distribution Program on Indian Reservations," because the foodstuffs come from government purchased surplus agricultural commodities. As Dana Vantrease explains, "most commodity foods are shelf-stable and preservative-heavy to endure storage and delivery. Many have questionable nutrition value. Most are not native to North America" and though they are intended to be "supplemental foods," they often become primary caloric sources (57). Eddy's comment that foodstuffs have a "long shelf life," is thus both reassurance of continuity and a reminder of the continuous violence of dispossession that renders "the commodity warehouse" the stuff of saintly remonstration. Here is a gastronomic detail that inscribes historical relations in a way that highlights legacies of injustice.

Just as Cedar's opening hunger gets juxtaposed with "fallow fields," Eddy's gas station food is gets implicitly related to land rights and food sovereignty. Shortly after the letter to Cedar, Eddy gets elected to a place on the tribal council. In the community college basketball court filled to standing-room only, he explains that, like most other reservations, their land was lost through incremental treaties and then largely sold off when the Dawes Act of 1862 removed land from communal ownership. He stands in front of a map where "the land owned by non-Indians is yellow. The green is State Forest. The Purple is tribal" (213). "'Over the next month" Eddy says, "you will see this map change. The green parcels can already be colored in—changed directly from green to purple. We have secured state land. The yellow is what we're working on now…We have used a lottery system to reclaim the property for our homeless, or tribal members living in substandard housing. We have also begun to house our returning urban relatives" (214).

As Little Mary colors the rest of the former reservation land purple, the older members of the audience weep. This is a rare moment where *Future Home* explicitly depicts a crowd of people—representation on the level of population. Eddy is in a standing-room only basketball court, thinking about housing for "returning urban relatives" and mechanisms of reclaiming territory for the growing tribal community. An expanding social network is articulated through a literal material expansion, development on the level of the collective accessed through prosaic details of agricultural and domestic possibilities.

Eddy is not just interested in land for land's sake—his vision of collective futurity is explicitly articulated through the production of food. In his new capacity as a tribal leader, he moves around the house humming and singing, and when he's done singing,

> He sits at the kitchen table with stacks of papers, old land deeds. He plots strategies. Thinks of survival measures, ways to draft our young people into working for a higher purpose. Where to get seeds. Pigs. Cows. Flocks of chickens. He wants to make the reservation one huge, intensely worked, highly productive farm. He's got gangsters growing seedlings in the grow-lighted aisles of casinos. He's got them raising free pot for everyone ever since a friendly Kiowa came north via Colorado and picked up the entire spectrum of medicinal varietals. (226)

Rather than subordinated to narrative filler, here the labor that undergirds metabolic maintenance is raised to the level of plot. This is a version of Cedar's critically-maligned grocery lists articulated at the scale of the collective, with explicit attention to process. Land that supported settler secondary lake-homes—another way of saying "fallow"—is seized and reimagined as space for hunting and farming. Cedar's individual plans for survival (beans and peanut butter from a big-box store) get recast outside of the structures of capitalist consumption, collective

agricultural labor put to the service of collective thriving. When Eddy hunts wild turkeys, when Cedar plucks those wild turkeys and relishes the "raw smelly job," and when those turkeys are roasted and served as a Thanksgiving feast for the entirety of the reservation, sociality is a product of the materiality of consumption, not an abstraction that pulls against it (247). If land-use planning does not support the normative arc of individual character development, it does explicitly depict development on a communal scale. Against the threat of the commodity warehouse leveraged by Saint Kateri, Eddy's work towards food sovereignty extends the possible through attention to the details of agricultural and domestic labor. Using Kyle Powys Whyte's terms, this kind of food system supports collective continuance.

In moving from prosaic details to hopeful futures, *Future Home* begins to look like a "wonderwork," or a text that resists the realism/speculative fiction binary in order to imagine otherwise. A "wonderwork," for Heath Justice, is an artwork that remind us that "other realities abide alongside and within our own," and does so in a way that centers "this possibility within Indigenous values and toward Indigenous, decolonial purposes" (153). The concept of wonder, he goes on to explain, has been increasingly taken up by indigenous writers and scholars. Brian Kamali Kuwada (Kānaka Maoli) and Aiko Yamashiro (Japanese/Okinawan/Chamorro), for instance, suggest that

> wonder changes us and changes our world. The act of bringing new life to our indigenous stories reawakens our lands and peoples to remember the power we have always had, to feed our families and strangers, to care for the past and future. Hope is fed by our ability to apprehend and trust our storied connections, by the rush of unexplainable movement, by the unruly growing of our love and gratitude for the strange and marvelous ways we live on. (20-21)

Wonder, in this framing, is less a question of genre than of relation—and an act of relation that explicitly evokes the work of care over time.

Against an approach that sees the prosaic description of grocery shopping and dinner organizing as "flat," *Future Home* sees the material practices of cooking and growing as moments of utopian promise. As Bruce Robbins suggests, policies and narratives centering these basic maintenance needs are a "a little dull, perhaps." But they are also, "things being the way they are, utopian. At any rate, here and now it's hard to see how one could not push for these…except on the theory that more social suffering will bring the system to a breaking point. The trouble with the theory is that while suffering worsens, the system isn't breaking. Maybe the best way to break it is to keep asking it can provide, but won't" ("Balibarism!"). Kuwada and Yamashiro recognize that "feeding our families and strangers" and "caring for the past and future" are acts that respect the hard work of continuity. Erdrich's novel*,* in foregrounding this relational work and its multiple possibilities, refuses the notion that the future is already determined.

2. The Epigenetic Everyday and Multi-Generational Metabolism

Erdrich's novel, for all its writing-to-the-moment plotting, is both explicitly and implicitly in dialogue with generational change and the possibility of genetic determinism. In thinking population at a scale of multiple generations, it both extends my previous discussion of metabolism temporally and converges with the vexed contemporary discourse around epigenetics. My concern with Erdrich's epigenetic everyday is indebted to Gillian Beer's work on the novel and evolutionary theory in *Darwin's Plots*. Evolutionary theory's "preoccupation with time and…change," Beer writes, "has inherent affinities with the problems and processes of narrative" (5). Texts like Eliot's *Daniel Deronda,* she explains, are fundamentally concerned

with the problem of inheritance: “Can there be new movements, new stories?” the novel asks. “Is it possible to rupture the links of descent and set out anew? (182).” In *Daniel Deronda, “*the present is thick with precedent, encumbered with the past and also implicating itself in multiple futures. But the model employed is not solely that of genetic or biological time. It is also that of imaginative reach, which can move in many directions and can include space and prophecy, revival, or revolution” (195). *Future Home* also describes a present thick with precedent and remains committed to imaginative reach. What I want to suggest in the following section is that the novel’s imaginative reach is usefully articulated in terms of epigenetic time. Specifically, *Future Home’s* engagement with nutritional epigenetics both works to materialize the social and warns that this newly materialized sociality is vulnerable to cooption by neoliberal frameworks of responsibility.

At first glance, *Future Home* seems much more invested in questions of genetic inheritance than epigenetic heritability. When Cedar decides to meet her biological parents, for instance, her decision is justified partially in terms of seeking information about her child’s genetic predispositions. “I wouldn’t have the slightest thing to do with them if it wasn’t for my baby,” Cedar writes. “Sweets, you’re different!…You deserve more. You deserve two sets of grandparents. Not to mention genetic info, which may affect who you are even beyond whatever is now occurring. There may be hereditary illnesses. Or unexpected talents—one can always hope, though that seems doubtful, given my birth mother’s letter” (6). In the context of the novel’s reproductive crisis, Cedar seeks a kind of security in genetic determinism: there is some limited comfort in notion that biology might be destiny. When Cedar finds out that Sweetie is also Catholic, for instance, she is thrilled: “here it is—inherited genetic congruence. I became a Catholic before I got in touch with my biological mother; Catholicism drew me” (13). She even

reaches to genetics to establish a sense of camaraderie with her silent hospital neighbor. "We possibly share the major DNA haplotype B marker found in most American Indians as well as people in Ulaanbaatar," Cedar tells Tia. "Not that all Native views coincide here, mind you," but as much as Cedar would like to believe she emerged from a tribal origin spot—hill, lake, cave, or mountain—she was "raised with a reductionist worldview and think[s] at least some of our people came across the land bridge" (134). As with the search for her baby's genetic predispositions, here Cedar makes a bid for connection via DNA. Even as she acknowledges her "reductionist" perspective and is careful to make sure she doesn't speak for "all Native views," her repeated turns to the genetic illustrate a certain conviction of its explanatory power.

To the extent this genetic fascination is set up against the backdrop of Cedar's adoption, Erdrich seems to offer almost a caricature of "nature vs. nurture." Cedar dwells on the genetic mysteries of her biological parents, but she also explicitly understands parts of herself to come from growing up with Sera. When they're hiding out at the reservation together, for instance, Cedar experiences a moment of recognition:

> Mom's working the dishes, cleaning the kitchen in that absorbed and militant way she has—working left to right she methodically wipes down each item and either puts it away of cleans beneath it and sets it back into place on the counter, properly aligned. She has taught me to clean the way she cleans and I have recognized it as one thing given to me through nurture, a tool I can use to stave off despair. I've soothed anguish and fought madness by minutes scraping at a stain on the counter or a burnt-in bit of soot on the side of the pot. (221)

Cedar recognizes Sera's stress-cleaning as part of her own way of being in the world; it's the same methodical approach we saw her implement earlier in her pregnancy, all those days waiting

for Phil to come home. As much as Cedar has worked to differentiate herself from Sera—adopting Catholicism, getting vaccinated on the sly, critiquing her parents' comfortable liberalism—here they are united in perseverance. She looks at Sera's "softened, soaked hands" and confesses, "I sometimes wish I could see my hands in her long thing fingers. My hands are more like Glen's hands, strong with big knuckles" (221). "Nurture" has power here, but in Cedar's wish for Sera's fingers, phenotypic expression of genetic heritage remains elusive and desirable.

This gets complicated, however, when it comes to Glen. Cedar has referred to her and Glen's similarities from the beginning of her diary. His eyes are "distant and black—people sometimes think that Glen is my real father" (60). His hair used to be totally dark, too, and there's the shared "big knuckles." So the reveal, when it comes, is not entirely surprising: Glen and Sweetie had an affair. Glen and Sera never told Cedar this so that Sera wouldn't have to deal with the insecurity of being the "less real" parent. Cedar was not adopted in some mysterious break of the Indian Child Welfare Act. But instead of providing the genetic certainty that she's so craved, this revelation leaves Cedar feeling lonely and betrayed. When she describes these feelings to Grandma Potts, who mentions her sexual encounter with a blue devil, Cedar's confusion is only deepened: "What sort of being am I, really?" she asks. "First I find that I am my father's actual child, descended of a line that goes back to Richard the Lion-Hearted. Then I find that my heritage is also bound up in a sinister blue man who impregnated my grandmother in a dream" (238-239). The initial separation of nature and nurture collapses with the understanding that Glen is both her adopted father and her biological father. Those categories blur still further with the help of Grandma Potts, whose model of inheritance includes dream-visits and devils. Taken together, *Future Home's* vision of heritability is much more

sophisticated than it initially seemed: a process where genetic traits, habitual environments, and family histories twine together. It is in this multi-modal articulation of heritability that *Future Home* begins to converge with recent epigenetic discourse.

More specifically, *Future Home* both incorporates and expands upon insights from the field of nutritional epigenetics, or the study of the effects of food and diet on gene expression. Following Hannah Landecker, I see an emergent discourse of "food as exposure" in contemporary discussions around metabolism, obesity, pregnancy, and nutrition. In this discourse, food is recast as a "miasma of biologically active molecules in which genomes are immersed, determining and disturbing the physiology of metabolic regulation with each new person that comes into the food world" (170). This is a model "in which food enters the body and in a sense *never leaves it,* because food transforms the organism's being as much as the organism transforms it. It is a model for how social things (food, in particular) enter the body, are digested, and in shaping metabolism, become part of the body-in-time, not by building bones and tissues, but by leaving an imprint on dynamic bodily processes" (177). When food is read as part of the "nurturing environment," it offers possible inroads into discussions of ecological risk and responsibility. It also contributes to the process ontology this dissertation seeks to engage. Erdrich's novel, while aware of the stakes of genetic discourse[23], is also intrigued by contemporary epigenetics' potential to fold the future into the present. In interviews—particularly interviews about her sister Heid's science-inflected poetry— Erdrich sometimes

[23] I read *Future Home* together with epigenetic discourses cautiously, as in some ways epigenetics merely extends the genetic discourses that have shaped popular understandings of identity, heredity, belonging, and futurity. As Kim TallBear explains, genetic understandings present "cause for worry because a too-heavy focus on genetics risks undercutting the legal foundations of Native American sovereignty and self-governance" (525). These articulations of Indigeneity "embed long-standing social and cultural notions of race that loop back to reconfigure social understandings as genetic—giving them added or a renewed legitimacy and power to affect peoples' lives" (TallBear 517).

seems to reference contemporary epigenome research with a kind of awe. Heid Erdrich's poem, "Now, Where Was She?" for instance, juxtaposes the subject's mental image of her mother with the epigenetic language of histones and DNA methylation ("When that egg was created that made you, your grandmother's diet was having some effect on how/ DNA was folding and being methylated. And her little dog, too, curls/ and folds, warming up to what has happened to grandmother's prairie home histones" (21).[24] Heid, Louise Erdrich explains, manages to get into "the area of human awe" while exploring the "fertile…world of science." She "loves to think about science and the science of pregnancy, so she's a real influence on me. Sometimes I sit down with her and her husband over a glass of beverage, and they love to talk about weird science-based scenarios. I'm very influenced by my family in terms of thinking about science and poetry" (qtd. in Demkiewicz). This influence is visible throughout *Future Home's* portrayal of the stakes of food and eating.

