

EDIBLE SUBJECTIVITIES: MEAT IN SCIENCE FICTION

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ABSTRACT

This dissertation argues for the critical urgency of both challenging the constitution of subjectivity itself and disputing the *a priori* exclusion of other animals from attaining some kind of ethico-political subject-status. Deploying a Baradian performative posthumanist analysis attentive to patterns of difference, I engage the theoretical tools of ecofeminism, critical animal studies (CAS), and material ecocriticism to interrogate subjectivity by attending closely and critically to twentieth and twenty-first century Euro-American Anglophone science fiction (SF) stories about meat. Meat animal narratives open the subject to alternative modes of knowing that anthropocentric epistemologies foreclose, intervening against the structural exclusions imposed by various material-discursive apparatuses of domination that define, authorize and enact subjectivity as always and only human, over and against the figure of the animal. SF, a genre of alterity that has long been at the vanguard of literary engagements with nonhuman subjectivities, likewise works to subvert hegemonic notions of the subject as always-already human and complicate overdetermined configurations of “the subject” as an ontologically predetermined entity. Engaging SF narratives about human cattle dystopias, alien encounters, *in vitro* meat and alimentary xeno-symbiogenesis, I approach subjectivity as an emergent phenomenon born of the intra-action of differentially materialized agential entanglements, and—crucially—their constitutive exclusions. Rejecting subject-object dualism as an unliveable onto-epistemological paradigm that excludes anything edible from relations of respectful use, I argue for the necessity of enacting subjectivities in terms of concrete practices of restraint and humility, with humans firmly situated as embodied animal beings, enmeshed with and accountable to a much larger community of more than human, more than animal and more than animate actants on a finite planet.

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1. Introduction: Subjects in Meat Stories

“Among the fogs and miasmas which obscure our fin de millénaire,” Guattari observes, “the question of subjectivity is now returning as a leitmotiv” (Guattari 1995, 122).

Scholarly interest in ‘the animal’ has likewise never been higher than at the turn of the third millennium.¹ Critical work on animals and subjectivity typically proceeds either by arguing for the ethical imperative of including (some) other animals in dominant conceptions of ‘the subject,’ or, on the other hand, deploying the material-semiotic figure of the animal as a limit case to deconstruct the notion of subjectivity altogether (Derrida & Roudinesco 2004, 63; Calarco 2017, 35; Glenney-Boggs 2012, 3; Braidotti 2016, 13-4; Weil 2012, 2; Pick 2011, 2). Often construed as ill-matched projects (eg. Haraway 2008b, 176), I argue for the critical urgency of both challenging the constitution of subjectivity itself and disputing the *a priori* exclusion of other animals from attaining some kind of ethico-political subject-status (Braidotti 2016). Mindful of the well-established role of narrative in the enactment of subjectivities (Vint 2007; McHugh 2011) and attentive to the emergence and proliferation of subject forms through the edible encounter (Bennet 2010; Turner 2014), I deploy the theoretical tools of ecofeminism, critical animal studies (CAS) and material ecocriticism to interrogate subjectivity by attending closely and critically to twentieth and twenty-first century Euro-American Anglophone science fiction (SF) stories about meat: “the most delegitimated subject

¹ Following Midgley (1979[1995]), at times I use the word ‘animal’ for convenience to denote “animal other than human,” “but it must never be forgotten that we have no clear basis for [this division]... Drawing analogies ‘between people and animals’ is, on the face of it, rather like drawing them between foreigners and people” (15). I am also mindful of Derrida’s (1991b) admonition that the term ‘animal’ subsumes a nearly unfathomable diversity of creaturely life beneath a falsely unitary term.

position possible in our society,” according to Plumwood (2012, 58). Western societies “have developed strategies for blocking out and not hearing the speech of those in that position” (ibid.): listening to meat requires not only the dismantling of dualistic constructions of human exceptionalism, but also an understanding of the edible encounter as a transcorporeal process of mutual hybridization in which selves and others remake each other in a profoundly unequal process of becoming-with (Plumwood, 1993; 2002; Alaimo 2008; 2010; Haraway 2008a). Acknowledging the “significantly unfree” ways in which humans and animals agentially “co-shape” each other (Haraway 2008a, 72) means paying attention to “the way in which large scale forms of violence create and reproduce systems of domination” (Wadiwel 2015, 9). Subsequently, my analysis intervenes against the structural exclusions imposed by various material-discursive apparatuses of domination that define, authorize and enact subjectivity as always and only human, over and against the figure of the animal. At the same time, I argue for the critical necessity of complicating notions of subjectivity and subject-object dualism altogether by remaining open to the liveliness and agency of the more-than-human, more-than-animal and more-than-animate world. Rejecting the bifurcation of the biotic domain into ontologically pre-determined subjects and objects, I argue instead for understanding ‘reality’ as a “subject-subject continuum” (Matthews 2003, 7) wherein subjectivities coalesce as material-discursive knots within dynamic, multispecies webs of agency.

Following Braidotti (2013), my analysis insists that the notion of subjectivity “enables us to string together issues that are currently scattered across a number of domains”—

social, political, ethical and ecological, to name a few (Braidotti 2013, 42). In other words, subjectivity continues to play a crucial role in structuring relations of response-ability between variously positioned Earthly agencies. Coined by Haraway (2008a, 88), the neologism ‘response-ability’ surpasses “simplistic framings of ‘responsibility’ as a question of human agency in a passive and inert world” (van Dooren & Bird Rose 2017, 264). To emphasise response-ability—the capacity to respond—is to stress that all creatures respond to their world and that “through these responses worlds are constituted” (ibid.). There is no singular, predetermined ‘responsible’ reaction, “only the constantly shifting capacity to respond to one another,” whatever that response constitutes (264-5).² Rather than getting rid of the concept of subjectivity altogether, “[w]e need to devise new social, ethical and discursive schemes of subject formation to match the profound transformations we are undergoing” (Braidotti 2013, 12). The implicit question here, as van Wyck puts it, is “what kind(s) of subjectivity can we hope for in our imaginings of possible futures?” (1997, 84); even more pressingly, “we need a vision of the subject that is worthy of the present” (Braidotti 2013, 52). This dissertation engages and strives towards critical conceptions of subjectivities in the plural, eschewing fantasies of autonomy and the politics of exclusion in favour of an anti-dualistic, non-hierarchical and pluralistic understanding of multiple subject-positions in multiple registers that far exceed the domain of ‘the human’ (Braidotti 1994; 2013; 2014; 2016; 2017). In the pages that follow, I will outline my understanding of subjectivities both extant and extrapolative and contextualize my research within SF literary theory,

² Indeed, sometimes exercising response-ability might mean doing nothing at all, as Martin, Myers and Viseu point out (2015, 11). Non-interference in predator-prey encounters, despite the clear suffering of the prey, for example, is an obvious example of enacting care for wildlife and their ecosystems.

before sketching key concepts like transcorporeality and the term ‘meat’ itself. I will then provide some methodological protocols for reading, outline the theoretical frameworks of ecofeminism, critical animal studies and material ecocriticism and finally provide a brief chapter overview.

Subjectivities and Agencies

The “multifarious theoretical jobs” the concept of subjectivity has been called upon to perform has no doubt contributed to the millennial fixation with the so-called question of the subject (Smith 1988, xxvii). By and large, the subject has been construed as “the unified and coherent bearer of consciousness,” “the intending and knowing manipulator of the object, or as the conscious and coherent originator of meanings and actions” (Smith 1988, xxx; xviii). Simultaneously, in more explicitly political discourse the subject signifies someone who is sub-jected to a particular configuration of power (xxxii); the subject is “the place where ideology takes its effect” (First & Woolly, 1982, 118; in Smith 1988, 69). Both determined by larger forces (social formations, language, political apparatuses) and determining as a locus of agency from which to contest these interpellations (Williams 1983, 310), the dialectic at the heart of subjectivity only becomes an aporia when wedded to the notion of entirety—when the subject is conceived of either as entirely submitted to the domination of the ideological, or “entirely capable of choosing his/her place in the social by dint of possessing full consciousness” (Smith 1988, 24). This dissertation contests these all-or-nothing fantasies, insisting upon possibilities for resistance to regimes of subjectification. Following McHugh (2011), I maintain that animal narratives—including narratives concerning those animals who

become meat within carnocapitalist systems of production—can open the subject to alternative modes of knowing that anthropocentric epistemologies foreclose.

Prominent among these foreclosures is the assumption that “the subject is always already human” (Wolfe 2003, 1), a move that betrays “an ideological commitment to conceptualizing human being over and against animal being and privileging ideals of human consciousness and freedom as the centre, agent and pinnacle of history and existence” (Weitzenfeld & Joy 2013, 5). According to Wolfe, this “fundamental repression underlies most ethical and political discourse” (2003, 1). However, political and ethical subjectivity has rarely been equated with mere membership in the human species, but rather with a particular cluster of attributes skewed towards a very gender, racial and class-specific kind of human: the rational, self-determining subject-as-citizen, bearer of inalienable rights and owner of property (Braidotti 2013, 13; Calarco 2016). By such a yardstick, as Braidotti points out, “not all of us can say, with any degree of certainty, that we have always been human ...or are even considered fully human now, let alone at previous moments of Western social, political and scientific history” (11). By “transposing a specific mode of being human into a generalized standard, which acquires transcendent values as *the human*” (26), the unmarked ‘human’ functions as a normative convention of ‘sameness’ by which all others are assessed and organized, a highly regulatory process “instrumental to practices of exclusion and discrimination” (26). According to Braidotti,

Central to this universalistic posture and its binary logic is the notion of ‘difference’ as pejoration. Subjectivity is equated with consciousness, universal

rationality and self-regulating ethical behaviour, whereas Otherness is defined as its negative and specular counterpart. (15)

This obsession with sameness and reluctance to affirm difference as anything but lack (Minh-ha 1997) is an expression of what Plumwood (1993) has identified as a hierarchical dualism—man/woman, human/animal, mind/body and subject/object, to name a few—wherein the leading term in each pair is constructed through the denial and backgrounding of its oppositional subordinate (Plumwood 1993). Resisting this “strange segregation of humans from their [nonhuman] kindred that has deformed much of Enlightenment thought” (Midgley 1983[1995], xxiv), this dissertation participates in a well-established trajectory of critical feminist work denaturalizing hierarchically dualistic configurations of the subject, remaining attentive to the ways in which subjectivity is always already relational, an emergent phenomenon rather than an ontic entity that precedes the terms of the relating (Barad 2007, 2012).

This is not to suggest that the subject is purely discursive; subjectivity is material as much as it is abstract (Vint 2007, 6). Rather than a linguistic mirage, I follow posthumanist critics in understanding subjectivity as a material-discursive construct produced and buttressed against the threat of the agential other in part through the operation of biopolitics (Foucault 1976; Agamben 2004; Rajan 2006; Chaudhuri 2007). Under biopolitics, life itself is explicitly put at the centre of political calculation, both at the level of the population and at the level of the individual corporeal body (Foucault 1976, 135–161; Rajan 2006, 6; Agamben 2004). A “mechanism of capture of the multiple potentialities of the body” (Bennet 2010, 98), for Agamben biopolitics emerges

as part of an “anthropological machine” for the production and performance of a specific kind of subjectivity rooted in hierarchy and human exceptionalism (Agamben 2004). A material-discursive apparatus of dualism that constructs the subject against the non-subject (Agamben 2004; Rajan 2006), the anthropological machine constitutes “the creative repertoire of symbolic, discursive, institutional and material means and taxonomies by which the category of the human produces and performs itself” (Pedersen 2011, 68). The anthropological machine biopolitically harnesses the (re)productive potential of human and nonhuman bodies alike to both generate capital and produce a specific type of subjectivity within any given body (Vint 2007, 18)—including the absent subjectivity of ‘bare life’ stripped of all social and political meaning (Agamben, 2004). The paradigmatic example is of prisoners at a Nazi concentration camp; for a non-human animal example of ‘bare life’ of one need look no further than the factory farm. For Agamben (1998), sovereignty lies precisely in exercising the authority to determine which life forms count as “bios” (political subjects) and which are relegated to the bare, physical life of “zoë,” a category foundational to but excluded from political consideration (in Glenny Boggs 2012, 13; Braidotti 2012, 302). Put another way, the “sovereign subject” manifests through the performative enactment of the power “to define who matters and who does not, who is disposable and who is not” (Mbembe 2003, 27); white and heterosexual by default, individualistic and competitive and governed by reason rather than emotion, this sovereign subject remains steeped in a mind-body dualism that disavows its own material foundations (Agamben 2004). The human-nonhuman distinction lies at the heart of this operation of power; as Wolfe argues, the animal’s “specificity as the object of both discursive and institutional

practices ... gives it particular power and durability in relation to other discourses of otherness” (2003, 6). The figure of the animal, according to Wolfe, “has always been especially, frightfully nearby, always lying in wait at the very heart of the constitutive disavowals and self-constructing narratives enacted by that fantasy figure called “the human” (Wolfe 2003, 6). Animals, then, “are embedded as and at the core of subjectivity,” a figure of “alterity that underwrites the formation of the subject as its disavowed point of origin and unassimilable trace” (Glenny Boggs 2012, 38, 5).

Understanding “animal” as the definitional opposite of “human” rather than its larger context, the anthropological machine delineates those who matter from that which does not through an immunity paradigm of separation and disavowal that seeks to inoculate the (human) self from the (less-than-human) other (Esposito 2008; Stanescu 2013, 139; Haraway 1991, 204). This logic of immunization justifies violence against those relegated to a position outside the “munus” of the social body (Esposito 2008, 44), underscoring the non-subjectivity of supposedly “bare” animal life. The always-already specied division between subject and object is centrally implicated in the caesura between inedible and edible bodies—bodies that matter on the one hand (Butler 1993; 2004) and bodies that are “killable” (in Haraway’s [2008] words) and thus subject to a “non-criminal putting to death” (as Derrida [1991a] puts it) on the other. Put another way, “the human-animal distinction constitutes an arena in which relations of power operate in their exemplary purity (that is, operate with the fewest moral or material obstacles)” (Pick 2011, 1).

However, this biopolitical production of species difference at the heart of sovereign subject formation is ambivalent rather than absolute, “allowing for the contradictory power to both dissolve and reinscribe borders between humans and animals” (Shukin 2009, 11). Humans may be animalized through racist and sexist ideologies, animals may be humanized through practices of pet-keeping or animal rights discourses and the material substance of human and nonhuman bodies may be recombined in novel ways in service of profit (Wolfe 2012). Human subjectivity is thus produced via the interpenetration of human and nonhuman, a strategic instability that lies at the heart of biopolitical discourse. Subjectivity—both “the battleground and the byproduct of biopolitics”—“emerges in and remains unhinged by cross-species encounters” (Glenny Boggs 2013, 187, 24). This core instability renders resistance to biopolitical subjectification possible—the site of ideology’s acting upon the body is also a potential site for alternative subject and discourse formations, including configurations of subjectivity not predicated on human exclusivity (Vint 2007, 19; 2010a; Glenny-Boggs 2013, 62). Openness to nonhuman subjectivities is crucial; after all, as Barad argues, “we would be remiss if the acknowledgment of the differential constitution of the human in relation to the nonhuman only served to refocus our attention, once again, exclusively on the human” (Barad 2012, 31). Regan’s (1983) deontological argument for animal rights, for example, articulates subjectivity in a non-anthropocentric register, stipulating that

individuals are subjects-of-a-life if they have beliefs and desires, perception, memory and a sense of future, including their own future; an emotional life together with feelings of pleasure and pain; preference and welfare-interests;

the ability to initiate action in pursuit of their desires and goals; a psychophysical identity over time; and an individual welfare in the sense that their experiential life fares well or ill for them. (276)

However, while anti-anthropocentric in the sense of being explicitly constructed to encompass (some) other animals, Regan's definition of subjectivity elsewhere installs a problematic distinction between "those individuals who are conscious and sentient" vs. those "who are conscious, sentient and possess...other cognitive and volitional abilities" (153), a division that in some ways hierarchizes moral worth based on a criterion of similitude to allegedly 'human' capacities. As Wadiwel (2015) argues, it is unclear as to whether Regan's bifurcation of subjectivity into 'moral agents' and 'moral patients' is "a factual claim made on the basis of an external truth, or a political claim that reflects a hierarchy of differences that has placed a socially and discursively constructed 'rational able bodied' human at the top of the 'cognitive' heap" (40).

(Eco-)feminist articulations of the subject have fared better at avoiding this lingering hierarchization of difference and the concurrent installation of similitude to the alleged 'human' norm as the basis of ethical subjectivity (Plumwood, 2002). For decades feminists have theorized at the forefront of anti-anthropocentric modes of subject-formation by insisting on the fundamentals of creaturely embodiment while taking "affirmative and critical account of emergent, differentiating, self-representing, contradictory social subjectivities" (Haraway 1991, 147). Subjectivity, as Grosz argues, "can be thought of in terms quite other than those implied by various dualisms" (1994, vii). Barad (2007) and Haraway (2008, 2016) argue that subjectivities and other

phenomena be understood as performative enactments rather than preexisting entities, materializing via the intra-action of various material-discursive apparatuses that include (but are not limited to) “industrially produced meats, international veterinary practices, biosecurity practices, international trade agreements [and] transport networks” (Barad in van der Tuin 2012, 56). As Barad argues,

the very practices of differentiating the “human” from the “nonhuman,” the “animate” from the “inanimate,” and the “cultural” from the “natural” produce crucial materializing effects that are unaccounted for by starting an analysis after these boundaries are in place. (Barad 2012a, 31)

In this account “there is no single causal factor determining the subject; the elements of subjectivity intra-act in a complex web” (Hekman 2010, 101). What is needed and what this dissertation strives to articulate through close readings of SF, is “a subject that works across differences and is also internally differentiated, but still grounded and accountable” (Braidotti 2013, 49).