The epigenetic discourse of "food-as-exposure" appears most frequently along Sera's character arc. When Cedar introduces her parents, for instance, she explains that they are "forgiving people, Buddhists, green in their very souls. Although Sera is annoyingly phobic about food additives, and many years ago Glen had an affair with a Retro Vinyl record shop clerk…they are happily married vegans" (4). Already, Sera and Glen are defined by how they control their food environments —Sera avoiding additives, both parents avoiding animal products. The climactic scene of this policing comes when Sweetie, in a gesture of welcome, offers Sera a gas-station hot dog. Cedar freezes, well aware that Sera has

> often held forth on the thirty-nine different deadly carcinogens contained in cheap

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[24] Methylation is a common epigenetic signaling mechanism where methyl groups are added to DNA, changing the expression of a DNA segment without changing the sequence itself. For a useful case study on methylation and metabolism in agouti mice, see Landecker 174-176.

> hotdogs such as the one she is holding now. The nitrates are implicated in esophageal and stomach cancer, the red dyes in systemic foul-ups, the binding agents are bad as warfarin, and among the preservatives there is formaldehyde. And then there is the meat itself. Animal scourings. Neural and spinal material likely to contain the prions that transmit Creutzfeldt-Jakob disease. Hog lips, snout, anus, penile sheaths, jowls, inner ears…it is a chilling object, a powerful nexus of poisons representative of dumb, brutish animal suffering. (41)

The hot dog, in this moment, is less food than toxic environment—a delivery mechanism for nitrates and carcinogens and a vector for disease. It is both implicated in future human health and embedded in past animal suffering. The whole hog is broken into parts (penile sheath, inner ear), before being further broken down into chemical components. If nutritional epigenetics is directed "at the question of how things outside of the body are transformed into the biology *of* the body," proposing a "specific molecular route from outside to inside, and…a mechanism by which wars and famines and abundant harvests of one generation can affect the metabolic systems of another" Sera's hotdog diatribe plays on this very porousness (Landecker 178). She doesn't quite get into considering intergenerational effects, but in her chemical vision of the edible, she offers an explicit vision of food as environment.

Sera's food phobias, then, are interesting less for the specific contours of her concerns than for the imaginative structure they represent. When Sera rants about hotdogs as conglomerations of red dye and formaldehyde, she is participating in "the imaginative act of thinking, visualizing, and controlling food as molecules that interact with our internal molecules." And this form of vision has a particular, "boundary-dissolving effect: one's corporeality is much more vividly rendered as continuous with the landscape and social nature of

agriculture through the necessary act of eating" (Landecker 185). When Sera eats the hot dog that Sweetie gives her, she is putting the new relationship with her adopted-daughter's biological mother above her own principles. But the moment also dramatizes the way social information organized as race, class, gender, or economic status becomes embedded, "not only in the bodies of those who eat, but in their capacity for replicating their own conditions of production." Metabolism, here, becomes socially determined: an index of how capitalist systems determine the distribution of bodily fuel and bodily vulnerability. Sera, a middle-class Minneapolis white woman, can afford to avoid the chemically treated meat and its attendant health consequences. Taken alongside the discourses of epigenetics, her hotdog becomes an instance of how social structures are bodied forth.

Insofar as epigenetics encodes environmental exposures as biological difference, it offers promising support to arguments for social and environmental justice. As Becky Mansfield and Julie Guthman suggest, this is "an important advance for environmental justice movements in the face of ongoing denial that environmental chemicals have biological effects" (45). Epigenetic framings also have the potential to "shift the focus away from the individual—and how their genes or behavior create their bodily outcomes." Instead, "by focusing attention on the broader environment, it suggests collective causation and responsibility for broad health outcomes" (45). This shift away from genetic determinism and towards collective causation means that some have hailed epigenetics as an "anti-racist" science. In rejecting race as a fixed biological category in favor of illustrating how *racism* produces biological difference, Mansfield and Guthman explain, "epigenetics seems to be the life science for which many of us have been waiting" (45). Further, Zakiyyah Iman Jackson writes, epigenetic models are both "nonteleological and dynamic," allowing not only "for stability, but also nondeterminacy and even unpredictability

with respect to gene expression" (178). In providing rigorous mechanistic explanations for the body as social all the way down, as well as making interpretive space for stochasticity and change, epigenetics appears to have real potential to counter racial determinism and corporate denials of environmental impacts.[25]

Perhaps as consequence of the expansion of the reach of the social, the epigenetic frame's emphasis on process also expands the reach and utility of narrative. Narratologist David Herman makes this point explicitly. The fact that these new, supra-genetic inheritance systems can influence evolutionary change, for Herman, means that

> some of the factors bearing on speciation and species change lend themselves to being profiled in narrative terms; it also suggests how, in the case of humans at least, storytelling practices may have themselves contributed to as well as emerged from the evolutionary matrix…To sum up: even as narrative helps sustain the traditions that give shape to human communities, across a range of timescales, stories can also be used to characterize the species-shaping inheritance of traditions in communities beyond the human. (293)

Put in blunter terms, insofar as stories make up the social, the fact that social dynamics can produce heritable biological changes makes narrative an agent in evolutionary inheritance. Further, because these changes occur at the scale of the individual life but can have durable evolutionary consequences, epigenetic discourses open new possibilities for "storytelling at the

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[25] While I'm wary of performing a too-neat collapse of "progressive causes" and "humanistic approach," in the context of this project it also seems important to note the consonance between epigenetics' ontological implications and certain regnant threads of critical theory. As Mansfield suggests, "humanists and social scientists explicitly aim to overcome entrenched ideas of modernity (e.g., of human nature dualism and human exceptionalism) as biologists and earth-scientists discover new ways that the boundary between nature and society…is blurry at best," (2017, 166). These efforts find a point of convergence in epigenetic theory.

species scale" (60). Read as an instance of the "epigenetic everyday," Cedar's social and sexual reproduction—and her *descriptions* of that reproductive labor—leverage broader concerns of futurity on the scale of the aggregate.

Erdrich's "flat" description is thus a formal mode reflective of the epigenetic discourses it engages. As Nikolas Rose explains, "the 'biology' that came into existence in the nineteenth century was a biology of 'depth.' It tried to discover the underlying organic laws that lay behind and determined the functioning of closed living systems. But contemporary biology operates, at least in part, in a 'flattened' field of open circuits" (15). In contemporary molecular biology, "the search is not for simplifying underlying laws but precisely the reverse: for dynamic, complex, open systems, combining heterogeneous elements, to predict future vital states and hence to enable intervention into those vital systems to reshape those futures" (16) Insofar as this new biological thought is scale-spanning and process-oriented, it converges quite naturally with questions of description. To the extent that this new biological thought tries to describe and model the complex systems of the world, it is confronted with some of the questions that literary scholars are particularly good at wrestling with. What are the things in a model world that count as meaningful? Are they the sandwiches? The relationships? The psychological depth? *Future Home's* flat narration of the stuff of the everyday, in conjunction with the "flat" descriptive field of contemporary biological thought, counterintuitively serves to access the challenging representational scale of species survival. Against a fixed relation between the vitality of a household and the vitality of the nation, Erdrich accesses a vertiginous scalarity where domestic decisions simultaneously operate on the level of the gene and the level of population.

Even as *Future Home* encodes the social and narrative potential of genetic plasticity, in scaling up (and scaling down) the stakes of domestic labor, it also examines epigenetics' more

troubling implications. For one thing, the discourse of food-as-environment is particularly fraught in the context of maternity, shifting the responsibility for fetal health onto the individual decisions of the maternal parent. As Cedar eats throughout her pregnancy, for instance, she is often focused on "extracting" nutrition for her child. As Jackson explains, epigenetic studies "aver that a fetus faced with undernutrition might take adjustments to rate of growth, reduce nutritional requirements, and even modify the structure and function of organs and other systems involved with metabolism and physiology." These modifications are "believed to have effects that linger on into adulthood, influencing the development of chronic disease" (134). While the food at the birthing center is disgusting, Cedar understands its consumption as a kind of maternal duty. She and her roommate, Tia, "pretend to be absorbed in…a documentary movie about the reproductive lives of penguins," and when lunch comes, they eat "it all swiftly, trying to absorb nutrition before [they] actually taste the food" (148). Later, when Cedar has successfully escaped her first confinement and Sera hands her a packet of nuts, she tries "to eat each one slowly, carefully, extracting the max in flavor and nutrition" (196). This is, of course, partially out of self-interest: to escape, Cedar has to be strong enough to move and climb, and strength requires nutrients. But it is also partially in service to the unborn child. "We're climbing back down the swimming-pool ladder into the primordial soup," Cedar writes early in her narrative. "We pregnant ladies find this out and make sure to make our folic acid supplements and get some sleep, all while growing within ourselves a unit of life" (68). In the apocalyptic context of "de-evolution," theocratic autocracy, and rampant climate change, the burden still falls on the individual mother to create a healthy environment for her child

Just as in the case I examined in chapter two, where resilience discourses shifted the burden of responsibility onto vulnerable populations, here individual pregnant women shoulder

the burden of a failed state. The biological mutability which I discussed above as having promising implications for environmental and racial justice movements becomes troubling in its apportioning of blame to individual subjects. “The ability to choose is taken for granted,” Jackson writes, “In this liberal project, the problem is non-white women, who do not properly protect themselves and their offspring. If they fail in their choices—fail as liberal subjects—they cause harm to themselves and their children” (139). As Mansfield and Guthman explain further, epigenetics has emerged as reproductive technology “in which women, especially women of color, become responsible for eliminating ‘abnormal’ biological differences and optimizing good ones, in the name of improving life itself. While the focus is on the fetus, it is reproductive women—who are reduced to intrauterine environments—who become key actors in the epigenetic story of life” (15). In sum: epigenetic discourses might be seen to erode the distinction between social and maternal reproduction. The maintenance of the uterine environment—in terms of nutrition, in terms of clean air, in terms of social stress—becomes directly tied to the health of the baby.

In a striking narrativization of the way epigenetic discourses might reduce reproductive women to “intrauterine environments,” Cedar even explicitly understands herself as a kind of homeland. After a harrowing present-tense description of Tia’s labor and stillbirth, Cedar marvels at the continued presence of her own child. “Her baby’s gone and you are here,” she writes, “And I am all around you. I am your home, a land of blood and comfort” (188). In this context, with the body as “home," Cedar’s patterns of consumption become a kind of domestic labor—eating gets rearticulated as keeping house. She and Tia share three cans of soup. Sera brews tea, “hot raspberry, good for the uterus.” Drinking raspberry leaf tea, extracting nutrients from nuts, being mindful of folic acid: Cedar’s diary exposes the labor of care that proceeds the

labor of delivery. Biological mutability, raised here as the specter of "de-evolution" and the conception of food-as-environment, quickly morphs into maternal responsibility. If eating is sometimes considered a pleasure outside of the linear patterns of reproductive futurity (a transcendent moment with a cream puff, say)—here it is fashioned as a "disciplinary technology through which the correct racial embodiment is ordered and politics is wedded to the biological life of the citizen" (Wazana Tompkins 59). This is eating for The Child in the abstract (a stand in for the survival of the human race) and for the specific child in Cedar's womb. While the sensual pleasures of hot soup and warm tea remain, they are shot through with generational responsibilities—and so fold the future into the quotidian now.

This means, among other things, that the "epigenetic everyday" incorporates both collective history and future possibility even as it facilitates discourses of individual responsibility. As Mansfield explains, "epigenetic temporality...extends the threshold of fetal life non-linearly by folding time to include in the present possible future fetuses, even generations hence...Because current exposures will affect future fetuses, multiple generations of fetus are projected from the future into the present as the target of concern" (374). This creates a logic whereby what matters is the endlessly receding future: if the goal of epigenetic intervention is to "shape later outcomes, for the individual these outcomes are constantly deferred for their influences on the next generations" (374). Acting for the future, in other words, creates a kind of enduring present: "in the name of the future, we must act now, and now, and now, forever. In this folded temporality, the epigenetic fetus is the vulnerable and intervenable present moment of plasticity, always here and now" (374). In orienting her present-tense narration toward a fetal audience, Cedar's narrated everyday works on generational, even species-level, scales. The "folded futurity" of epigenetic frameworks, here, means that descriptions of quotidian

environments become loaded with trans-temporal significance. As the burden of responsibility shifts onto individual mothers, or individual liberal subjects more broadly, the daily labors of social reproduction[26] become a key site for accessing the scalar sweep of the Anthropocene.

3. Getting out of the House: Trans-scalar Domesticity and the Rules of Notice

Erdrich's simultaneous invocation of species-level population concerns and the contours of an individual's hunger means the everyday becomes a rich site of encounter with the more expansive temporalities of climate change. Taking Peter Rabinowitz's "rules of notice," not as a prescription but as a description of "patterns readers learn and deploy over the course of their experience with narratives," in this section I suggest that *Future Home* offers a narrative experience that changes those rules (78). In repeatedly dramatizing the importance of dinner and domestic labor to the survival of humanity, as well as the way these habitual practices can work as metonymic springboards into geologic scales, Erdrich's novel creates the conditions of possibility for a new pattern of attention. As Eric Morel suggests, cli-fi's recent proliferation "offers an emerging mass of texts that may habituate readers to alternative rules, which may then collide with the old ones as those readers engage earlier texts" (78). In a formal echo of the novel's epigenetic themes, the description of everyday life becomes a literary mechanism for grappling with the change to come. If *the Overstory* attempted to re-orient interpretive

[26] In this chapter and throughout I used "social reproduction" in the broad (as opposed to specifically Marxist) sense. I particularly like this explanation from Barbara Laslett and Joanna Brenner: "feminists use social reproduction to refer to the activities and attitudes, behaviors and emotions, responsibilities and relationships directly involved in the maintenance of life on a daily basis, and intergenerationally. Among other things, social reproduction includes how food, clothing, and shelter are made available for immediate consumption, the ways in which the care and socialization of children are provided, the care of the infirm and elderly, and the social organization of sexuality. Social reproduction can thus be seen to include various kinds of work-mental, manual, and emotional-aimed at providing the historically and socially, as well as biologically, defined care necessary to maintain existing life and to reproduce the next generation" (382-383).

hierarchies toward the natural setting, and *Happiness* re-cast description as a source of narrative energy, *Future Home* wagers that narratives of domestic labor are surprisingly useful in describing the temporalities of climate crisis.

Insofar as *Future Home* is an apocalyptic narrative that foregrounds the habitual labor of food and care, it provides a useful counterpoint to some classic theorizations of the apocalyptic form. In "The Imagination of Disaster," for instance, Susan Sontag begins an analysis of the aesthetics of catastrophe by describing the key moves in a "typical science fiction film." With minor variations, the plot moves like this: in a country's capital, scientists and military officials meet and declare a national emergency. All international tensions are then suspended in light of this pressing planetary threat. There is a rapid montage of news broadcasts, a UN meeting, and then plans are made for destroying the enemy. "The lure of such generalized disaster as a fantasy," Sontag suggests, "is that it releases us from normal obligations" (215). Elana Gomel, for her part, refers to this lure as "the eroticism of disaster." "All apocalyptic and millenarian ideologies," she writes, "ultimately converge on the utopian transformation of the body (and the body politic) through suffering" (406). The implicit logic here suggests that "the hellish is the sublime, that any catastrophe is better than the status quo" (426). Apocalypse, for Sontag and Gomel, is figured as a release from normal obligations. The promise of an ending is attractive, in part, because it entails the end of the grind of domestic labor. The apocalypse will not have shopping lists.

This notion that crisis and the quotidian are somehow in opposition is evident in much of the discourse around climate change, although recent ecocritical work challenges that frame. As Philip McReynolds points out, the science fictional fantasy of a single event bringing collective clarity is also visible in the "dominant narrative of science fact, at least in the way climate

change is presented. The idea is this: in climate change, humanity faces an existential crisis of such great proportions that the only rational thing to do is to suspend all other conflicts and concerns" (78). This thinking is visible, too, throughout Ghosh's *The Great Derangement*: climate change happens through exceptional events, and realist fiction is formally dependent on obscuring those events with the stuff of everyday life... But, as Reynolds continues, "the problem with climate change, one that prevents it from conforming to the simplistic apocalyptic fantasies of science fiction films is that it is not, as Dipesh Chakrabarty notes, 'a one-event problem'" (79). Unlike the planetary threats in Sontag's opening, climate change "cannot be addressed by sweeping or setting aside all of the other national and international conflicts that trouble us today because *it is not separate from them.* Rather, it is composed of them" (79 Emphasis original). Frederick Buell puts this even more starkly, suggesting that climate change is not just tangled up in international conflicts, it is also embedded in the patterns of daily life. Environmental crisis, he writes, "has become more and more a place in which people dwell, a context in reference to which they represent themselves" (250). Literary and popular culture, then, ought to represent environmental crisis as "part of people's daily, domestic experience . . . problems that people now cope with daily, not just nightmares the future will bring more fully out" (280). Buell's point, here, slides easily into the argument about genres of cli-fi that frames this project—he wants climate stories to represent the now, the domestic, the daily? Sounds like realism to me

Erdrich's *Future Home,* however, provides a useful challenge to this kind of too-easy generic alignment. In the context of the novel, the "problems people now cope with daily" and the "nightmares of the future" are not separable. The everyday is shot through with apocalypse. Larry Gross (Anishinaabe) puts it like this: "Native Americans have seen the end of their respective worlds… Just as importantly, though, Indians survived the apocalypse." Or as Kyle

Powys Whyte explains on the more specific question of climate change, “as Indigenous peoples, we do not tell our futures beginning from the position of concern with the Anthropocene as a hitherto unanticipated vision of human intervention, which involves mass extinctions and the disappearance of certain ecosystems. For the colonial period already rendered comparable outcomes that cost Indigenous peoples their reciprocal relationships with thousands of plants, animals, and ecosystems—most of which are not coming back” (159). Eddy explains something very similar to Cedar. At that first lunch, when she asks him what is going to happen next in the great unfolding chaos, he tells her that “Indians have been adapting since before 1492 so I guess we’ll keep adapting.” The world “is always going to pieces,” Eddy continues. “It is always different. We’ll adapt” (28). The apocalyptic imaginary that structures much of climate discourse—with all its emphasis on unprecedented anthropogenic change and “the end of the world as we know it”—elides those for whom an apocalypse has already happened, and those to whom it keeps happening. It also obscures much of the labor that enables living in a world “that’s always going to pieces”—the very labor that apocalypse is supposed to render obsolete.

The apocalyptic climate imaginary in Erdrich’s novel, by contrast, is explicitly articulated through domestic labor and familial relations—a folding of future into present akin to the epigenetic temporalities discussed earlier. Instead of reaching into the specific language of epigenetic discourse, however, Erdrich achieves this folded temporality through a careful splicing of climate crisis and routine interaction. When Cedar leaves her adopted parents in Minneapolis to go find her birth mother, her stepmother, Sera, tells her to be careful. “We don’t know,” Sera says, “This could be a new kind of virus. Maybe bacteria. From the permafrost. Use hand sanitizer, okay? Will you call us when you’re there and call us when you get back?” (8). Encoded in a familiar expression of maternal care (wash your hands! Call me when you get

home!) is a specter of environmental crisis. Sera is fuzzy on the details—it could be a virus, could be bacteria—but the sense of ambient ecological threat from the melting permafrost is very clear indeed. Erdrich performs this doubling of domestic care and crisis over and over. When Cedar has returned from her trip, for instance, Sera copes with the uncertainty of the future by making cornmeal pancakes. She passes them to Cedar on plate with whipped butter and "expensive real maple syrup from Canada because maples here no longer produce" (60). She's always loved making Glen and Cedar artful snacks— "made-from-scratch Chicken soup" when they were sick, "bowls of garlic mashed potatoes" when they were sad, and now "cornmeal pancakes to stave off the apocalypse" (60). Again, quotidian expressions of love become the aperture for seeing climate change—the maples have marched north in pursuit of cooler temperatures, their flight marked in the price of syrup.

Concern over rising temperatures gets reiterated throughout Cedar's diary, often similarly embedded in everyday activities or relations of maternal care. When Cedar flees her parent's post-pancake lovemaking, she walks out to the kitchen, pours a glass of "antibiotic-free milk," and drinks it "looking out at the bursts of zinnias, daisies, lithium, and digitalis in the yard—they still look normal, no change in their colors yet. This is an unusually cool day for August, which means it is only ninety degrees" (55). There are enough distinct environmental concerns embedded here that climate change seems almost like an afterthought. As the antibiotic-free milk works to signify Sera's maternal care (and her brand of liberal piety), the carefully detailed plant names both extend the reach of that care to the suburban garden, and explicitly raise the specter of devolution. The comment on the heat, in that context, reads almost like small talk about the weather—90 is just hot enough raise an eyebrow if one is paying attention, just cool enough to seamlessly blend into the imaginative haze of August.

But these comments accrete, and by the novel's end they build to something both striking and mournful. In September, when Cedar is back at home hiding out with Phil, she hopes for a "slight edge of coolness in the morning air, just a hint of the fall I remember from childhood…As for winter, that is gone, a ghost season" (110). This temperature-tracking culminates in the diary's final pages. "My dear son," Cedar writes, "I know you're going to read this someday. I can tell that you're going to wonder what it was like, in the *before.* My parents would tell me things about the world, the way it was before…I would ask them, What was it like, years ago? The real cold the deep cold? And they would tell me." Cedar then shifts into the lyrical, describing the "rending moans where the ice met the islands," the way the "shards tinkled together and rang off key" when the waves drove hard, the way quick temperature drops made the lake freeze clear, trapping leaves or even small fish (264-265). The last snow that Cedar remembers happened when she was eight, "Cold robins trilling as flake by flake snow collected…it snowed on each pine needle, on the tips of the pickets, on the cars. "And I have wondered," Cedar writes in her diary's last sentence, "ever since your birth. Where will you be, my darling, the last time it snows on earth?" (267). By virtue of the final remark to her child—itself a reminder of maternal responsibility—Cedar's mediation on the weather becomes a meditation on changing climate. Toggling from her child's individual experience to weather patterns on a geohistorical scale, Cedar's narration again returns her readers to the scale of the collective.

This is the kind of toggle that is supposed to be impossible, or at least very difficult, for realist fiction. As Ursula Heise notes, climate change "poses a challenge for narrative and lyrical forms that have conventionally focused above all on individuals, families, or nations, since it requires the articulation of connections between events at vastly different scales" (205). Cedar's

diary, concerned as it is with personal experience and immediate familial relations, seems from this vantage uniquely unsuited to representing climate change. As Susan Fraiman explains, to privilege the study of domesticity is to side with a cluster of inferiorized categories, “all of them coded as ‘feminine’ and subordinated to their opposing ‘masculine’ terms. These include the ordinary, familiar, and quotidian, the detailed, insignificant, and small in scale; the bodily and especially the tactile; the emotional, subjective, and personal; the enclosed, introverted, and local; the dependent, relational, and maternal” (17). To the extent that climate change narratives are normatively understood to be extraordinary, large-in-scale, collective, and global—a curiously masculinized adjectival spread—*Future Home’s* explicit privileging of these subordinate categories seems to hamstring its cli-fi credibility. But following Morel and Rabinowitz, the proliferation of cli-fi narratives are habituating “readers to alternative rules” of attention, which “may then collide” with older habits of notice and interpretation (78). *Future Home* suggests that one of these new “rules” is a refusal of any fundamental thematic opposition between the climate apocalypse and the domestic quotidian.

Instead, the domestic and its attendant feminized categories are a narrative springboard for the Anthropocene’s scalar sweep, an echo of the folded temporality of the epigenetic everyday. This infrastructure is perhaps most visible in the novel’s direct engagement with geologic time. Cedar is the first to admit that time at that scale is conceptually unwieldy: “in terms of time,” she writes, “a million years is almost ungraspable. My brain wobbles when I go past recorded history…I positively can’t go to billions—the 4.6 that is our planet’s age, or imagine 100 million years, which is the amount of time that dinosaurs were the dominant life-form on earth” (57). Yet even as she asserts its inaccessibility, geologic time creeps into her everyday experience. Little Mary’s room, for instance, becomes a kind of miniature

paleontological dig: “stratified layers of clothing” scattered with “potato and corn chip bags,” as well as “cans of pop she hasn’t even drunk dry” (37). There are “layers of Chinese lady beetles from last fall’s infestation,” and “thongs like aggregate rock, glued into patterned bricks” (40). As last-fall’s lady beetles get juxtaposed with the large-scale crush of time that sutures crystals into aggregate rock, dirty thongs become a surprising entree into geologic temporality.

When Cedar is imprisoned at the Stillwater Birthing Center, geologic time (via Eddy’s manuscript) becomes a source of solace. On page 3034, the excerpt Cedar copies into her December 13th diary entry, Eddy explains that he lives “yet because of a common pebble.” After a morning of coffee, dry cereal, and ambient despair, Eddy finds himself again contemplating suicide. “As I walked with a length of rope toward the woods out of the back of the shop,” he writes,

> a pebble flipped into my shoe. It hurt. Each step was painful. I stopped, and removed it. The stone was a bit of ferric oxide, earthy banded hematite, strayed from the Mesa Range, where one-third of the world’s iron ore was at one time located. This piece of stone was laid down as sediment in the Animikean sea sometime during the middle Precambrian period in Minnesota, and was probably between 2.6 and 1.6 billion years old…I tossed it over my shoulder and continued down the path. (260)

As Eddy walks he gets another pebble in his shoe, and then another, before stepping on a sharp bit of agate and deciding to turn around. As in the case of teenage room-cleaning, here a quotidian detail becomes a catalyst for trans-temporal thought. The ordinary discomfort of a rock in one’s shoe opens into the disorientation of deep time, and Eddy’s sense of an imminent ending becomes a sense of continuity. Cedar, contemplating her own imprisonment and the “vast field filling with tiny white crosses,” each of which represents a mother and child who’ve died at

Stillwater, implicitly considers both her own eventual death and the species-level death indexed by the vastness of the graveyard before her (259). Yet in reading and drawing strength from Eddy's parallel encounter with mortality and deep time—Eddy who is kin but not by blood—Erdrich suggests a model of collective futurity prioritizing social relation, not genetic inheritance. Cedar's reading of Eddy's encounter with billion-year-old stones performs *Future Home's* materialist hierarchy of attention in miniature. Dry cereal, an old rock, a pair of loafers: doubly written down (in Eddy's letter to Cedar within Cedar's letter to her child), these objects become crucial sites for imagining continuity.