Braidotti’s articulation of subjectivity as a configuration to which to be held accountable is crucial; Donovan (2016) makes a similar argument in a different register when she suggests

we define *subjects* as entities who communicate their wishes—wishes that we humans can understand, because we belong to the same communicative medium. Subjects are creatures, in other words, who have a point of view, or a standpoint. (2016, 266, original italics)

This understanding of subjectivity acknowledges both the alterity of the other's standpoint and the continuities between self and other through which subjectivities become legible—it enfolds (some) other-than-human-animals into what is otherwise a distinctly Levinasian ethic that understands “responsibility as the essential, primary and fundamental mode of subjectivity” (1985, 7). Ethics, for Levinas, “does not supplement a preceding existential base; the very node of the subjective is knotted in ethics understood as responsibility” (ibid.):³ for Calarco (2016) this Levinasian configuration of subjectivity constitutes an ethics of indistinction, while Barad (2007, 2011) and Haraway (2008, 2016) have articulated their own notions of response-ability under the rubric of an ethics of entanglement. Whatever the nomenclature, key here is that subjectivities emerge within differential modes of response-ability—the subject emerges through the self-other encounter, through the recognition of the other as a “thou” in relation to the “I” of the self (Buber, 1923). Response-ability is about agency (Barad, 2012a, 55)—the capacity to effect change, to act, regardless of how that actant (Latour 2005) is interpellated into extant subject-forms (Bennet 2010; Cudworth & Hobden, 2015). Agency is enacted through the ongoing, differentially materializing relations of bodies, selves and worlds: it is

about response-ability, about the possibilities of mutual response, which is not to deny, but to attend to power imbalances. Agency is about possibilities for worldly reconfigurations. (Barad 2012a, 55)

³ While animal studies theorists have found his work compelling, Levinas himself denied that animals could experience themselves as a responsible subject to an Other's ethical demand or that they could provoke this kind of ethical response in humans (although in interviews he equivocated somewhat on these points e.g. “One cannot entirely refuse the face of the animal” [1988, 172]). Calarco has argued that the internal logic of Levinas' ethical account does not necessarily justify these exclusions (2008, 55-78)

Agency is not confined to the human realm; "we do not simply have agency, we are in and contribute to networks of agencies" (Iovino 2015, 85) that exceed categories like "subject," "human" and even "animate" (Bennett 2010, 6; see also Iovino 2015; Barad 2007; Latour 2005; Opperman & Iovino, 2014; TallBear 2011). Taking agency seriously as "a pervasive and inbuilt property of matter, as part and parcel of its generative dynamism" (Opperman & Iovino 2014, 3) means approaching matter itself as "a doing, a congealing of agency" (Barad 2007, 151), not the inert and passive stage upon which variously positioned actors perform. The stage and the actor are mutually constitutive—agency is an emergent property of temporally, spatially and relationally dynamic material assemblages of actants-in-relation (Latour 2005; Bennett 2010).

Adopting a stance of openness to the agency of the more-than-human world is especially crucial in our current historical moment (Plumwood 2002), in which unruly agential assemblages of industrial externalities and climatic planetary forces have begun to flex their muscles. The problematic moniker 'the Anthropocene'⁴ highlights this

⁴ Of course, "an unexamined anthropos is too large and slippery a concept to be at the heart" of Anthropocene discourse (Head 2013, 122); it is somewhat ironic that the term "Anthropocene" has gained prominence just as the dominant Western construction of an unmarked human subject has begun to collapse (Derrida 1991a). As Dipesh Chakrabarty (2009) points out, why lay the blame at the feet of "humankind" as a whole, when it is the Global North—historically White and still overwhelming so—whose ecocidal consumptive tendencies have forced the entire planet into a position of ecological precariousness? Furthermore, although Anthropocene discourse tends to emphasize mutual connectivity and ecological interdependence, the term itself is meaningless outside of a dualistic conception of human as categorically separate from 'Nature' (Dibley 2012a; Crist 2013; Colebrook 2012). Indeed, one of the most oft-repeated quotes in the scholarly and popular discourse on the Anthropocene is that human activities now "rival the great forces of Nature" (see Steffen, Crutzen & McNeill 2007). The Anthropocene risks reifying the very anthropocentrism it seeks to temper; this is most evident in (excessively) optimistic 'ecomodern' strains of Anthropocenic discourse that predict the inevitable triumph of human technological ingenuity over any obstacles that the fickle (yet somehow passive) figure of 'Nature' might throw at us. Seen in this light, scholarly ambivalence towards term "Anthropocene" seems only prudent. Following biologist E.O. Wilson, perhaps we should dub Earth's new era of history not the "cheerful" Anthropocene, but instead the Eremocene, the Age of Loneliness (Wilson 2013, no pagination).

dawning awareness of the breadth and depth of entanglement between human and nonhuman agencies, materialities and scales.⁵ In the anthropocene, the appetites of late capitalism have precipitated a “metabolic rift” in planetary physical, chemical and biological continuity (Wark 2015); so-called ‘human’ actions are widely recognized to manifest on simultaneously a molecular and global scale (Zalasiewicz et al. 2011).

Capitalism—an apparatus of wealth accumulation that alienates subjects and things by removing them from their lifeworlds and exchanging them “with other assets from other lifeworlds, elsewhere”—is an apparatus that obviates entanglement, one that is ultimately hostile to multispecies planetary life (Tsing 2015, 5). Surviving late capitalism on a damaged planet means abandoning “the naive belief that many still have in a de-animated world of mere stuff” (Latour 2014, 8) and reconfiguring hegemonic constructions of reality as an orderly field of subjects and objects into something more labile. The root cause of any effect is not any isolated subject-form, but a material-semiotic assemblage of human and nonhuman agencies, including the agencies of the other-than-animal world (Haraway 2008b). Agency does not reside in bounded bodies, but arises from “the ongoing encounter, the contact, the tension and entwinement between each body and the breathing world that surrounds it” (Abrams 2010, 126; see also Von Uexküll 1940; Fawcett 2012, 63). This “ongoing encounter” with worldly alterity happens even within what is commonly thought of as the individual organism: perhaps the best known example is lichen, which is actually a composite creature of algae and fungi (Hird 2009, 59; Griffith 2015). The human organism is similarly multiple, a

⁵ I am here referring to the Western academe’s “dawning awareness” of the agency of the more-than-human world; as Indigenous scholars point out, many Indigenous cosmologies have long understood the more-than-human world to be agential (TallBear 2011; Todd, 2014).

microbiome of viral, bacterial and other “messmates” (Haraway 2009), myriad even on a genetic level—an intimate entanglement of human and other-than-human affects and materialities all the way down. In this sense, as Smith argues, the state of being a “subject” might be “best conceived of in something akin to a temporal aspect—the ‘subject’ as only a moment in a lived life” (Smith 1988, 37). The subject emerges as a coherent entity via the intra-activity of material-discursive apparatuses and the inherent dynamism of matter itself. Subjects do not exist in isolation, but are emergent entities-in-flux (Braidotti, 2013) that provoke specific modes of response-abilities (Haraway, 2008) in relation to other differentially materialized yet nevertheless entangled actants (Barad 2007, 2011).

Transcorporeality

If subjectivities emerge differentially within various flows and congealments of always-already agential matter, then the act of eating is one of the most literal sites of ‘transcorporeality,’ a term coined by Alaimo (2008; 2010, 2) to emphasize the permeability of embodied life. As Lovino glosses it, transcorporeality “express[es] the tangles of organism and discourses,” foregrounding the “unsolvable bond connecting life forms and life conditions” (2015, 72). Transcorporeality stresses that what we think of as discrete “organisms” are really temporally and spatially contingent coagulations of lively matter, “not static organized unities, but porous bodies that assemble into compositions through a variety of relations” (Buchanan 2008, 174). This confluence of various material agencies intra-actively reconfigure subjectivity a material-discursive performance, or even “dissolve the outline of the subject” altogether (Alaimo 2014, 187;

lovino and Opperman 2014, 5). Eating is an excellent example of transcorporeality in action. Against the dualistic “conquest model” of eating that “presents nonhuman matter as ... the means to human action” by characterizing food as fuel to be assimilated to the substance of the self (Bennet 2007, 133), transcorporeal accounts understand “eating as a series of mutual transformations in which the border between inside and outside becomes blurred” (Bennet 2007, 134). Eating highlights our dependence on both natural ecological systems and cultural technological forms; it bridges the living and the dead (Retzinger 2008) “in a complex rhythm of ingesting, digesting and expelling” (Slusser 1996, 4). The transcorporeal relation of eater and eaten requires each to be mutually mutable, “to have always been a materiality that is hustle and flow as well as sedimentation and substance” (Bennet 2007, 134-5); in this way, food “reveals materiality’s instability, vagrancy, activeness” (136). The burgeoning field of nutritional epigenetics only reinforces this transcorporeality of matter, approaching food not as raw material but “as a miasma of biologically active molecules in which genomes are immersed” and expressed (Landecker 2011, 169)—“‘the environment’ is not (just) ‘out there’ but is always the very substance of ourselves” (Alaimo 2010, 4).

Meat

‘Nature,’ according to Raymond Williams, is the most complicated word in the human language (1983, 219); this dissertation continues in the broad tradition of ecocritical inquiry into literary ‘natures’ by examining SF stories dealing with the ontologization of other animals (‘nature’s’ most enduring synecdoche) as food. Limiting my analysis to edible animal tissue within one particular mode of storytelling pares down the vast

corpus of literary food to a more manageable serving size and allows for a deeper and more sustained engagement with the material-discursive genealogies of comestible bodies and their biopolitical interpellation into various (non)subject-positions. My choice of the term "meat" to describe creaturely biomatter consumed as food is strategic.

Unlike the Spanish, Portuguese and Italian 'carne' (which references animals' flesh) or the French 'viande' (which references "the[ir] bygone life"), in English 'meat' is etymologically related to not to animals but simply to 'meal' (Marder 2016, 101). At the time of the King James Version of the Bible (seventeenth century), 'meat' meant any substantial food, a usage still evident in phrases like 'the meat of the argument' (Adams 2010, 53). The term has only in the last few centuries mapped neatly onto animal flesh-as-food.