When Cedar is cleaning Little Mary's room, or reading Eddy's meditation, or even wondering where her unborn child will be at the moment of the last snow, she is articulating relations of care. These kinship networks afford surprising metonymic links to planetary scales. Read alongside relational axes of futurity, pebbles and thongs index the longue dureé, and snowflakes shift from "weather" to "climate." Objects, even ephemeral ones like snowflakes, get wrapped in generational time scales that suggest the future even as they sit in tension with the background threat of species extinction. As Stephanie Turner suggests, extinction is an "unimaginable endpoint in the drama of threatened and endangered" (57). It is hard to conceive because "we cannot imagine an ending without also imagining what happens after it, that is, the recuperation of the loss" (57). Erdrich's choice to write this novel in address to a member of the next generation makes this dynamic explicit. The specter of extinction, here, draws up an accompanying emphasis on continuity. And yet this simultaneous sense of ending and beginning creates a cognitive dissonance that supports the access to large time scales and modes of relation beyond genetic inheritance. This is not a final endorsement of genetic determinism but an affirmation of the way care relationships help to proliferate possibilities.

In writing scenes of collective care and domestic maintenance as narrative sites for encountering climatic and cultural apocalypse, Erdrich endows that labor with utopian potential. Returning to Kuwada and Yamashiro, "hope is fed by our ability to apprehend and trust our storied connections…by the unruly growing of our love and gratitude for the strange and marvelous ways we live on" (20-21). Erdrich's attention to the prosaic labor of making a home and making a community celebrates it as one of the "strange and marvelous ways we live on." This is work that is not going away, it is work that is crucial to account for in imagining a better world, and it is work whose sheer ubiquity means it offers counterintuitive and powerful tools for accessing problems at scales of abstraction. In the next chapter, on Lucy Ellmann's *Ducks, Newburyport,* I will try to hold on to domestic description's future-opening force in the context of a novel set explicitly in the dystopian present.

CHAPTER FOUR

All Together Now: *Ducks, Newburyport* and Climate Anxiety's Molecular Form

As the protagonist of Lucy Ellman's 2019 *Ducks, Newburyport* muses over the complexities of tartes tatins and accidentally steps on her children's toys, she also frets over gun control, police brutality, and environmental degradation. Fretting, in fact, could be understood as the novel's primary mode. The narrator's single-sentence monologue veers between large threats and small ones, between worries at both molar and molecular scales.

When the narrator muses on declining water quality, for instance, she shifts easily from conventional scope of realist description to perception beyond the reach of the naked eye. Dwelling on her local Ohio context, she informs readers of "the fact that the Cuyahoga started catching fire in 1868, the fact that the Cuyahoga caught fire in 1868, 1883, 1887, 1912, 1922, 1936, 1941, 1948, 1952, and 1969 and nobody did anything about it" (312). Here, a river catching fire is dramatic visualization of pollution, a fantasy-book image that, grounded in environmental fact, becomes the sobering stuff of historical realism. But the narrator also worries about waterways at scales much less suited to classical representation. In the groundwater at the Conesville power plant south of Coshocton, she explains, they've found "excess calcium, magnesium, sulfate, iron, arsenic, boron, barium, cadmium, chromium, and selenium" (871). "Our water is full of TTHMs, HAAF, TTHMs," she confides elsewhere, "and it's way above government guidelines on other stuff, too, the fact that we've got a whole lot of ppbs of bromodichloromethane, when the recommended ppbs limit is much less" (610). In these instances, a molecular imagination renders environments visible at newly threatening scales.

Ellmann's concern with the molecular coincides with a variety of humanistic studies that read the molecular as a key category for understanding contemporary life. This is evident in

Giles Deleuze and Félix Guatarri's discussion of fascism as dangerous for its "molecular power," Jordy Rosenberg's reading of the "molecularization of sexuality" as the limit point of ontological discourse, and Michel Foucault's discussion of "molecular history" as the work of uncovering invisible institutional acts. For my purposes, I will begin with "the molecule" in more strictly scientific terms—as a literal object and building-block of being. Molecules are electrically neutral groups of two or more atoms held together by chemical bonds. Although there is some quibbling about this definition, they are generally taken to be the smallest particle of a given substance that retains the composition and chemical properties of that substance. Molecules are small, mobile, and largely invisible to the naked eye. Encountered at the molecular level, many of the structures of everyday life become unfamiliar. As Gillian Beer explains, "realism is stretched further when its topic is the unseen, the unheard, the unregistered: that which lies beyond the reach of our unaided senses. It is also then released from some of the constraints of mimesis" (194). When ontological structures are no longer perceptible, in other words, the realist task of ontological description has more space for play.

This is where questions of molecularity intersect with questions of realist novel form. Realism, in the words of Frederic Jameson, has long been discussed as "an epistemological category framed and staged in aesthetic terms" (261). In light of the emphasis on epistemology, the bulk of critical conversation has focused on *how* we know what we know about reality, rather than *what* it is that we actually know. But this "what" has radically changed, even over the last twenty years. Among historians of science there is a growing consensus that twenty-first century developments in biotechnology mark a decisive break in the way life is apportioned and understood (Rose, Landecker, Keller, Shukin). This is, in part, due to a shift in the scale in analysis. As Nikolas Rose explains, contemporary biology increasingly works at the level of the

molecule instead of the level of the gene. “Molecularization” has become a “style of thought” for contemporary biomedicine, one that envisages life “as a set of intelligible vital mechanisms among molecular entities that can be identified, isolated, manipulated…” (5-6). Molecularization, in other words, renders vitality mobile. It also means vitality crops up in areas that had been previously determined inert. Both these factors suggest that realism, a mode primarily concerned with parsing vitality at the meso-scale of human life, is open for reinvestigation in this molecular moment.

Ducks' periodic shifts into the molecular—its consistent invocations of the “unseen, the unheard, the unregistered”—are particularly striking in light of its interiority-driven narrative style. This style, (as well as the fact that Ellmann is the daughter of James Joyce's most famous biographer) means *Ducks* is often put in explicit relation to modernist form. In conventional critical terms, this means the novel’s orientation might be said to shift inwards, from representing "fictional worlds to fictional-worlds-as-experienced" (Herman 247). But the story of the modernist inward turn is increasingly put under pressure—both by developments in postcognitivist theories of the mind, and by work under the capacious umbrella of "new modernist studies."[1] In this essay, I will argue that *Ducks, Newburyport* also challenges the critical assumption that stream-of-consciousness interiority means moving away from the collectively experienced exterior world. Yes, *Ducks* records the atoms that fall upon the mind, but it is also a novel explicitly invested in the molecular make-up of Ohio rivers, rising CO_2 levels, and phthalates in sea salt. In toggling between anxieties at concatenated scales, the novel charts paths from individual despair to collective consciousness—a scaling-up that is particularly important in the context of global climate-crisis. If, as Heather Houser explains, it is "emotion that can carry us from the micro-scale of the individual to the macro-scale of institutions, nations

and the planet," then "affect-theory can clarify how that scalar transference works" (223). Following Houser, this essay will look to affect[27]—specifically the management of anxious affects—to tease out what Ellmann's novel might have to add to the larger conversation about literary form and climate fiction. Negative affects in climate literature have increasingly been dismissed as counterproductive or despair-inducing [28], and so the inward-facing fretting of *Ducks, Newburyport* might seem an odd choice for locating a utopian climate politic. Taken together, however, affect theory and material ecocriticism gesture toward a way out of the seeming impasse of an "inward" novel deeply invested in the collective externality of climate change.

In fact, by telling a story of the ecological sublime[29] that attempts stage modes of managing sublimity, *Ducks, Newburyport* might be productively read as an experiment in moving from the scalar amorphousness of "affect" to the more manageable limits of "emotion." The novel does this, in part, through what I'm calling "molecular form," or the literary

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[27] Throughout this chapter I use affect in geographer Ben Anderson's sense of the term "affect" as "the transpersonal or prepersonal intensities that emerge as bodies affect one another" (78). This usage marks a departure from the psychological/neuroscientific tradition that locates affect "within" a human individual. It doesn't, however, mean a sharp departure from the more familiar category of "emotion," which I use here to simply to mark a particularly intense (and more verbally articulated) form of affect.

[28] See, for instance, Matthew Schneider-Mayerson's '"The Influence of Climate Fiction: An Empirical Survey of Readers," as well as Jack Dudley's "Beckett, Atwood, and Postapocalyptic Tragicomedy," for accounts of the affective range and impact of recent CliFi.

[29] In using "ecological sublime," here and throughout, I am invoking Christopher Hitt's landmark 1999 *NLH* essay, "Towards an Ecological Sublime." However, while Hitt is interested in the way the traditional natural sublime "involves what look to us like ecocentric principles" (607) and might usefully harnessed in realizing "a new, more responsible perspective on our relationship with the natural environment" (605) my usage here is more critical. In the context of *Ducks,* a novel with little time for mountain-contemplating, the ecological sublime is much closer to what Allan Stoekl calls a "sublime of externalities," or the "awe before the sheer task of calculating sustainability" (45). Rather than a sense of being humbled before the majesty of nature, the ecological sublime in *Ducks* involves trembling before the sheer enormity of consumption and scale of the environmental crisis. But it also seeks to find something beyond individual consciousness in that encounter.

vertiginousness that results when a text consistently engages matter below the meso-scale of human perception. *Ducks, Newburyport* encounters the sublime in the everyday primarily through its concerns with mobile matter and particulate porousness. The realization that the chemicals from the hog farm down the street are also in your children's water, for instance, turns the simple act of offering your kid a drink into something scary on both the macro (the ongoing effects of industrial agriculture) and micro (the hog chemicals now making their way into your porous kid) scales. By simultaneously modeling strategies for individually managing these anxieties and undercutting the very notion of an individual, Ellmann gestures towards the care-work of maintaining the collective as crucial to any possibility of preserving a livable world.

I begin this chapter by putting *Ducks* in relation to both the popular-criticism category of "hysterical realism," and the recent psycho-social phenomenon of climate anxiety. From there, I explain how climate anxiety takes on new force in the context of the molecular imagination: the shift in scale both opens new political horizons and new political traps. In prioritizing the maintenance of the family unit over maintaining the grounds of collective well-being, *Ducks* displays the limits of maintenance at the scale of the nuclear family. But it also suggests that maintaining felt stability in the face of crisis remains important work. In the chapter's final section, I describe two of *Ducks'* formal strategies for new scalar anxieties: breaking things up and blanking things out. The repeated use of these strategies throughout the novel creates a slippage between reader and narrator, ultimately producing a sensation of collectivity grounded in climate vulnerability instead of national identity.

1. Critical, Hysterical, Anxious

In these long quarantine months, my copy of *Ducks, Newburyport* has served as a yoga block, as a base to lift my laptop's camera to a more flattering video conference angle, and as a

sight gag when my family, over Zoom, asks me if I am working. *Ducks* is vibrantly colored and difficult to keep open when one wants to copy out a passage. Closed, it is 2 and 3/4 inches thick and 7 and 3/4 inches tall. My copy is 1020 pages if you include the appendix, 988 if you do not. Reviews of the novel inevitably turn to such quantification, some variant of size anxiety permeating most appraisals:

> "There is a certain kind of reader (I am this kind of reader) who will think: Yes, hooray, but couldn't this have been accomplished in half the length, at a respectably brawny 500 pages? Is the length justified?" (Parul Seghal, NYT).
>
> "*Ducks, Newburyport*, does not, despite the claims of some reviewers, consist of a single sentence (I counted 880)" (John Day, LRB).
>
> "The fact that 95% of the novel is made of just eight near-endless sentences, without paragraph breaks," (Alex Preston, Guardian)
>
> "I'm planning to get 'ONE SENTENCE NOT EIGHT' put on my tombstone. That should settle the matter, right?" (Ellmann, in an interview)

Discussions of the novel's size and formal experimentation almost inevitably circle back through questions of gender. Responses to *Ducks* are littered with comparisons to (mostly male) authors of other big books: How to frame Ellmann's madcap maximalism? "Think David Foster Wallace, William T. Vollman.[30]" *Ducks, Newburyport* is a "Moby Dick of the kitchen," a book to "compare with… William Gaddis's J.R.," or, inevitably, James Joyce's *Ulysses*. This fleet of comparisons—frustrating insofar as it indexes contemporary reviewing's tendency to understand all experimental fiction through Wallace and his ilk—is also useful in that it throws *Ducks*' departures from that tradition into clearer relief. "What's most unusual about *Ducks,*

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[30] From assorted reviews in opening flap: Josh Cook, Porter Square Books, and James Crossley, Madison Books, the Vollman quote is Donna Seaman from B*ooklist*

Newburyport," writes Day, "isn't its length but the sustained attention to the details of domestic life that usually go unwritten. That this maximalism feels like a provocation is partly because no one has paid this much attention to this kind of mind before." *Ducks*' size and formal play is not the novelty here—the novelty is in devoting this kind of textual yoga-block of space to an individual woman's subjectivity.[31]

Ellmann, when asked about responses to the novel's length, addresses this directly. "There's a tinge of sexism to certain male reviewers' comments on the book's length," she says. "They're probably further miffed that it's a novel about womanhood. The feeling is, how dare a woman, the narrator or the author, take up so much of my time?"[32] Putting her novel in explicit relation to Joyce, she continues, "if we cannot tolerate an in-depth look at the workings of one person's mind, where does that leave the other seven billion? And what does it say about us as a compassionate and enquiring species? Joyce was asking the same question in Ulysses."[33] Asking the same question, yes, but asking without what Ellmann calls the "female cosiness factor," the readerly envelopment made possible by "spreading out a big fat, soft book for the reader to tramp around in. I wanted a certain gentleness to prevail too, in a novel that, if nothing else, offers an antidote to the priorities of testosterone." By proffering her "cozy" novel as an antidote

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[31] While this is a line of argument common around Ellmann's work, I'm not sure it's particularly true. See, for instance, Dorothy Richardson's *Pilgrimage,* a 2,000-page stream-of-consciousness. text in thirteen novel-chapters. *Pilgrimage* follows Miriam Henderson non-chronologically over an 18-year period where she works as a teacher and as a governess, becomes a dental assistant, joins a socialist organization, and studies the lives of Quakers. I mention this in part because Richardson, not Joyce, might be the best antecedent for *Ducks,* and because her work directly contraindicates arguments that "no one" has paid attention to this kind of mind before.
[32] https://www.theguardian.com/books/2019/dec/07/lucy-ellmann-ducks-newburyport-interview In other interviews, she has been even more candid. Asked about this assertion at a finalist's ceremony for the Man Booker in 2019, she said, "Essentially, I think it's time for men to shut up completely."
[33] https://www.irishtimes.com/culture/books/did-we-really-massacre-indians-enslave-africans-and-poison-rivers-for-this-hellhole-1.3938323

to the priorities of testosterone, Ellmann offers a particularly gender-essentialist frame to the question of her novel's form.

In discussing *Ducks, Newburyport* as an "anxiety novel," I am entering another, related conversation about gendered literary form. *Ducks* is domestic fiction, certainly, in the contours of its concern. It might be a descendant of the sensation novel, if you allow "profound anxiety and its release" as a sensation. I use "anxiety novel," here, however, as a corrective or recalibration of James Wood's discussion of "hysterical realism," a term he coined in 2000 in an essay on Zadie Smith's *White Teeth. White Teeth,* he argued, was part of a "hardening" genre of contemporary fiction: "The big contemporary novel," he writes, "is a perpetual-motion machine that appears to have been embarrassed into velocity. It seems to want to abolish stillness, as if ashamed of silence...Inseparable from this culture of permanent storytelling is the pursuit of vitality at all costs. Indeed, vitality is storytelling, as far as these books are concerned." Wood's essay made a splash—in part because of the implicit sexism in singling out Smith as the paragon of contemporary "hysteria"—but also because there seemed to be something true, or at least compelling, about the diagnosis of an emergent form. And in some ways, Wood's delineation of hysterical realism's characteristics describes *Ducks* nicely. Stream-of-consciousness narration does not afford silence, or stillness. The novel continues to exist exactly as long as the mind continues to move, exactly as long as verbiage continues to accumulate, as long as the "stories and sub-stories sprout." Hysterical realism's sense of being "embarrassed into velocity" reads as tailor-made for *Duck's* constantly blushing narrator.

Using "Anxiety" instead of "hysteria," however, both avoids the latter's womb-etymology and operates in a specifically future-oriented mode. This is not to say that the term lacks history, or gender. On the one hand, as Lauren Berlant explains by way of Jacqueline Rose,

"anxiety is the core affect of femininity, which operates under an imperative never to fail to stop working on itself" (16). On the other, as Sianne Ngai argues in *Ugly Feelings,* anxiety is characteristically male: In strict Freudian psychoanalysis, the castration complex means "only male subjects are capable of experiencing genuine anxiety or dread, whereas female subjects are allowed the less traumatic and therefore less profound…affects of nostalgia and envy" (213). Partially because of this gendering, Ngai continues, anxiety became the "feeling-tone" of intellectual inquiry—so much so that by the early nineteenth century an American clinician could observe, "all men who possess genius...are endowed by nature with more than usual sensibility of nervous system" (qtd. In Ngai 214). Anxiety, in sum, is subject to much gendered legislating: who gets to claim it, and whose suffering is real and appropriate, is a contested sphere. In addition to indexing a more nuanced relation to gender, anxiety, unlike hysteria, indexes explicitly future-oriented affect. As Ernst Bloch explains, anxiety is one of the "expectant emotions," which "aim less at some specific object as the fetish of their desire than at the configuration of the world in general, or (what amounts to the same thing) at the future disposition of the self" (74-75). Anxiety, unlike hysteria, seeks to understand the configuration of the not-yet-here.

This orientation makes it significantly more useful in the context of thinking about the future of a more-than-human world. For Wood, the literary pursuit of "vitality" at all costs—the pursuit that drives proliferating plots and hyper-connectivity of contemporary fiction—is a failure at the level of character. "Bright lights," he writes, "are taken as evidence of habitation…features are mistaken for scenes, as if they constituted the movement or the toil or the pressure of the novel…The existence of vitality is mistaken for the drama of vitality." Implicit in Wood's argument is a certain distaste for networked form and congested diegetic

worlds. There is an echo, too, of the persistent rumor that "good" novels must perform an anthropocentric interrogation of the experience of liberal subjecthood. "Stories, after all," Wood explains, "are generated by human beings, and it might be said that these recent novels are full of inhuman stories, whereby that phrase is precisely an oxymoron, an impossibility, a wanting it both ways." But as we have seen so far in this dissertation, "inhuman" stories are not an oxymoron, and "vitality" has been radically reapportioned by both contemporary bioscience and emergent humanistic theorizations of matter. It is by simply tracing the anxiety-provoking movements of vital objects through everyday routines and across the boundaries of human/inhuman that *Ducks* tells such a compelling climate story. So on the level of form, the narrator's multitudinous worries thrust *Ducks, Newburyport* into temporal horizons uniquely suited for grappling with climate change. The novel's climatic reckoning happens both overtly—at the level of narrated concerns—and implicitly, insofar as the narration circles through past and future crises in such a way that the temporal boundaries of current emergencies feel porous.

To some extent, *Ducks* is the most overtly climate-change-centric of any of the texts discussed in this dissertation, at least insofar as the novel both describes general environmental concerns and links those concerns to the anticipatory structure of climate crisis. Like *Future Home, Ducks* casually embeds references to rising temperatures and changing climates in scenes of domestic life. When the narrator hears the name "Howard Keel," for instance, she thinks of visiting her grandma in Fort Lauderdale, and all she can bring to mind are those "bobbly glasses of water dripping everywhere…and the scrambled eggs, and swimming with pelicans, the fact that it was like *95* or *100* every day, the fact that it must be even worse now, 110 or something" (101). With the help of some sweating tumblers and the strong affirmative "must be," a warm past melts into an even warmer present. But *Ducks* is distinct from *Future Home* in its focus on

the affective impact of this embedding. The narrator worries about the sea turtles of the great barrier reef and the ecological impacts of using the dryer and how Trump's wall will hurt the wildlife on both sides and about Flint's "lead-damaged children" (314). She worries about starfish going extinct and about DuPont's unchecked polluting. She worries, too, about her fellow Ohioans, as despite "the fact climate change is a worse threat to life on earth than terrorism, Bernie Sanders says," most of her neighbors "don't like the sound of environmental protection one little bit, and they get all upset if you even mention climate change, the fact that's probably why they voted for Trump, the fact they hoped they wouldn't have to hear about climate change for at least four years" (353, 323). Even as the narration is quick to move back from explicitly naming climate crisis into more comfortable territory, it is remarkable how new the straightforward depiction of climate anxiety feels.

After the narrator and her children get stuck in the mall due to sudden, derecho-derived flooding, for instance, she muses on the climatological shifts she's encountered even in the short time she's lived in Ohio: "I think the Ohio climate's changed during the time I've *lived* here, what with the derecho and all, backwards C, the fact that there used to be deer mice and harvest mice around here, meadow jumping mice… and pipistrelles, and possums, the fact that Phoebe did a wonderful painting of a possum hanging from a tree" (324).The derecho in question, the narrator tells us earlier in the novel, could have been a serial derecho or a progressive derecho but she doesn't know, she just knows it had a "backwards c formation" and it killed twenty-two people (265). The presence of the derecho, just like the absence of the meadow jumping mice, indexes climate shifts beyond the simplistic narrative of warming. The narrator is simultaneously tentative in her diagnosis (I *think* the Ohio climate's changed) and remarkably thorough in her accounting for those changes (no more pipistrelles, no more harvest mice). And as with many of

her worries, concern quickly gets folded back into a kind of cozy space of memory. Phoebe painted an excellent possum once, and with that thought, the quickly escalating list of absence shifts in tenor. In moving the narrative abruptly from indicator species to childhood excellence, this passage gestures towards the very dichotomy between the domestic and the climatological that the novel as a whole works to undo. One of *Ducks'* achievements, then, is expertly mimicking the way climate anxiety both erupts and gets mitigated—the way new absences and presences register as distressing and then get subordinated to other concerns. In both describing general environmental concerns and linking those concerns to the anticipatory structure of climate crisis, Ducks provides a remarkably straightforward depiction of climate anxiety.

2. The Politics of Porousness

Much of the novel's climatological angst gets articulated through tropes of porousness, where environmental damage inevitably passes into nearby human bodies. This happens both formally, through language reduced to particulates and stream-of-consciousness narration, and on the level of content, in the narrator's concerns with literal molecular threats to her family's health. The fact that rivers in Ohio are "full of PCBs, too, plutonium isotopes, and three hundred and ten gigatons of carbon dioxide, GM, Toledo, the fact that the Ohio is the most polluted waterway in America, or maybe anywhere…the fact that farms and industries deposit whatever they want in the Ohio, the fact that there are twenty-four million pounds of chemicals in that river, *pounds"* (311). In these instances, the immediately perceptible (water) is revealed to contain imperceptible threats: bromodichloromethane, arsenic, twenty-four million pounds of unarmed chemicals. A molecular imagination renders "the given" of lived environments visible at newly threatening scales. The repetition of "the fact that" both tethers this anxiety to legal and

scientific legitimization and erodes the meaning of "fact" as a word and a concept[34]. A breakdown of language, here, emphasizes the troubling breakdown of familiar substances into physical threats.

This threat asserts itself with particular force because of the narrator's experience with rectal cancer—an experience she explicitly connects to her molecular environment. Just after she describes the excessive ppbs of bromodichloromethane in the local water supply, she explains that

> these contaminants, chemicals, pollutants, are all carcinogenic, the fact that I feel sick, toxins, carcinogens, the fact that what if our water gave me *cancer,* because I *was* pretty young to get it, the fact that most people who get my kind are *seventy* or more…the fact that actually Leo said there may well be a cancer cluster here, the fact that he and Ben are trying to find that out…the fact that if *that's* what happened to me, that's even worse than the *mucus* remedy, and my kids are still drinking *that water,* well, filtered*, the* fact that everybody around here does, the fact that we all have baths in it…the fact that our poor goldfish are *living in it,* and the hens drink it too, and then *we eat their eggs.* (611)

Here, in the typical rhythms of the narrator's worries, she slides between the intensely alarming (her family's continuing cancer risk) and the comparatively less so (goldfish water quality). The narrator quit her teaching job when she was diagnosed with cancer, and often muses on how the illness changed her experience of sex, time, and priorities. This narrative through-line makes clinical language like "carcinogenic" and "Bromodichloromethane" come vividly to life: these chemicals could give you *cancer.* When coupled with the aggressively quotidian acts of bathing and eating eggs, formerly abstract molecules emerge as domestic threats—invisible, but still

[34] Thanks to Nitzan Tal for pointing out this dynamic in an early draft

suffusing the supposedly sheltering space of the home. As in *Future Home* and *Happiness,* foregrounding the processual relationship between people and environment exposes the contingency of the present.

This dynamic of occlusion and revelation is further heightened by the narrator's penchant for abbreviations. The Ohio water is "full of TTHMS, HAA5, TTHMS" (610). Pregnant women these days are vulnerable to "TTTS, TOPS, DVT, PPCM, and PGP" (127). The "whole world's full of PFOA," they "put PFOA in dental floss, the fact that it's in all kinds of things, LBJ, IME,IGA, IBM" (498,67). Not all of these abbreviations stand for things that can properly be called "molecular." According to the handy reference Ellmann has provided as an appendix, ("A Round-Up of Abbreviations, Sanitized for your Comfort" (991)), "IME" means "In my Experience," "IGA" is the "Independent Grocer's Alliance" and PPCM stands for "peripartum cardiomyopathy." Others are more properly the stuff of a chemical imaginary, referencing, respectively, "perfluorooctanoic acid," "total trihalomethanes," and "haloacetic acids." Here, the novel's molecular "style of thought," might be seen to coincide with its descriptive form. If a molecule is the smallest unit of an element or compound, there is perhaps something molecular about mustering language at the unit of the letter, not the word. *Duck's* molecular imaginary expands the reach of realism beyond the "unaided senses," in part by forcing the reader to seek aid: to make the molecular structures indexed by the proliferation of abbreviations legible, most readers will be at the mercy of the appendix.

Even when not explicitly threatening, there is often something unsettling about the novel's repeated shifts in scale. After a list of American foodstuffs that extends for nearly three pages, ("Amish caramel corn, divinity fudge, sugared almonds, maple walnut creams, peanut brittle, jelly beans, salt water taffy…,") the narrator suddenly shifts into a scientific register:

> the American diet also includes xanthan gum, saleratus, monosodium glutamate, dextrose, sodium aluminosilicate, niacin, thiamine, thiamine monotriate, beta-carotene, aspartame, tetracycline, calcium carbonate, calcium disodium ethylenediamine-tetracycline, apramycin, nitrous oxide, potassium carbonate, stearoyl propylene glycol hydrogen succinate, lecithin, acetylated monoglycerides, monensin, agar, zoalene, zeranol, estradiol benzoate…the fact that there are six thousand artificial additives approved by the FDA, and plenty more down cellar in a teacup, but Jake won't touch any of it, unless its continued in SpaghettiOs, Cheerios, bagels, and donuts (167).