Plumwood (2002) understands 'meat' to refer only to the commodified flesh of animals incarcerated in the modern animal industrial complex, arguing that it is inaccurate to use the term to describe pre-modern Western animal-derived food or contemporary subsistence hunters' consumption of animals' flesh. Plumwood's reluctance to label non-capitalist flesh-as-food as 'meat' stems from her staunch support of ecologically embedded and Indigenous life-ways and her insistence that human predation on other animals not be demonized, a position I wholly support. To be perfectly clear—I am not mounting a universalist argument against all human practices of zoophagy across all cultures and histories—such a move would be wholly incompatible with my ecofeminist orientation. Any critique of carnism must be carefully contextualized within the specific loci-of-relations of production and consumption that underpin it—meat is an emergent

phenomenon, not an ontic entity or a static substance. However, for reasons of readability, I have chosen throughout to use the term “meat” as it is commonly understood to refer simply to flesh-as-food. I do this partly because the SF authors I engage are all Anglophone writers of the twentieth and twenty-first centuries who use the term “meat” in this sense, even within loci-of-relations that would not meet Plumwood’s strict criteria. More substantially, I disagree with Plumwood that we need to understand the term ‘meat’ as a category of negation born of instrumentalization, applicable only to the very most abusive and industrial of flesh production practices. Instead, I approach ‘meat’ as a term that simply acknowledges from the outset that animals are indeed edible, humans included and that all corporeal bodies ultimately nourish others. All bodies can be understood as meat, human, animal and otherwise; however, the undeniable fact that many fleshy bodies are, ontologically, mutually edible (‘meat’) does not mean that we should all be ontologized as available for consumption (‘food’), as Taylor and Struthers-Montford (2018) argue.

Although I use the term “meat” in a fashion that she would likely find too broad, I stand firmly with Plumwood in eschewing ahistorical universalist condemnations of human meat-eating—I am not concerned with critiquing global practices of meat consumption that operate outside of dualistic configurations of subjectivity, even those that nevertheless proceed via capitalist economic frameworks. Rather, I contextualize my critique of carnism (when it arises) within the “metabolic rift” (Wark 2015) of our current ecological crisis and the dualistically-configured material-discursive apparatuses of domination that drive it—including, prominently, the ecologically disastrous animal

industrial complex, itself intimately implicated in settler colonialism and the seizure of Indigenous lands (Struthers-Montford 2017; DeJohn Anderson 2004). As McHugh points out,

the mind-boggling ways and numbers in which [domesticated] animals are killed in our time are unprecedented, as are the mechanisms of rendering these processes invisible. Although these conditions may have been developed to serve expansions of capitalism and empire, they also create new opportunities for dismantling these structures. (McHugh 2010 15)

Meat-animal narratives, McHugh argues, “offer ways of beginning to rethink not simply how meat histories are shared but, more, complexly, are involved in co-constituted futures that exceed the reference points once stabilizing and now dissolving species” (2010, 209). Attentive to entanglements in their specificity and accountable to their differentially materialized exclusions, this dissertation eschews the imposition of meat-avoidance as a universal moral doxa and instead engages “the incomplete, ill-formed stories of meat” (ibid.) as vital resources not only for reimagining sustainable living arrangements but also for critical thinking more broadly, prompting “the difficult and necessary work of framing ever more possible answers” to the question of who (or what) can be a subject and how to respond to such a configuration (ibid.).

Science Fiction

If, as Braidotti insists, the complexities of our times require “a form of estrangement and a radical repositioning on the part of the subject” best accomplished through “a strategy of defamiliarization” from dominant visions of subjectivity (Braidotti 2013, 88), science

fiction (SF) is superbly suited to the task. The genre has long defied definition (Knight, 1967). Following Bould and Vint (2011), I take it as a given that “[t]here is no such thing as a ‘neutral’ or ‘objective’ definition of the genre because the very features of what is named as SF emerge in the process of pointing and naming” (Bould & Vint 2011, 5). The genre has been influentially described by Suvin as “the literature of cognitive estrangement” (Suvin 1979, 13), a formulation geared towards (re)defining science fiction as serious literature worthy of serious critical engagement. Suvin rejects the notion that science fiction must be scientifically accurate, seeing the genre as an agent of “social critique and political transformation rather than a source of patent applications” (Bould & Vint 2011, 18). Nevertheless his formulation of SF as a genre whose features are “not impossible” (1979, viii) “has tended to reinforce a distinction between SF and fantasy that is not necessarily clear when one examines many texts widely regarded as ‘SF’” (Bould & Vint 2011, 19). As Mieville points out, warp engines are no less “fantastical” than dragons (2009); Delany (1984a) and Jones (1999, 16) have likewise noted that SF proceeds by manipulating language to create the illusion of scientific expertise. SF is not about scientific accuracy, nor is it strictly extrapolative; it is heavily indebted to myth and to the Gothic romance, bleeding into horror, fantasy, Westerns and magical realism (Delany 1984a; Aldiss & Wingrove 1973; Bould & Vint 2011, 20). “What sets it apart from other forms of fiction,” according to Le Guin (1976), seems to be its use of new metaphors, drawn from certain great dominants of our contemporary life—science, all the sciences and technology and the relativistic and historical outlook, among them. Space travel is one of these

metaphors; so is an alternative society, an alternative biology; the future is another. (vi)

Bould and Vint (2011) argue for understanding SF “as an ongoing process rather than a fixed entity” that preexists its denomination (1), a negotiated and shifting “network of linked texts, motifs, themes and images” (Vint 2014: 14). It is itself an assemblage of entangled actants—critics, fans, media, markets, materialities and more—encompassing vast asymmetries of influence and sometimes conflicting interests (Bould & Vint 2011, 19). No wonder Haraway declines to limit the initials “SF” to just “science fiction,” understanding SF as a “potent material-semiotic sign for the riches of speculative fabulation, speculative feminism, science fiction, speculative fiction, science fact [and] science fantasy” (Haraway 2015, no pagination, para. 8). However defined or abbreviated, science fiction/SF “exists as a fuzzily-edged, multidimensional and constantly shifting discursive object” within which thematic patterns emerge and are reabsorbed (Bould & Vint 2011, 5).

Among the most persistent of these patterns is SF’s perspective of estrangement (cognitive, speculative, affective or otherwise). Texts in the genre articulate a “point of difference” (Roberts 2006, 145) from which to construct worlds in (often critical) dialogue with the world in which they are read (Delany 1984a, 117). In this way, SF can be approached as a “privileged site” for probing the limits of subjectivity and interdependency (Vint 2009, 11), an “undomesticated” literary mode able to raise “a range and variety of questions all but banned from the civilized tables of ‘mainstream’ fiction” (Slusser 1996, 2). While there is certainly “no necessary, fixed or consensus

relationship between SF and science” (Bould 2012, 6), as a genre that arguably emerged in its modern form over the course of a period of rapidly intensifying industrialization, technological elaboration and social upheaval, SF may be uniquely positioned to explore and interrogate the technoscientific cultures of capitalism (Candelaria 2005,vii; Aldiss & Wingrove 1973, 151; Vint 2014, 4); as Haraway declares in her famous ‘Cyborg Manifesto’ (1991), “[t]he boundary between science fiction and social reality is an optical illusion” (149). SF is “a territory of contested cultural reproduction in high-technology worlds” (Haraway 1989, 5), a literature of alterity (Vint, 2009) centrally concerned with “the interpenetration of boundaries of problematic selves and unexpected others” (Haraway 1991, 300). In these ways, the genre is invaluable in exploring questions of more-than-human agency and subjectivity and the messy, emotional and rigorous ethics of response-ability that such intersubjective encounters demand (Haraway 2011, 102; Vint 2009; Clement 2015):

Natural or not, good or not, safe or not, the critters of technoculture make a body- and soul-changing claim on their ‘creators’ that is rooted in the generational obligation of and capacity for responsive attentiveness. ... To care is wet, emotional, messy and demanding of the best thinking one has ever done. That is one reason we need speculative fabulation. (Haraway 2011, 102)

For Haraway, SF offers unique perspectives for thinking about the material-semiotic entanglements of human, animal and machine. If narrative forms are also “modes of subjectivity and identification,” discursive templates through which we actualize ourselves (Currie 1998, 130), then SF, as a non-mimetic genre, is uniquely positioned to “use narrative strategies impossible within the confines of realistic

representation” (Gomel 2012, 79). In the SF examined in this dissertation alone, such impossible strategies include species hierarchy-reversals, technopolitical conflicts around multispecies pluralism, semi-living coalitions of corporeal agencies and the ambivalent reconfigurations of subjectivity effected by interspecies metamorphoses.