This passage is ontological in its orientation: here is a list of the stuff in the world. But insofar as this list also depends on the unseen and unheard, it is not ontology severed from epistemology: this is a list of stuff in the world that we can't see unaided, stuff with scientific names that obscure their familiarity, stuff which must be taken largely on faith. As David Herman suggests, "narrative, even though it is grounded in and optimally calibrated for human-scale phenomena, furnishes routes of access to emergent structures and processes extending beyond the size limits of the lifeworlds" (252-253). Ellmann, here, provides one such route: From the general category "the American diet" she offers multiple, easy-to imagine examples like caramel corn and jellybeans. "Diet" as singular entity disambiguates into Big Gulps and blancmange and sopapillas, which then are further broken down into their component chemicals. Built into this list is both an ontological claim (these are some eaten things in the world) and an epistemological one (we understand them through moving from lists of particulars to general categories).

Just as the abbreviations of water additives create a formal echo of molecularization as style of thought, here the extensive listing creates a similar formal resonance. The list, as seen in Erdrich, is sometimes deployed to "reinforce plausibility"—its meticulous inventory of things

without details of their relation can seem like the most straightforward possible representation of the extra-diegetic world. Powers' lists were often mechanisms of attention, offering a metafictional reflection of the perceptive temptations of skimming over the natural world. The lists in *Ducks* seem to be doing a little of both. There is a component of plausibility in the sense that a direct transcription of interior thought could look very list-y. There is also a component of meta-reflection, in that if part of the provocation of *Ducks* is giving domestic details the treatment of the "very important novel," the insistent use of listing renders those very details liable to skimming. Taken in conjunction with the novel's interest in molecularity, however, Ellmann's lists take on yet another valence. The list, like the abbreviation, renders the normally synthetic form of language particulate. The unit of the sentence—subject, object, predicate, perhaps some cheeky subordinate clauses—gets supplanted by smaller units: a proliferation of nouns that reinforce the conceptual work done by scaling "food" down to molecular parts.

In itself, this molecularity disrupts perceived structures of the given by replacing them with smaller, invisible structures. But even more disruptive is the suggestion that these molecular structures are unfixed—that they can be absorbed unannounced. "In the Great Barrier Reef in Australia," the narrator explains, green sea turtles "are full of human drugs for heart problems and gout, and cleaning products, cosmetics, pesticides and herbicides" (315). This is a problem that exists closer to home, too: "there are more twins born now, because of all the growth hormones given to cows," and children's toys are full of lead and mercury. The imaginative landscape of *Ducks,* here and throughout, is characterized by this kind of attention to moving molecules and their transgression of bodily boundaries. Human drugs for heart problems end up in turtles, Cow hormones in pregnant women, and mercury makes its insidious way into the playing child. Previously static objects (toys, cosmetics, steaks) become mobile in their

particulate form, and in this unperceived mobility, the familiar externalities of daily life become the stuff of internal threat.

This attention to the dissolution of inside and outside is part of what makes anxiety this novel's dominant structure of feeling. Yet molecularization also means anxiety works at new scales and in new contexts. *Ducks*' molecular form, then, is crucial to its depiction of transient vitality, and its attendant reconnection of ecological possibilities. But this focus on the molecular is not without its conceptual hazards. Namely, a focus on the mobility and unfixedness of molecular materiality risks characterizing matter as somehow *inherently* subversive, thus bringing it back into fixity while simultaneously displacing human responsibility for political action. As David Hollingshead explains,

> if invoked uncritically…appeals to the strangeness, dynamism, and recalcitrance of the nonhuman world are themselves vulnerable to reification…We are witnessing the effects of this reification in recent attempts to *sever* the link between epistemology and ontology while retaining for the latter the progressively coded qualities of instability, infinity, and fluidity that their coupling helped instantiate in the first place…This theoretical sleight of hand is dangerous insofar as it often entails the rejection of ideology critique and the vocabularies of racial, sexual, and colonial subjugation—or worse, that it displaces the work of political action and critique onto *materiality itself* (623).

Hollingshead's critique is rendered doubly potent by the way new materialist thought often espouses the radical innovation of the material turn while erasing the long roots of vital materiality in indigenous traditions—its claim to the aleatory possibilities of matter thus rehearsing the logics of colonialism that find inhabited lands and claim them as their own. As Jodi Byrd (Chicksaw) explains, the kind of boundary-elision that new materialist thought so

valorizes can become a kind of "ontological trap," that attempts to "articulate alternative spaces outside processes of recognitions and states, arrivals and departures" and thus avoid reckoning with the violences of the nation-state (14). To frame Ellmann's molecular form as subversive simply because of the molecule's material dynamism would be do a disservice to the way the novel's molecules are put in service to ideology critique.

For one thing, *Ducks*' molecular form is unusual insofar as it explicitly frames molecularization as an extension of—not an escape from—the settler-colonial state. Part of this shift in orientation emerges fairly organically from the narrator's repeated references to histories of indigenous dispossession. The narrator, we learn from bits and pieces of memory, was an adjunct professor of American history at Peolia college. Her specialization means she finds it particularly annoying that "Laura Ingalls Wilder writes as if there were no other people for miles around, but actually there were Ojibwe, Potawatomi, Winnebago and Ottawa living there still, the fact that she doesn't even mention it, the fact that they probably didn't see Indians as neighbors, or even as *people* exactly." Stacy, the narrator's daughter from her first marriage to a man named Frank, "shows no interest in her Indian heritage, like Frank." But, the narrator continues, "I was a lot more curious about it than he was because I'd *studied* this stuff" (532). Evidence of this studying is scattered throughout the novel. Considering the history of her surroundings she explains that "the Hopewell people lived here for thirteen thousand years and didn't wreck a *thing,* the fact that they just left a few arrowheads and gorgets lying around, the fact that *they* didn't pollute the drinking water of millions of people, or leave radioactive waste that won't be safe for three hundred thousand years" (326). Molecular environmental threat, here, is specifically aligned with white settlers. Radioactive waste and water pollution, rather than being approached in the abstract terms of resistant and radical materiality, are named as a

form of white violence.

The narrator returns to this violent history again and again. Frustrated at the kinds of events covered in her children's American history classes, she takes her family to Gnadenhutten, the site of a brutal slaughter of Moravian Indians. Colonial American soldiers "murdered them all," the narrator explains, "every single person in the village, the men, women, and the children, and I had to *teach* this, year after year, to those tired, bored, suspicious students who just wanted to earn their credits and move on with their lives" (319).Gnadenhutten, now, is mostly visited because it's the site of the "Fireworks Festival, and the Pet Parade and the Tomahawk Trot," where they elect "the best baby of the year, the best *baby,* after so many babies were bludgeoned to death were, thirty-six children, the fact that it kind of makes you sick, but that's just me, the fact that nobody else ever thinks about it anymore" (321). In repeatedly gesturing to the colonial violence that exists just under the surface of American daily life—overlain by narratives of the Wilder's rugged independence and the tawdry pleasures of pet parades—the narrator makes clear that the material fact of America is one predicated on continuing settler violence.

Ducks' narrator is very explicit in demonstrating the way this violence is not a relic of the historical past, even as said acknowledgment is colored by her whiteness. "One of the first things Trump did in office," she explains,

> was re-approve the Dakota Access Pipeline, DAPL, Wet'suet'e, Unist-ot-en, the horses, the fact that the National Guard shot at Indian protestors with rubber bullets, and shot the horses too, PODR, buffalo extinction, extermination, tipi camps, the fact that you start to wonder if protesting and civil disobedience, the fact that, I mean, you wonder if it's really necessary, passive resistance, because it's dangerous to rile the authorities, the fact that they won't let you get away with it, the fact that people are always talking about the right

> to peaceful protest, but they just get arrested…the fact that plants have rights too, and water has rights, and nature, and everything, but do you wanna go to jail for it, or get *shot* (323)

In describing the rubber bullets fired at DAPL protestors just a few short pages after the massacre of Gnadenhutten—and in explicitly tying that violence to Trump—*Ducks'* narrator brings the violence of indigenous dispossession into the present. This connection, in light of the above concerns about the slights-of-hand of new materialism and the trope of the atavistic "native beyond history," is an important one. Resistance, here, is not transposed onto the material quality of the oil or a quirk of chemistry of the rubber bullet. It is an intentional human choice to stand up to the violence of other humans, a choice that, incidentally, puts the material body at risk. This moment also serves to undercut the white exceptionalism the narrator raises in her discussion of Gnadenhutten, the way knowledge of the massacre "kind of makes you sick, but that's just me." The narrator, proud of having *studied* and *taught* indigenous history and lifeways, is aware of the more-than-human frameworks that make resisting projects like the DAPL necessary. She's aware of the continuing injustice, and of others resisting the continuing incursions onto native lands. And yet the primary take away of her awareness is a concern over personal harm: do you wanna go to jail for your protest? Do you wanna get *shot?*

The answer, for her, is clearly "no," and this refusal gets at the crux of *Ducks* profoundly maintenance oriented molecular politics. Read generously, this moment of refusal contains respect for those who take on the risks of passive resistance, for those who put their bodies on the line. Yet if part of the novel's intervention lies in its simultaneous vital materiality and its refusal to displace the work of critique onto materiality itself, another crucial aspect is its persistent recognition of the value of stability. Valuing the familiar routines of existence

translates into the narrator's distaste for putting her body on the line: the bulk of the narrator's implicit "no" registers a desire for self-preservation, a desire for social reproduction uninterrupted by arrest or corporeal harm. In prioritizing the maintenance of the family unit over maintaining the grounds of collective well-being, *Ducks* displays the limits of maintenance at the scale of the nuclear family. In aligning the "going-to-pieces" of molecularization with state-sanctioned violence, and attempting to protect her family from that flux, the narrator demonstrates the ways the steadying work of domestic labor can be complicit in ecological violence.

3. The Oikos in Ecology: Domestic Sublime as Climate Sublime

Still, the novel isn't ready to render domestic labor fully complicit with the violence of the present. Its attempts to disarticulate the value of domestic stability from the violence of national continuity happens most overtly through the novel's portrayals of food and foodwork. When the narrator is not baking, she worries about what to serve her children for dinner. This conjunction of responsibilities means that the primary forms of domestic labor on display are food shopping, cooking, serving, and cleaning. Metabolism is thus an appropriate concept at the level of content: much of the novel's action revolves around sustaining the character's literal metabolisms. But it is useful, too, in a slightly more abstract register. As Sébastien Rioux points out, "'the concluding act' of individual consumption" is also the "'opening act' of the process of social reproduction" (2). With this transformation in sight, it is much easier to see how the "uneven body" is a "repository of social inequalities and the crystallization of historically and spatially specific dynamics of exploitation and domination that arise at the nexus between production and social reproduction" (2–3). In the terms I introduced above, and in an echo of the themes of chapters two and three, food consumption is thus tied on a molecular level to what gets

reproduced in society: who survives, who sickens, who dominates, who thrives. It is thus a category that is particularly useful in challenging the binary frame of "matter as fluid and therefore radical" and "matter as fixed and therefore conservative." Food and foodwork, rather, are ideally situated for emphasizing the truths of corporeal porousness and communal vulnerability while keeping the tension between the need for stability and the need for change in sight.

Let's start with porousness and vulnerability. As will probably be unsurprising at this point, the narrator is quite anxious about feeding her family. "I buy organic milk," she explains, "because it's better for the cows and better for the kids, the fact that people who eat organic get less cancer, like *twenty-five percent* less, the fact that cancer costs money, the fact that, landsakes, Land O'Lakes, when you really come to think about it, *not eating organic might be a false saving…"* (476-477). Yet while she buys organic milk and "organic sliced bread for the kids," and feels she "should buy only organic and local," she can't afford it (458). Instead, like most people faced with the complex ethics of eating, she makes compromises. Organic honey "is made from bees who've had their wings clipped, or that's what somebody told me once in a delicatessen in Hartford," so she doesn't buy that any longer (301). The chickens she raises are "free range but not organic, because organic would mean really cramping their style, and mine" (301). The backyard chickens are layers, though, and so the family does eat chickens from factory farms. But the narrator is quick to assert that "we *gotta* stop eating chicken, unless it's from a good place, where they don't sink to such stuff, the fact that it's not just what they do to the chicks either, which I'm not, not even going to think about, conveyor belt, masher, the fact that they also put all the meat now through a *bleach* bath, which is really bad for everybody" (725). In these instances, feeding the family—that "opening act" of social reproduction and its

attendant stabilities—is fraught with instability. Non-organic foods increase the risk of cancer, changing the body at the molecular level. Factory-farmed chickens are dipped in bleach, its own variety of chemical threat. And the narrator's family, in eating these foods, is open to them—made vulnerable to these molecular shifts by the necessary act of metabolic maintenance.

The apparent solution—Eat local! Eat organic!—is tempered by the narrator's financial reality, and by the vast complexities of agricultural production. So often local—as is the case of the backyard chickens—means not organic. Or organic comes with its own cruelties, like wing-clipped bees, or, more seriously, vastly underpaid migrant farmworkers. The narrator is reasonably frank about the fact that she mostly cares about her family health, and that her own solutions are imperfect. "Buying organic milk seems kind of a pathetic answer to all this," she confides, "but it's all I've come up with so far, that and making pies" (548). The relative impotence of her action emphasizes the inevitable failure of addressing systemic issues with individual choices. And so the questions of consumption in *Ducks* spin out into dizzying ethical quandaries, unavoidable reckonings with the fact that to eat is to harm and be harmed, often simultaneously. Domestic labor, here, is both party to the injustices of the present and something that needs to happen anyway.