While my focus on flesh-as-food in science fiction may seem niche, the genre has demonstrably been fascinated with questions of subjectivity, meat-eating and the more-than-human world for fully two centuries. While there can be no single definition of what counts as SF or when it can be said to have been born—various critics have located the roots of the genre as far back as the epic of Gilgamesh (del Rey 1980) or as recently as the pulps of the twentieth century (Delany 1984)—Mary Shelley’s *Frankenstein* (1818) is a popular candidate for the honour first science fiction novel (Aof Idiss & Wingrove 1973) that can also be approached as a key text for the study of vegan literature (Quinn 2018). Drawing upon Romantic ideas of Prelapsarian vegetarianism and ‘man’s’ subsequent carnivorous fall from grace (Quinn 2018, 154-5; Adams 1990, 148, 152; Belasco 2006), in *Frankenstein* Shelley constructs a vegetarian-feminist parable of a meat-eschewing creature assembled from slaughterhouse by-products “who, like the animals eaten for meat, finds itself excluded from the moral circle of humanity” (Adams 2010, 158). Another popular early SF novel, H. G. Wells’ *The Time Machine* (1894), also foregrounds meat-eating and subjectivities (human and otherwise). The novel combines contemporary fears of human devolution with social anxieties regarding Darwinism’s paradigm-shattering insistence on human-animal continuity, the latter which raised the uncomfortable “possibility that those animals consumed as meat were not essentially

different from the "we" who ate them." (Lee 2010, 251). The result is a narrative that "keeps returning to food and, in the end, turns out to be a story very much about eating" (Lee 2010, 254)—in Well's eschatological scientific romance, the effete, frugivorous Eloi live a life of leisure in a beautiful garden world and are preyed upon by the cannibalistic, working-class Morlocks, who live underground and whose unseen labour makes possible the idyllic pastoral paradise enjoyed by the scatterbrained surface dwellers. In a very literal sense, the Eloi themselves are a surface crop being cultivated by the Morlocks (Retzinger 2008, 382). The genre has continued to interrogate the relations between (meat-)eating and configurations of more-than-human subjectivity throughout the nineteenth and twentieth centuries and into the twenty-first.

SF is a contested and mutable "network in which it is always possible to make new and novel connections among existing nodes and always possible to link previously unconnected material" (Vint 2014, 14). Consequently, the texts engaged here are an eclectic bunch, thematically rather than chronologically approached. Some are winners of the genre's highest awards (Butler's *Xenogenesis* trilogy, 1988-1989; Pohl and Kornbluth's *The Space Merchants*, 1953) while others are overlooked minor works from major players in the history of the field (Simak's "Drop Dead," 1956; DeFord's "Season of the Babies," 1959; Tiptree's "Morality Meat," 1985). Some are popular contemporary mass-market paperbacks (Traviss' *Wess'har Wars* series, 2004-2008) and others are relatively unknown independent press publications (O'Guilin's *Bone World* trilogy, 2007-2014; D'Lacey's *Meat*, 2008; LePan's *Animals*, 2009). One is a speculative cookbook (Mensvoort & Grievink's *The In Vitro Meat Cookbook*, 2014) and another

rejects the label of “science fiction” altogether (Atwood’s *Oryx and Crake*, 2003).

Despite having long been a vibrant, multilingual genre, my analysis here is linguistically and geographically restricted to English-language, Anglo-American printed SF, omitting for reasons of space and difficulties of translation what is certainly a wealth of SF in other languages and media. Temporally, I focus on SF published during and after the second half of the twentieth century, a period of increasing awareness of the scope and severity of the anthropogenic ecological crisis. The common thread running through these varied texts is that they link, in differential trajectories and intensities, questions of subjectivity and agency to questions of meat production and/or consumption.

Systematic Methodological Framing

My analysis proceeds via the kind of performative posthumanist analysis outlined by Barad (2003), a methodology explicitly oriented to the more-than-human and one that “opens up many fascinating possibilities for studying the thought experiments of science fiction” (Vint 2008, 317). Posthumanism broadly speaking opposes overdetermined notions of human autonomy and disembodied subjectivity (Wolfe, 2003); as an interdisciplinary protocol of thought it “has brought about a profound epistemic shift with new configurations of intertwined physical and social and material and discursive understandings of the relations between the human and the more-than-human world” (Gaard 2011, 25). Posthumanism seeks to destabilize the human/animal distinction, move beyond anthropocentric ethical frameworks and challenge the epistemological configuration of the individual “knowing theorist” (Wolfe 2010, 125), thus problematizing the idea of the “Man of Reason” as “the allegedly universal measure of

all things” (Braidotti 2017, 18). A central task of posthumanism has been to flesh out the associations between binary structures of thought and configurations of subjectivity (Braidotti 2013, 76; Hayles 1999); Barad’s performative posthumanist methodology continues this task of fleshing out connections and denaturalizing binaries. For Barad, “the primary semantic units are not “words” but material-discursive practices through which boundaries are constituted” (Barad 2003, 818). Against representationalist methodologies that posit an ontological distinction between representations and the entities they purport to represent, Barad deploys the concept of diffraction as a “mutated critical tool of analysis” to discern and respond to patterns of difference (Barad 2003, 803). A term borrowed from physical optics and originally articulated in a feminist context by Haraway (1997, 34), “diffraction” means to “break apart in different directions” (Barad 2007, 168). A diffractive approach to textual analysis eschews binary or hierarchical constructions of difference to emphasize the necessity of “attentively and carefully reading for differences that matter in their fine details” (in Van Der Tuin 2012, 50). This strategy of “envisioning difference differently” (Thiele 2014, 203) “take[s] account of the boundary making practices by which the differential constitution of ‘humans’ and ‘nonhumans’ are enacted” without presuming that “the terms on either side of equivalence relations are given” (Barad 2003, 818; 808). By “directly tak[ing] up the matter of the cuts that produce distinctions between ‘human’ and ‘nonhumans’” (Barad 2003, 808), this kind of performative posthumanist analysis enacts an ethics predicated not on an some ‘unbiased’ external viewpoint but rather from a position of entanglement, an ethics that “insists on on understanding thinking, observing and theorizing as practices of engagement with and as part of, the world in which we

have our being” (Barad, 2003, 133; Barad, in van der Tuin 2012, 50). A feminist ethics of entanglement does not dichotomize or background exclusion, remaining attentive to “the obligations that are created when things are cut in a particular way at the expense of other ways of being” (Hollin, Forsyth, Giraud & Potts 2017, 22) and curious about the “alternative worlds lost at the moment of emergence” of any particular entanglement (24). Particular agential apparatuses materially and discursively enact particular exclusionary boundaries (Barad, 2003, 816, 203); these sometimes violent exclusions press home “our responsibility in making the future through our choices and actions in the moment, each intra-action shaping the future that might be” (Vint 2008, 317; Hollin, Forsyth, Giraud & Potts 2017). In attending to such possibilities and their foreclosures I draw upon: ecofeminist techniques of attentive listening, anti-dualism and intersectionality; critical animal studies’ emphasis on the resistant agency and alterity of the animal; and material ecocritical approaches to the agential entanglement of discourse and matter, theoretical orientations I outline below.

Ecofeminism(s)

Ecofeminism offers important ways to think about subjectivities and SF; like the genre itself, ecofeminism is all about imagining otherwise. “The very essence” of the field, according to Gaard, “is its challenge to the presumed necessity of power relationships” (1993, 19): ecofeminism is a set of theories and political practices that interrogate how the structures of power that authorize intra-human oppressions intersect and authorize the domination of nonhuman ‘nature’ (Sturgeon 2009, 9; Gaard 1993, 1; 2017; Adams & Gruen 2014; Warren 1994, 1). Though often unacknowledged,

ecofeminist thinkers anticipated many of the critiques made under the rubric of animal studies (eg. Wolfe, 2003) and ecocriticism (eg. Garrard, 2004), notably by interrogating “rights” paradigms that remain dependent on the conceptual scaffolding of hierarchical dualism (Fraiman 2012; Gaard 2010; Plumwood 1997, 2002). ‘New’ materialist or material feminist innovations likewise owe a great deal to ecofeminist thinkers, particularly regarding the critique of the life-nonlife boundary and the recognition of the agency of the nonhuman (including nonanimal) world. Ecofeminists have long argued for the ethical urgency of actively supporting social and political movements addressing differential forms of oppression between variously positioned human groups and Earth others; O’Laughlin (1993), for example, argues that ecofeminists must stand in solidarity with political struggles against racism and classism (her example is the United Fruit Workers grape boycott of the 1990s) in recognition of the fact that “ecological and health concerns can link consumers and laborers originally separated by class, color and culture” (Gaard 1993, 8; O’Laughlin 1993). A diverse and at times conflicted body of thought that might better be described in the plural (Sturgeon 1997, 168), ecofeminisms share a focus on gender/sexuality as a central category of critical inquiry, “not because gender oppression is more important than other forms of oppression; it is not. It is because a focus on ‘women’ reveals important features of interconnected systems of human domination” (Warren 2000, 2). Ecofeminist literary criticism brings this intersectional⁶ analysis of power relations to ‘mainstream’ posthumanist and ecocritical literary analysis, attending to the heterogeneous ways in which systems of

⁶ The term ‘intersectionality’ was coined by Kimberlé Crenshaw in 1989 to highlight the inadequacies of single-issue activism and theory to intervene in the intersecting oppressions endured by multiply-positioned subjects, such as Black women.

oppression interlock with and constitute one another (Campbell 2008, ix; Gaard & Murphy 1998; Opperman 2013). Building on feminist attention to the 'other,' ecofeminist literary criticism rejects binary notions of categorical difference or totalizing similitude (in Plumwood's terms, "the ocean of continuity vs. the desert of difference" [1993, 3]), instead understanding the self/other distinction as one of relative rather than absolute difference, heterarchically rather than hierarchically aligned (Gaard & Murphy 1998, 6; Armbruster 1998). Going well beyond "simply looking for literature that emphasizes women's or other marginalized people's sense of connection with nature" (Armbruster 1998, 106), ecofeminist literary criticism strives to create a space in which the voices of the subaltern can be heard on their own terms (Gaard 2017, xvi; Campbell 2008), advocating a praxis of "attentive listening" to attend to the subject (human or otherwise) and its idiolect as expressed through the "sensuous contact" of narrative (Donovan 1998, 74-96). Against anthroponormative theories of morality that install so-called human characteristics as the ethical yardstick *par excellence* against which to categorize and rank the more-than-human world, ecofeminist ethicists advocate a contextual and relational approach to ethics emphasizing care rather than duty; narrative form is not only useful, but perhaps even "native" to this ethic of care, because "an ethics of care must have the resources to receive, evaluate—even create—narrative elements" (Paulsen 2011, 29, 39-40; Donovan & Adams 2007; Davis 2017). Ecofeminist theory thus participates in the ongoing evaluation and creation of narrative forms as a means of activist praxis aimed at actualizing more just and sustainable relations between variously positioned Earthly actants. Ecofeminist thinkers have long found SF an invaluable medium for imagining new possibilities for ethical entanglements

(Haraway, 1989); the genre's estranging perspective enriches and thickens ecofeminist theorizing. Like SF, ecofeminism is not just about critique, but "*building* alternative ontologies, specifically via the use of the imaginative" (Haraway & Goodeve 2000, 120, original italics). Both modes are compelled "to encourage first contact, alien encounters and contact zones" in the ongoing quest for the articulation of "more worldly and survivable stories" (Greibowicz & Merrick 2013, 113-4).

Animal-attentive ecofeminism, a subfield that stakes out its normative commitments with its alternative appellation 'vegetarian ecofeminism' (Gaard 2011, 27), takes seriously the analysis of species as a hierarchically-dualistic category of difference-as-pejoration. Well aware that "in most human cultures both female human and nonhuman bodies have been historically used either to provide food, or to cook and serve it" (Torrijos 2013, 32), animal-attentive ecofeminists interrogate the ways in which the subordinately-positioned categories of women and animals reinforce one another in producing historically dominant configurations of white, male, human subjectivity (Adams 1990[2010]; Fraiman 2012). In these ways, animal studies and posthumanist theoretical orientations owe a debt to ecofeminism that is not always adequately acknowledged; ecofeminist activism and theory has been backgrounded within some posthumanist strands of animal studies (eg. Wolfe 2003) that "distinguish their project not only from animal advocacy but also from gender studies and other areas animated by specific political commitments" (Fraiman 2012, 92). My own commitment to remembering the groundwork laid by vegetarian ecofeminists in the animal studies field (Gaard, 2010, 3) has profoundly informed my approach to questions of subjectivities,

which I engage as configurations of agency enmeshed in a diverse network of intra-acting Earth others which may exceed the subject-form but nevertheless provoke agential response-abilities. Critical animal studies approaches (as I outline below) tend to foreground other animals as oppressed subjects; some strains of CAS scholarship express little inclination to ruminate on ethical entanglements and response-abilities towards non-animal nonhumans, such as plants, fungi, bacteria or cells (Weisberg, 2014; for a counter-example of CAS engaging with vegetal ethics, see Houle 2012). I find this exclusionary, boundary-enacting foreclosure incompatible with an ecofeminist stance of intentional recognition of the agency of the more-than-human (and more-than-animal) world (Plumwood, 2002). Therefore, while my intersectional analysis foregrounds other animals, it does so in ways congruent with the open, entangled, ecologically embodied ethics of ecofeminist theory (Gaard 2010, 2011, 2016).

Critical Animal Studies

The radical breakdown of the human/animal distinction in scholarly scientific discourse is one of the “defining characteristics” of our age (Calarco 2017, 6; Pick 2011, 1); certainly by the late twentieth century, as Haraway points out, “[t]he boundary between human and animal [has been] thoroughly breached” (1991, 151; Noske, 1997). The 2012 “Cambridge Declaration on Consciousness in Non-Human Animals,” in which an international group of prominent scientists declared the evidence for conscious awareness in many other species incontrovertible, further demonstrates the pressing need to incorporate updated ontologies of human-animal (in)distinction in critical theory

and beyond; critical animal studies (CAS) is just such an endeavour.⁷ An interdisciplinary field spanning and questioning the humanities and the social and natural sciences (Taylor & Twine, 2014, 2), CAS unapologetically focuses on the circumstances and treatment of other animals; in Pedersen and Stanescu's terms, CAS is concerned not only with the 'question of the animal' but also with the condition of real animals, seeking "to liberate the animal from the circumstances that seek to enslave her" (Pedersen & Stanescu, 2012, xi; 2014, 262). CAS knowledge production "must be accountable to its nonhuman animal subjects by striving to contribute to the improvement of the situation of animals and by considering the broader political consequences of our research" (Pedersen & Stanescu 2014, 264), a task that necessitates "conceptual renewal, methodological innovation, [and] theory that that is relevant and engaged" (Taylor & Twine 2014, 2). Literary approaches to CAS explore material-discursive engagements with animal others by approaching literary animals as resistant participants in the production of social meaning rather than merely passive screens upon which human exigencies are projected (MchHugh 2011; Armstrong 2008). SF, as a literature of alterity centrally concerned with imagining otherwise and one with a long history of more-than-human encounters, has much in common with and much to offer critical literary animal studies (Vint, 2009).

⁷ The Cambridge Declaration can be accessed online: <http://fcmconference.org/img/CambridgeDeclarationOnConsciousness.pdf>. While she hails the Declaration as "an impressive proclamation," Midgley (2014) goes on to ask: "How can it possibly be necessary to say this today? The admission certainly comes better late than never, but why has it taken scientists three hundred years to get rid of an error that a little attention to their own domestic animals could quickly have cured? As we are beginning to realize, the explanation of this slowness does not lie in any scientific counter-evidence but in a background myth, a set of assumptions" regarding human exceptionalism (94)

Like the ecofeminism that precedes and informs it, CAS is a resolutely intersectional body of thought committed to grappling with interlocking oppressions within and beyond the human sphere (Nocella et al 2013, xx). Animal studies, critical and otherwise, is not monolithic; various scholars working within the field take various approaches to questions of agency and ethics beyond the human. Wolfe (2003, 2010), for example, aligns his own continentally-inflected version of animal studies with posthumanism and contrasts this approach to the activist focus of more explicitly “critical” animal theory preoccupied with including (some) animals within dominant schemata of subjectivity. In Wolfe’s estimation, CAS’s strategy of attempting to shift the boundaries of subjectivity while capitulating to extant configurations of the subject render the field mere “humanist posthumanism,” as opposed to Wolfe’s own more sophisticated “posthumanist posthumanism” which problematizes the very form of the knowing subject itself (2010, 125). As I have stressed from the outset, my own position rejects such a bifurcation of critical engagements with subjectivity into extensionist and reconstructive registers; I follow Braidotti (2017) and Pedersen (2011) in arguing for critical urgency of both expanding and reconfiguring subjectivity in anti-anthropocentric and anti-hierarchical ways. While it is important to clarify CAS’s normative commitment to animal flourishing and to re-member the groundwork laid by vegetarian ecofeminists in the field (Gaard, 2010, 3), I recognize that “transformative potential regarding animal issues can be found in various approaches to animal studies and even in discourses that are not explicitly radical” (Calarco 2017, 2), including Wolfe’s own work (2003, 2013), which draws upon Derrida (1991a, 1991b), Deleuze and Guattari (1980), Foucault (1976) and Haraway (2008) to articulate an ethics of openness and indeterminacy with significant overlap to

ecofeminist and material feminist ethics of entanglement and ecological embodiment (Fraiman, 2012; Gaard, 2011, 2010). I do not wish to belabour the distinction between critical, mainstream and ecofeminist approaches to animal studies, instead following Calarco (2017, 2) in suggesting that “the interdisciplinary and intersectional nature of much of the work done in critical animal studies” necessitates engagement “with a wide array of traditions, texts and strategies that go well beyond the particular theoretical traditions that are sometimes thought exclusively the undergird the field” (eg. Best et al 2007). Ultimately, I understand CAS as a diverse body of thought that at its most fundamental level seeks to dismantle the material-discursive apparatuses limiting animal potentiality in order to create other ways of life conducive to multi-species flourishing—aims wholly compatible with both ecofeminist and new materialist theories’ normative commitments (Calarco 2017, 5; Gaard 2010, 2011, 2016).