In a slightly different context, Bruce Robbins calls these moments of clarity about contemporary consumption "the sweatshop sublime." In selected contemporary media, he explains,

> in thought, at least, you are launched on a one-click leap from the tender, drowsy privacy of early morning at home—the shirt not yet on your back, the first cup of tea just finished—to the outer reaches of a world economic system of notoriously inconceivable magnitude and interdependence, a system that brings goods from the ends of the

> earth…Yet at the same time this insight is also strangely powerless. Your sudden, heady access to the global scale is not access to a commensurate power of action *on* the global scale" (85).

This sublimity, he continues, has a long history in the novel, perhaps most notably in the work of George Eliot. Eliot puts it like this: "If we had a keen vision and feeling of all ordinary human life it would be like hearing the grass grow and the squirrel's heartbeat, and we should die of that roar which lies on the other side of silence" (135). For Robbins, to "hear the roar which lies on the other side of silence" is "from the point of view of an ordinary self, to die" (88). Full awareness of the ethical complexities of daily life results in paralyzing self-punishment, and precludes "forceful, extraordinary action." Robbins is careful to elaborate that "asking us to hear the grass grow is not asking us to interfere with it. The only imperative here is to be conscious of what is already happening, to respect what exists. And respect for what exists is a better argument against change than for it" (88). To the extent that *Ducks* also asks us to listen to the "roar" of the climatological implications of our everyday lives, it might also serve as a kind of paralytic: overwhelming enough to preclude action.

This possibility gets raised in recent theorizations of a more explicitly ecological sublime, too. As Allan Stoekl asks, "Is the recognition of the sublime in this case a defense strategy, a way of affirming ourselves before the horror of an incipient apocalypse— the roasting of the world caused by mindless overconsumption?" (45). Does "trembling before…the fundamental incalculable nature of externalities" mean "we can affirm only our own consciousness?" (46). Like Stoekl, I say no. This is, in part, because the dizzying consciousness described by Robbins and Eliot grows still more complicated when extended into molecular scales. Traditional Kantian understandings of the sublime correlate it with public, spectacular, and violent events. These

accounts ultimately affirm the triumph of dematerialized reason, thereby affirming existing social orders and human distinction. When harm is considered at molecular scales, by contrast, the damage is often private, indistinct, and distributed. This is a sublimity of slow violence, evidence of human vulnerability to ordinary toxicity that becomes gradually visible, if at all. As anthropologist Nicholas Shapiro explains in his essay on formaldehyde poisoning and the "chemical sublime," sublimity that reckons with the molecular is "an accrual of bodily reasoning to the point of articulating the patterned practices and infrastructures that distribute pockets of exposure across space. It is the traversing of a threshold of chemical awareness whereby the *irritations* of one's immediate environment become *agitations* to apprehend and attenuate the effects of vast toxic infrastructures" (380). In landing in a place of human vulnerability, not human distinction, the sublimity of molecular forms provides a similar agitation.

And so there is an important distinction to be made in bringing the concept of the "sweatshop sublime" into context of climate fiction, and into the specific narrative world of *Ducks* itself. Taken in light of a rapidly warming world, "respect for what is" is no longer a better argument against change than for it. Respect for the extant entails both a recognition of the threat of its erasure and a willingness to do something about it. Faced with the re-approval of the Dakota Access Pipeline, for instance, a logical end of respect "for what is" would be supporting the protest in whatever way accessible. And insofar as they expose the vast set of connections and improbabilities that have coincided to create the texture of daily life, these moments of awe index the power of the collective as much as they gesture towards a kind of sublime death. Some of the "trembling" before incalculable externalities, in other words, involves a recognition of the sheer potential that adheres within the myriad connections that have conspired to form the present. The heady contemplation of the ecological resources might then be a moment of

possibility even as it threatens a solipsistic confirmation of the self: vast networks of people and labor have gone into this commodity—what else could such coordinated action do? How could this energy be redirected? The circumstance, here, is not one where sublimity leads to inevitable self-shattering. Rather, the animating question of *Ducks, Newburyport* is: "how can one experience the sublimity of climate anxiety without going to pieces?"

Implicit in this question is the assertion that anxiety alone—and perhaps negative affect generally—is insufficient to the challenge of sustainable and effective response to climate crisis. As Nathan Jandl explains, "the impossibly complex environmental crises that vex the contemporary world engender difficult feelings, spanning personal and societal scales and including everything from strenuous outrage to utter apathy…yet insufficient literary-critical attention has been paid the relationship between environmental crisis and emotional responses, and the application of 'positive' affective dynamics like intrahuman care has been largely shuffled aside to make way for the more fashionable focus on negative feeling" (435). We need, in other words, "affective orientations whose purpose is to sustain, via interpersonal attachments, what social psychologists call 'felt security,' yet which are fundamentally informed by reciprocity and responsiveness to collective, even planetary, forces and threats" (436). To my mind, the affective strategies at play in Ellmann are less "positive" per se than concerned with managing the negative—rendering the complex anxieties of climate crisis survivable rather than shattering. Maintaining the sense of felt security, then, when sufficiently informed by planetary threat, is less a political failure than a necessary grounds for politics.

4. Breaking Things Up, Blanking things Out

Ellmann, for her part, seems to have two answers to the question of sustainable affects for prolonged ecological crisis: we survive this kind of sublime anxiety by breaking it up, and by

blanking it out. The most common mode of "breaking it up" in *Ducks* is, as previously discussed, the list. Taken in this context, however, the "molecular form" of the list is soothing rather than shattering—it is a "going to pieces" that helps render the anxiety of existence in a climate crisis a question of everyday survival rather than insurmountable crisis-to-come. Ellmann's lists-as-processing-the-unprocessable reaches its apotheosis a little more than halfway through the novel, when the narrator provides a 26-page list of definites. "If you're like me," she explains, "the past gets you down, the fact that meanwhile it's the *future* we should be worrying about, and I cling to the few certainties there are about it, the fact that some things are definite, like:

> The sun will rise and set everyday
>
> Without fail
>
> Absolutely without fail
>
> The moon will come and go too
>
> Though fewer and fewer people
>
> Including me
>
> Will understand its phases (635)

From these relatively certain celestial definites, the list gets wilder, sometimes edging into the poetic, sometimes becoming downright frightening: "Birds will eat hundreds of caterpillars/a day/ and there'll be nothing we can do about it" (644). "Californians will have water consumption problems/ redwoods will fall over/ the oceans will fill with/things made of plastic/nanoparticles/radioactive waste/the wrong kind of algae" (645). "Water will not be fit to drink/ there shall be trembling/ vomiting/ sighing/ crying …keening/ kowtowing/ ululating/ genuflecting/ but not so much hibernating going on" (657). The narrator's vision of the future—containing as it does inevitable rape, pestilence, droughts, and tears—is not a comforting one.

And the act of listing, structured here around the concept of continuity, is also discomfiting insofar as the insistence of a certain future serves only to emphasize this future's contingency. Until one asserts that "the sun will rise and set everyday/ without fail/absolutely without fail" such diurnal rhythms are not much in doubt. Same goes for the comforting phases of the moon, the inevitability that "pasta will reach the al dente stage/ and then the soggy stage" and the fact that "grass will be green" (662). Assessments of extreme certainty open the door to doubt—rendering this supposed document of assurance heavy with the weight of apocalypse. And as Heather Houser explains in her work on ecosickness, anxiety is a "correlate" to apocalyptic form: it "manages response to the present structure of relations by projecting their resolution…for both better and worse…into a disrupted future" (*Ecosickness* 205). The narrator's list of certainties operates on these terms, inviting imaginative apocalypse in order to feel the accompanying charge of some kind of continuity—to trade the discomfitures of worrying about the now for considering problems yet to come.

Yet the list's ultimate effect, I'd argue, while successfully evoking a host of planetary threats, is less anxiogenic than it is calming. There is a reason, after all, self-care Instagram is always offering you lists of things to do or singing the praises of gratitude lists. There is a reason therapists like to recommend practices like listing five blue objects in your immediate surroundings, now five gray ones, now orange. This list is the first time in 600 pages that the reader has had a break from largely unpunctuated and un-paragraphed walls of text. Now, there are line breaks. There is white space. And the oncoming future is broken into discrete (one might even say molecular) chunks: "chickens as yet unborn will love melon rinds/ some cats will eat melon too/ some cats will be good swimmers/ wet clothes will dry/ eventually/ even without a dryer" (646). This is a small, prose poem portion of the yet-to-come, and to the extent that genre

is a code that generates readerly expectations (and thus experience), the sudden increase in page space triggers a shift in readerly attention. If lists are generally things to be skimmed, poems are things to linger over—to roll around in and hold up bits of language to the light. In "breaking up" the depressing enormity of the future to, among other things, "chickens yet unborn" and melon-eating cats, the terror of the sublime gives way to the oddity of the quotidian. Yes, we can consider the implicit threat that the sun won't rise and water will become undrinkable. But this consideration gets formally leveled by its companions in the delineated list of certainties—the threats become one line among many in the projected resolutions of the future.

This balancing effect, following Jandl, tempers the sublimity of climate anxiety with "felt security," a tempering that becomes even more potent insofar as Ellmann's prophetic list frequently slips into the conditional. For all the narrator's project is framed as one of amassing certainties, often her predictions shift to the couching form of correlative conjunctions. "My eyesight," she explains, "will either get better or worse/ my life will either be a success or failure" (641). We will either get fatter/ or thinner," she continues, and "kids will sometimes get lice/but I hope not our kids" (649). "If candle wax gets stuck to tablecloths/ it will come off in the freezer" (646), and "there will be tectonic activity/but probably not in Ohio" (650). In putting "either/ors," "ifs," and "probablys" under the heading of "certainties," Ellmann's list allows for the comforting fantasy of predicting the future and being right—if only by virtue of predicting not much at all. Placing the future in the familiar binary structure of "either/or" also serves to further render the threats to come discrete and particulate: even with the itemized form of the list, the structure of limited possibility creates a more graspable engagement with the horizon. The family might be fatter or thinner, the kids might get lice, candlewax might drip on the tablecloth: if a "sense of normalcy," for Berlant "is mainly a free-floating affect, a

generalized sense of comfort and continuity with a loosely experienced world," the "looseness" of the mights in narrator's list of certainties allows the predicted trauma to be subsumed under a fantasy of maintenance (214). Predicting possibilities allows for the allure of "certainty" to remain untarnished by what actually unfolds: these predictions, in a sense, cannot be wrong. Their accuracy is maintained by their conditional relation to the given.

If the list's embedded conditionals and apocalyptic form paradoxically gesture toward maintenance, it also dwells on the maintenance work of social reproduction at the level of content. In an echo of the novel's umpteen grocery lists, the narrator again explains that "we will buy certain essentials regularly,"

Toothpaste

Toothbrushes

Milk

Cheese

Butter

Paper towels

Bacon

Eggs

Ground beef from many lands

Parmesan

Flour

Powdered sugar

Salt

Pepper

Thyme… (638)

This list reaches back to one of the narrator's earlier complaints: "the fact that the ground beef they had on sale today seemed to be from *three different countries,* so I didn't get it, the fact that I think ground beef should come from one animal, and *one* country, and probably not from America, where all the cattle's kept indoors now in big hangars, fed on "pre-emptive" antibiotics" (296). In so doing, it exemplifies the way foodwork in *Ducks* articulates the tensions between the need for stability and the need for change. A list of things to procure in order to feed one's family is a testament to intrahuman care even as it registers the unrelenting grind of domestic labor and the ethical compromises of consumption. In harkening back to the "pre-emptive" antibiotics that suffuse American beef even as it maintains the metabolisms of an American family unit, it continues the work of foregrounding the domestic labor as both intrinsically valuable and specifically vulnerable to capture by the American state.

Living with this conjunction, *Ducks* suggests, takes courage. The labor of metabolic maintenance and social reproduction generally goes unremarked, and unrewarded by true stability. As Berlant explains regarding writer Dorothy Parker, "Averse to conventionality, but relieved of singularity through it too, sometimes it is all a girl can do to show you a once beautiful shape, a failed conventional form, or an instance of tinny courage that can gesture toward the broken utopian while making you feel the optimism of having an infinite number of second chances at it" (231). For Parker, the partial solution to dreaming of being a "somebody" while "navigating an imaginatively cramped world" was exist as an "anybody"—a person who is non-singular but no less important for being part of a collective. The narrator of *Ducks,* I'd argue, makes a similar move in simultaneously insisting on her ordinariness but gesturing towards the way maintaining that "ordinary" involves feats of imaginative strength. As she cooks and cleans

and breaks up her day into manageable chunks, both the structural failures of the American state and the enormous courage of trying to keep on within it become visible. And so in encountering again and again the work of "buying certain essentials regularly" that is so crucial to life and so peripheral to narrative, *Ducks* manages to diagnose the failures of American domesticity while preserving the sense of value and potential in intrahuman care.

This distinction between that which is essential to maintaining life and that which is essential to narrative brings me to the novel's second key affective prescription for encountering the ecological sublime: blanking out. As the narrator explains, "there's a lot you just have to *blank out* if you want to get through life, the fact that I do it all the time and it helps, family Raises $22K for Sick Baby, the fact that I try not to remember anything if possible, until it comes time to do our taxes and the whole year floods back and upsets me, the fact that Laura Ingalls Wilder started writing her memoirs to preserve her memory before it was too late, but what I say is, let it slip" (307). The injunction to "let it slip" resonates, here, with Jandl's caution that "neither rigorous scientific arguments nor rhetorical appeals to fear of environmental loss will prevail in galvanizing engagement over the long term: an emotional saturation point is too easily reached" (437). Blanking things out, then, like breaking things up, allows for a subject to encounter the shattering truth of ecological collapse and the dizzying ethical complexities of consumption without paralysis. In order to do the work of maintenance—the everyday labor of social reproduction—some level of disengaged attention is required.