Material Ecocriticism

Another field heavily informed by ecofeminism, ecocriticism is an affective and analytic strategy of reading (Huggan & Tiffin 2010) fundamentally concerned with a given text’s orientation to constructions of “Nature” and the natural (Gaard 2004). While some strands of ecocritical theory are notoriously hostile to feminist theory (see Garrard 2004), I follow Estok (2001) in arguing that ecocriticism that fails to consider how sex/gender is implicated in the discursive construction and domination of the more-than-human world has failed in its intersectional mandate and “is quite simply not ecocriticism” (228). Queer ecocriticism continues this project of attending to the intersectionality of configurations of sex and nature by illuminating and challenging the

heteronormative biases that have long underpinned influential discourses of ecology, ethology and environmental politics (Mortimer-Sandilands & Erikson 2010, 5). Attentive to the dialogic interplay between text and context, (queer, feminist) ecocriticism examines the linguistic permutations involved in the discursive constitution of nature (Opperman 2006, 117) while simultaneously taking seriously the constraints and ethical response-abilities imposed by the real material environment (Heise 2006, 512). Material ecocriticism, the strand of ecocritical discourse I find most compelling and generative for the purposes of this dissertation, combines the insights of 'new' materialism⁸ with 'traditional' ecocriticism's environmental activism, interweaving postmodern and ecological voices to approach matter not only in texts, but as text, "as a site of narrativity ... a corporeal palimpsest in which stories are inscribed" (Iovino 2012, 451). Material ecocriticism draws upon Haraway's "naturecultures" (2008) and Barad's "agential realism" (2003; 2007), concepts that stress that nature and culture, matter and discourse are co-constituting, interdependent phenomena, not separate pre-existing realms. Matter is not a passive substrate that is inscribed with stories, but a medium for the exchange of stories that itself acts or does work. The basic premises of material ecocriticism, according to Opperman and Iovino, are that of

a distributive vision of agency, the emergent nature of the world's phenomena, the awareness that we inhabit a dimension crisscrossed by vibrant forces that hybridize human and nonhuman matters and finally the persuasion that matter and meaning constitute the fabric of our storied world. (2014, 5)

⁸ See Cudworth and Hobden (2015) and Parikka (interview with Deiter, 2012) for a succinct historicization of the various threads of philosophical thought that contribute to what has lately emerged as the supposedly 'new' materialism.

Material ecocriticism emphasizes the narrative dimension of matter, paying close attention to “configurations of meanings and discourses that we can interpret as stories” (7). What material ecocriticism stresses in “say[ing] that such articulations are ‘storied’ [...] is the fact that matter’s dynamism is “sedimented” in a temporal dimension and can be known accordingly” (Iovino 2014, 75), telling “stories of coexistence, interdependence, adaptation and hybridization, extinctions and survivals” (Iovino & Opperman, 2014, 7). Matter does not speak only to the human interpreter; as eco-semioticians emphasize, all things and beings “have the ability to communicate something of themselves to other beings,” catalyzing a sensibility that finds a dynamic and agential world replete with meanings and interpretations (Abrams 2010, 172; Wheeler 2017). As Iovino and Opperman argue, “framing this interplay in a narrative dimension is essential in the economy of ecological discourse” (2014, 8), reinforcing Plumwood’s argument for the pressing need to adopt a stance of openness to the intentionality and mindedness of the more-than-human world (2002, 182). Through the practice of ‘reading,’ material ecocritics “intra-actively” participate in the world’s “differential becoming” or “embodied understanding” (Barad 2007; Iovino & Opperman 2014, 4). “Intra-action,” a neologism coined by Barad, complicates “interaction’s” presumption of the prior existence of independent entities, emphasizing instead that phenomena emerge and become determinate only through the process of relating; bodies are meaning-generating “material semiotic” actants the boundaries of which “materialize in social interactions” (Haraway 1988, 595; Barad 2003, 815; 2007, 429). The interpreter and the interpreted emerge together in the intra-active encounter of “doing” material ecocriticism, in the process “bringing forth the world in its specificity,

including ourselves” (Barad 2007, 353, in Iovino 2014, 83-4). SF and material ecocriticism share crucial commitments, including the commitment to reading differently, to developing reading protocols that invite the construction of “different worlds and possibilities from previously fixed words, metaphors and concepts” (Greibowicz & Merrick 2013, 128; Delany, 1977, 78) in an ongoing process of critical and creative (re)worlding.

Research Questions and Chapter Overviews

Deploying the insights of ecofeminism, critical animal studies and material ecocriticism in intra-action with SF strategies of storying within a framework of agential entanglement attentive to differential modes of multispecies worlding, my analysis foregrounds the following questions:

1. How does the text approach human relations with the nonhuman world, including other animals/nature? Is the ethical framework universalist or contextual, individualist or relational?
2. How does the text construct ethico-political subjectivity—who can be a subject, at which times, how and why? How do dualisms like human-animal, subject-object and “food”/“not food” factor into this subjectification?
3. Who and what has the capacity to act? How is agency construed?
4. How does the text stand up to intersectional critique? I focus primarily on species, sex and gender, but class, race and disability are also crucial factors—how are these axes of oppression entangled in the narrative? What are the shortcomings and gaps?

Where are the blindspots and what do they reveal about the text's understanding of the relation between animals/animality and intra-human forms of oppression?

I intend each chapter to complicate the preceding, becoming successively more molecular with each section. Chapter two's human cattle dystopias decry the exclusivity of moral and political subjectivity as solely the province of (some) humans by subjecting humans to systems of meat production; chapter three engages the alterity of the alien to complicate subject-object dualism in food discourses; chapter four deconstructs the subject through the semi-living agency of in vitro meat; and chapter five employs SF narratives of me(a)tamorphosis to articulate the transcorporeality of subjectivity and the agency of the eaten. This strategy of cascading complexification does not suggest the primacy of molecular over molar, agency over subjectivity, or 'new' materialism over vegetarian ecofeminism. Rather, in deploying a performative posthumanist method to diffract the riches of material ecocriticism through the theoretical grating of ecofeminism and animal studies, then subsequently re-diffracting the resulting interference patterns through the narrative scaffolding of science fiction, I aim to both observe and respond to the always-already ethically-consequential patterns of difference that emerge from such agential entanglements. In doing so, I suggest that the material turn's exuberant insistence on the co-constitutive entanglements of living forms is complementary, not contradictory, to CAS's mandate to dismantle the material-discursive apparatuses of domination that incarcerate and instrumentalize myriad billions of animals (human and otherwise) in the name of anthropocentric sovereignty (Wadiwel 2015). In order to effectively nourish an entangled ethics of multispecies

flourishing, critical theory simply cannot afford to neglect “the manifest and extraordinary forms of violence that institutionally rearticulate the differentiation between human and animal” (Wadiwel 2015, 26). In differential and uneven ways, extant onto-epistemologies of hierarchical dualism and anthropocentric rationalism materialize global concatenations of capital and violence that entrap, (re)produce and annihilate other animals in historically unprecedented scales and intensities. By doing difference differently, an anti-anthropocentric performative posthumanist methodology is well-equipped to discern—and dismantle—these agential boundary-making practices that materialize subjectivity via a process of radical exclusion, clearing a space to enact an ethico-onto-epistemology of response-ability that is open, flexible, participatory, contingent and pluralistic, grounded in humble and careful attention to specific differences that matter.

The second chapter, ‘Human(e) meat, dualism and the human cattle dystopia,’ considers SF’s predilection for anthropophagic narratives within an explicitly ecofeminist/CAS frame that foregrounds ethical concerns regarding the treatment of other animals within food production regimes. Engaging biopolitical theory to embed discourses of subject-formation within material relations of animal capital, I argue that the hierarchical dualism of subject/object buttresses the production of the human/animal species binary and permits the ‘non-criminal putting to death’ of those outside the agreed-upon scope of subjectivity. By representing human bodies as edible flesh in much the same manner as nonhuman bodies are considered consumable within dominant discourses, narrative SF is able to problematize the relegation of other

animals to the position of non-subjects outside the realm of moral concern (Vints 2009, 26), a strategy only possibly within a conception of the human as both radically distinct from and dangerously close to, other animals. The bulk of the chapter analyzes two millennial SF texts that bring nonhuman meat production and consumption explicitly to the fore: Joseph DeLacey's body-horror book *Meat* (2008) and Don LePan's heavily footnoted thought-experiment *Animals* (2009). Both of these novels provoke critical consideration of contemporary Western cultures of carnism through subjecting human characters to the privations of nonhuman animal farming, presenting near future societies wherein the extinction of large nonhuman mammals has resulted in the designation of certain groups of humans as "animal," and thus consumable as dead flesh. While interrogating the human exclusivity of dominant forms of political and moral subjectivity is a vital project, human cattle stories do little to problematize the underlying structure of dualisms that make such exclusions possible. In fact, both novels reinscribe dualistic hierarchies of reason/emotion and male/female in differential but problematic ways. Their shared villainization of mothers as overly emotional, bloodthirsty harridans hellbent on maintaining the carno-cannibal status quo is particularly egregious—this, of course, despite the fact that women constitute the majority of the animal advocacy movement's activists (Gaarder 2011). Similarly, their insistence on similitude between humans and other animals as the yardstick of ethical relevancy both reinscribes anthroponormative standards of subjectivity and fails to challenge the underlying division of life into subjects and objects that makes certain lives killable in the first place.

The third chapter, 'Kin and carrion, appetite, ethics and alien encounters,' directly tackles the problematics of subject/object dualism that loom large but unexamined over the previous chapter's insistence that other animals, like humans, deserve membership in the former category. Diffractively reading two millennial SF series—Karen Traviss' *Wess'har Wars* hexology and Peadar O'Guilín's *Bone World* trilogy—through a Plumwoodian critical ecofeminist lens that takes the ontological edibility of corporeal bodies as a given, I interrogate subject-object dualism's assumption of similitude rather than difference as the morally salient characteristic qua excellence and the related insistence that only objects and never subjects may ever be available for use.