Like *The Overstory, Ducks* both describes this disengagement and formally necessitates it. In many of her intertextual references, the narrator worries over which bits of novels are important and which can be efficiently skipped. Returning to Laura Ingalls Wilder in the midst of restroom musings, for instance, she mentions that the *Little House on the Prairie* books don't

"ever mention going to the bathroom" (27).[35] In fact, "Laura Ingalls Wilder never explains things all that well, or anyway I can never follow her explanations, the fact that her description of making whatnot is totally incomprehensible…the fact that I think the kids just skip over those bits" (24). Skipping the description is referenced, too, in the case of L.M. Montgomery's *Anne of Green Gables* books: "L.M. Montgomery gushed about blossoming trees in a way that maybe nobody would dare to anymore," the narrator explains, the "fact that the kids skip those bits, L.M. Montgomery's exultations about blossoms, the fact that nature's finished, wrecked, the fact I'm surprised it works at all" (539). And Anne Tyler novels also come in for a gentle bruising, as people in her books are "always either sitting down on a chair, or getting up off a chair and standing behind somebody else who's sitting on a chair or they go slowly out of one room and into the next or come back and sit down" (781). "Birds," the narrator says in a final blow, "could think up whole novels in twenty seconds, I bet, livelier novels than Anne Tyler's too" (785). In this critical array, the narrator both resents excessive description (too many chairs) and resents its absence (insufficient acknowledgment of going to the bathroom). Their cumulative effect, then, is less to legislate the proper amount of novelistic description, and more to register the necessity of skipping some of it—of blanking something out.

These discussions take on metafictional resonance due to the sheer size of Ellmann's novel—the fact that it is constantly dancing with the category of verbiage David Letzler calls "cruft." Cruft, a term Letzler borrows from computer programming, refers to "text that does not reward—and in its purer forms flatly refuses—focused attention" (22). In practice, this often means things like bureaucratic documents copied wholesale, jargon-filled lists, or nonsense

[35] Or more serious kinds of skipping: "Laura Ingalls Wilder writes as if there were no other people for miles around, but actually there were Ojibwe, Potawatomi, Winnebago and Ottawa living there still, the fact that she doesn't even mention it..." (532).

stream-of-consciousness. A selection of contemporary "mega-novels," Letzler explains, serve as a sort of training ground for toggling between "shallow" and "deep attention" through prolonged encounters with cruft. Ellmann's novel sits uncomfortably within Letzler's framework inasmuch as the entire novel appears to be cruft—lioness parts excepted, the whole dang book is a listy stream-of-consciousness that does not immediately seem to reward focused attention. Just as encountering the world in terms of the molecular renders it bewilderingly enormous, *Ducks* molecular form renders the text hard to wrap ones head around. Unlike other large novels, which manipulate Peter Rabinowitz's rules of notice[36] so as to cue reader attention through section breaks, titles, and the like—Ellmann's novel seems almost like a dare. "I won't help you," she seems to be saying. "Figure out what's important on your own." Faced with this kind of formal excess, the reader has little choice but to skim—or in the parlance I've used so far—to *blank things out*. After all, as Barthes observes, "it is the very rhythms of what is read and what is not had that creates the pleasure of the great narratives: has anyone ever read Proust, Balzac, *War and Peace,* word for word?" (10). As Ellmann moves through lists of rivers, healthcare concerns, and meal plans, she worries the line between crucial-to-life and crucial-to-narrative. What do we need to tell a good story? What do we need to live a good life? Why does telling a good story so often mean eliding the labor of basic maintenance for a good life?

In telling a story of the ecological sublime that attempts to stage modes of managing

[36] Rabinowitz develops these "rules" in the first part of his classic in narratology, *Before Reading: Narrative Conventions and the Politics of Interpretation.* For him, when a reader begins a novel, they participate in an author-reader contract that presupposes acquaintance with a range of literary rules, including rules of notice, which direct readers to stressed textual elements; rules of signification, which induce readers to discern essential patterns of meaning; rules of configuration, which lead readers to make inferences about probable developments; and rules of coherence, which enable readers to discover overall structure amidst contradictory or incomplete textual information. Books like *Ducks, Newburyport* put significant strain on this supposed contract.

sublimity, Ellmann highlights the way "crufty" novels might be particularly useful forms of climate literature. The potential boredom or disengagement in the moments of nonsense listing, the "feeling of being overwhelmed by excessive text," is "closely related to the classical sublime, wherein the mind's immediate perceptual capacities collapse and yield to alternate cognitive modes, 'keep [ing] the readers from understanding too quickly" what they perceive" (Tabbi qtd. in Letzler 10). By the end of *Ducks,* the reader and the narrator have both done so much breaking up, so much blanking out, that it is no longer entirely clear whose anxieties are whose anymore. So much of the novel requires shallow processing—or at least, invites idiosyncratic shifts on the reader's part between deep and shallow attention—that there is a sense of déjà vu that accompanies each subsequent page. Jon Day describes this experience neatly in his review of the novel: "As the pages turn and the layers build up, ideas, images, memories seep out, so that when they're revisited hundreds of pages later you can't quite recall if you've had the same thought before or Ellmann supplied it." When L.M. Montgomery shows up again, for instance, more than 200 pages after the initial reference it's initially hard to pinpoint why "the fact that L.M. Montgomery writes about apple blossoms, the fact that I don't think Gillian takes that stuff in yet but maybe someday it will get to her" is such a familiar line of thought (782). Encountering dispersed and multiple references to radioactive bananas, to Jane Fonda's self-help books, to David Attenborough's plant TV, creates a sense of a shared cultural references even if the initial allusions rang no bells.

This "memory seep" is another instance of *Ducks'* particularly anxiogenic molecular form. If Ellmann worries over the dissolution of outside and inside in the context of mobile molecules like PCBS and TTHMS, her novel's form enacts that porousness in blurring the lines between reader and narrator concerns. Yes, climate anxiety in isolation may not be a "sustainable

affect." Yes, it may even serve to foreclose visions of environmental renewal and labor towards those ends. But there is something in the blurred collective worries evoked by *Ducks'* dispersed repetition that gestures towards anxiety's affective potential in the context of climate crisis. Take the narrator's concern about how "purple sea urchins are on the rise, too, the fact that they chomp through kelp forests…the fact that they've been eating up the whole Californian kelp forest, urchins not vacuum cleaners, and now they've started eating barnacles, too" (433). I was not previously aware of the ecological implications of sea urchin dining habits. But when it comes up again, "the fact that the starfish are all dying and the sea urchins are taking over and eating up all the kelp forests, those impudent urchins, the fact that don't they know *they* were supposed to be eaten by the *starfish,"* this time it registers as a familiar worry (823). Those impudent urchins! This must be something I've worried about before. To some extent, any book might enact a similar transfer of concern. But Ellmann's, in the sheer duration and intensity of the reading encounter and the explicit concern with porousness, is particularly anxiogenic.

Or, to take an example I've raised earlier and place it more fully in the context of the novel as a whole, there is the question of "pre-emptive antibiotics" and other chemicals given to cows. Fourteen pages before the narrator worries about how American cattle are "kept indoors now in big hangars, fed on 'pre-emptive' antibiotics" (296), she anxiously explains how "we could be bombed or irradiated or robbed or foreclosed, or raped, or poisoned by acid rain and pesticides or 'pre-emptive' antibiotics, that stuff they use on livestock, the fact that farmers will be the death of us" (282). Two hundred and sixty-three pages after that, the narrator offers more evidence for the way cow diets affect human lives: "the fact that there are more twins born now, because of all the growth hormones given to cows" (545). As Ngai explains regarding the historicized concept of anxiety, "from its initial formulation as "fermented" libido, or sexual

energy transformed from being accumulated without discharge, to the experience of unpleasurable endogenous excitations treated as if they were coming from with-out—Freud shifts from viewing anxiety as an 'inside' matter to viewing it as a matter of the very distinction between inside and outside" (211), The repeated concern over "preemptive antibiotics" is a particularly potent example because it operates in both the yet-to-come temporality of anxious thought and in the collapse of inside/outside boundaries. It simultaneously invokes the anxiety of material porousness (second-hand poisoning via cow consumption) and the formal porousness that comes from *Ducks'* unique structure (the narrator's worries become the reader's worries, thus partially producing the "us" in "farmers will be the death of us).[37]

And this collective anxiety takes on a hopeful valence, I'd argue, in light of the novel's specific concern over ecological crisis. As an individual, the narrator's worries over climate change feel relatively impotent, confined to self-castigation and musing over dryer-use ethics. Insofar as her climate anxiety becomes shared by virtue of the novel form, however, the affective structure starts to look more redeemable. As Jandl explains citing Berlant, "amid the 'anxiety of formlessness' wrought by volunteering one's individuality to collective experience, one becomes 'awfully teachable for a moment,' and it is worth lingering over that brief pedagogical span (454). This, I think, is related to Tabbi's point about how the encounters with sublime cause "immediate perceptual capacities collapse and yield to alternate cognitive modes," as well as to Ngai's argument cited in Chapter One about stuplimity producing an "open feeling." *Duck*s' molecular form—its unique production of the "anxiety of formlessness" via porous structure and porous objects—thus is key to its pedagogical value, to rendering a climate-vulnerable "us" from

[37] Though of course this structure also produces a "them" in blaming the farmers, and I suspect I haven't engaged with the question of "them" sufficiently over the course of this "us-oriented" argument…

a climate-anxious "I." This is not level the unevenly distributed vulnerability to climate crisis, or to apportion a blanket culpability. But it is to acknowledge that collective anxiety can be affectively produced by literary aesthetic experience, and that collectivity might provide the grounds for repair.

For Amitav Ghosh, this collectivity is crucial to sustainable futures, but notably elusive in contemporary fiction. The contemporary novel, for, Ghosh, "has become ever more radically centered on the individual psyche while the collective— 'men in the aggregate'—has receded, both in the cultural and fictional imagination" (78). Yet "if whole societies and polities are to adapt, then the necessary decisions will need to be made collectively, within political institutions, as happens in wartime or national emergencies. After all, isn't that what politics, in its most fundamental form, is about? Collective survival and the preservation of the body politic?" (54). *Ducks* is undeniably centered on the individual psyche and the nuclear family, but insofar as it foregrounds the American nation's collective environmental failings and generates a sensation of collective angst around those failings, I would argue that it nonetheless generates aesthetic impetus for collective survival. Ellmann is not especially interested in "men in the aggregate"—men as the aggravate might be more appropriate—but her novel's porous subjectivity still manages to gather readers around matters of shared concern. As Robbins points out, if widespread collective change is ever going to come into existence, "this chance will clearly not happen by a sudden mass exercise of Kantian ethics." Instead, it "will happen as an outgrowth of habitual desires, fears, and anxieties, embarrassed perceptions and guilty pleasures that, though pervaded by thought, do not belong on that level of rigorous conceptual rationality that Kant elsewhere demanded" (86). Kant "turns to the aesthetic in his *Critique of Judgment*… because he can see the rational community he desires will never come about by submission to rationality.

People must be induced or cajoled by other means to bind themselves together" (95). The molecular form of *Ducks, Newburyport* creates just such an imaginative binding by way of formal experimentation.

This "binding" is of course limited by readership, and any collective where the barrier to entry is a thousand-page experimental fiction is going to be a limited. But I think that the aesthetic wager of *Ducks* is still worth dwelling on. Ellmann's "cozy" stream of consciousness takes habits and fears and apple pies and rolls them together, multiplies them by political-ecological crisis, and fires them at you erratically, until it's not exactly clear where the boundaries around such things used to be drawn. Putting the individual subject and the American nuclear family up for examination, Ellmann finds them porous—in constant interchange with the chemical landscape even as fantasies of independence persist. Her text encounters the objects of American domestic life as processes of care and exploitation, foregrounding the fundamental instability of existence even as she allows for the value of stability as a goal and fantasy. In staging these fantasies and their unravellings, *Ducks, Newburyport* makes a persuasive case for the role of felt security in the Anthropocene. Anxiety, taken as the logical affective accompaniment to "felt security" under climate threat, becomes a collectivizing structure of feeling: one that is managed together, or not at all.

Ducks, perhaps better than any of the texts discussed so far, habituates readers to alternative rules of notice for encountering climate fiction. I've been arguing throughout this project that the familiar realist tools of description, listing, metonymy, and even historical reference might each contribute to the project of representing climatological crisis. I've also been working under the assumption that novels are technologies of attention: that they carve up the objects that form a common world into newly perceptible dynamics. *The Overstory* asked readers

to think in terms of open systems. *Happiness* troubled fantasies of independence with the realities of the metabolic process. *Future Home* located the folded temporality of inheritance in the labor and objects of domestic life. In its molecular orientation, *Ducks* serves as a limit point to this trajectory: how much can we carve something up? When does shifting the terms of the perceptible lose its political impact? In some ways *Ducks'* interest in continuity suggests that the molecularization of the present results in political stasis: that encountering a world of shifting molecular processes is so overwhelming that the only response is to double-down on the maintenance of familiar institutions, however flawed. But as I've argued throughout this dissertation, continuity is distinct from stasis. Duck's molecular form makes visible the sheer energy that goes into maintaining the present. In de-naturalizing this labor, it also asks how the energy might be redistributed.

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