In Traviss's sprawling space opera, a militantly vegan alien superpower sets their sight on Earth, promising to forcibly convert the entire planet to sustainable vegan subsistence strategies in order to maximize the flourishing of all earthly beings, human and otherwise. I argue that the philosophically literate narrative both problematizes and partakes in the denial of difference so endemic to modern ecosalvational discourses like deep ecology, downplaying the role of intra-human hierarchy and insisting that all knowers are fundamentally the same. In O'Guilín's young adult series, by contrast, hard-and-fast divisions between kin and food are obliterated on a planet where edible plants are banned and various alien species—humans included—must hunt and trade to procure the flesh needed for survival; the trilogy insists upon a relational ethics arising from the encounter with alterity, rather than an ethics of calculation based on perceived similarity to established moral agents. Both Traviss and O'Guilín's narratives identify and problematize the dichotomy between between 'respect' and 'use' that

follows from subject-object dualism's insistence that only objects and never subjects are available for use. Since relations of use are ecologically inevitable, this respect-use dualism has the effect of de-subjectifying any entities (animal or otherwise) that *are* used by humans for food, ultimately sanctioning human practices of unfettered domination and instrumentalization towards any creatures unlucky enough to find themselves relegated to the far side of the subject-object divide (Plumwood 1994; 2002).

'Disembodied meat, storying semi-living subjectivities,' the fourth chapter of the dissertation, engages SF representations of in vitro meat (IVM) to challenge and complicate dominant configurations of subjectivity. A discourse saturated in the language of salvation and sacrifice, *in vitro* meat—ostensibly procured without killing—complicates what Derrida and Adams have identified as the carnophallogocentric disposition of the modern Western subject, in which 'real' meat is a product of slaughter and properly human subjectivity emerges through this metonymic ingestion of animal carnage. Is meat 'real' without the sacrifice of animal life, or might cell death 'count' towards this sacrifice? How might a material ecocritical understanding of agency as decentred and multiform—with intentionality being discernible even at a cellular level (Fitch 2008)—complicate the idea of in vitro meat as an ethical "magic bullet" or technological fix for the ravages of modern animal farming (Stephens 2013)? Even more radically, how might semi-living cellular assemblages like IVM deconstruct binaries of subject/object and gesture towards a profound ontological indistinction between vitality and inertness?

Chapter four attempts to think through these questions in relation to three divergent SF texts. The *In Vitro Meat Cookbook* (van Mensvoort & Grievink 2014), a “speculative cookbook”/art project published by a Dutch art collective, argues for the technology’s potential to “liberate” meat from its corporeal form, presenting a glowing vision of future carnism in which animal suffering is eliminated and culinary creativity soars to heretofore impossible heights. By contrast, the IVM ‘meat tubers’ of Margaret Atwood’s *Oryx and Crake* (2003) represent the debasement of culinary culture and the obscenity of biotechnological manipulation of life, with the novel’s abject and insensate Chickienobs functioning as a stand in for corporate greed run amok. Frederick Pohl and Cyril Kornbluth’s *The Space Merchants* (1953), however, refuses to foreclose the agency of its own meat-producing organism ‘Chicken Little,’ gesturing towards what McHugh has articulated as the “potentials for coordinating mutually sustainable cooperation with semi-living agency forms” (2010, 197) and cautioning against “naively retrofitting such complex entities into the terms of human subjects and nonhuman objects (the familiar foundations of discourse)” (McHugh 2011, 183).

Chapter five, ‘Me(a)tamorphoses, indigestion, infection and symbiogenesis,’ explores the truism that it is impossible to eat and remain unchanged by bringing the evolutionary theory of symbiogenesis and the tools of ecofeminist literary criticism and material ecocriticism into dialogue with two disparate SF narratives of becoming-meat. Symbiogenesis (Margulis 1967) posits ancient mergers between distinct bacterial entities as the origin of multi-cellular life, not only undermining heterocentric notions of

reproduction (Griffith 2015) but striking at the very heart of neo-Darwinian biological orthodoxy (Hird 2009, 65). Clifford D. Simak's short story 'Drop Dead' (1956) deploys symbiogenesis to critique then-dominant neo-Darwinist theories of biological and social evolution by describing an expedition of intrepid bioprospectors who encounter what is apparently 'the perfect food' in the form of an alien 'critter' composed of various different kinds of meat. The neo-Darwinist scientist-economists' discovery that these "critters" are chimeras of ancient bacterial symbionts evokes a kind of existential despair that can only be mitigated by the violent reassertion of humanity's rightful place at the top of the food chain—a strategy that backfires when the unruly agential assemblage of bacteria and critters bite back and transform the human scientists into meat themselves. Octavia Butler's *Xenogenesis* trilogy (1987-9) more proactively contests this fear of symbiosis and the narratives of human exceptionalism and organismal atomism that inform and enable it. The series recounts the encounter between humans and an alien species of consummate symbiotes whose evolutionary trajectory is predicated upon the merger and acquisition of new 'partner' species. Butler's Oankali aliens nonviolently but less-than-consensually consume human tissue in a project of interspecies miscegenation in which both species are irrevocably changed.

Both Butler and Simak centrally engage themes of symbiogenesis and subjectivity: for Simak, the notion of subjectivity as an emergent multispecies assemblage is horrific and debasing, dissolving the outline of the subject and reducing the human to the abject status of 'meat.' Butler's more ambivalent response to the symbiogenic subject makes clear that "the perfection of the fully defended, 'victorious' self is a chilling

fantasy” (Haraway 1991, 224) and explores the pleasures and possibilities of deconstructing boundaries between subjects (Vint 2007, 66). However, Butler’s narrative refuses to either efface the subject as an ethico-political entity or romanticize symbiogenesis as a synonym for the good, concretizing instead Haraway’s argument that symbiogenesis and subjectivities alike are about “becoming with each other in response-ability” (Haraway 2016, 145).

The concluding chapter of the dissertation reiterates my call to both include animals in ethical-political notions of the subject and reconfigure subjectivity as an emergent property of agential material creativity (Glenny Boggs 2012, 3). Rejecting subject-object dualism as an unlivable ontoepistemological paradigm while affirming the strategic valence of the subject-form as a point of intervention against the sociohistorically specific abuses of the animal industrial complex (Noske 1989), I return to the human cattle dystopias of chapter two to think through Haraway and Plumwood’s perceptive admonitions that no consumption practice can pretend innocence of killing or transcendence of ecological embodiment. I argue that DeLacey’s *Meat* epitomizes Haraway and Plumwood’s overlapping critique of purity-driven, somatophobic and anti-ecological food discourses, including ones that install meat-avoidance as a moral doxa. However, this is but one of many possible configurations of vegan subjectivity, as LePan’s *Animals* demonstrates. The novel relentlessly historicizes the contexts in which industrial meat-eating operates, deploying a bifurcated narrative structure in respectively emotional and rationalist registers to advocate a form of contextual veganism while refusing to fully condemn or condone any dietary praxis. Following a

plethora of CAS and ecofeminist theorists, I approach veganism as an always-insufficient but nevertheless transformative everyday ethics of anti-anthropocentric attentiveness that attempts to minimize harm within presently capitalistic and consumerist modes and means of production and consumption (Quinn & Westwood 2018; Twine 2013; Giraud 2013a, 2013b; Pedersen 2011; Struthers 2018; Pick 2012; Kheel 2009; Adams, forthcoming; Harper 2010). Intersectional veganism has the potential to unsettle the oft-unexamined legitimacy of social and cultural structures upon which meat-eating rests, in the process challenging the validity of the sociohistorically contingent norm of the carnophallogocentric subject and suggesting alternative configurations of multispecies subjectivities as relational, contingent, insufficient, ongoing, open-ended and inclusive.

Conclusion: Narrative and world-making

Scholarship is never disengaged: “we are required to make a stand for some possible worlds and not others, we are required to begin to take responsibility for the ways in which we help to tie and retie our knotted multispecies worlds” (van Dooren 2014, 60-61; Barad 2007, 353-96). In these closing remarks, I want to return to the narrative form as a potent medium for imagining other ways to retie the knots of multispecies encounters and bring forth other possible worlds. Narratives of human subjectivity have a particular resonance with stories about meat; as Slusser points out, “it is common to tell the history of mankind [sic] in terms of food and eating” (1996, 2). The teleological ‘progression’ from foliage-munching ape, to savage-and-virile ‘Man the Hunter,’ to civilized and fully human ‘Man the Agriculturalist’ is foundational to the twentieth century

historical-anthropological imagination (Slusser 1996, 2; see also Haraway 1989; Noske 1989)—just one example of the now-commonplace assertion that “our subjectivities are shaped by the stories we tell about ourselves” (Gomel 2012, 178). Alternatives to hegemonic subjectivities likewise emerge and proliferate through narrative form: “One gives up nothing, except the illusion of epistemological transcendence, by attending closely to stories” declares Haraway (1997, 64). For Haraway, stories of all kinds—explicitly fictional or not—are world-building and deserving of serious scholarly attention. DeWaal concurs, insisting that

narrative has been an integral part of the structures and methods through which ethologists gain credit for breaking up the human monopoly on culture by the end of the twentieth century; in other words, [...] story becomes a means of negotiating alternatives to nature/culture, animal/human and related hierarchic dualisms in thought itself.⁹ (in McHugh 2010, 214)

McHugh (2011) contends that stories do much more than “represent selves at the expense of others” (217)—ethical ways of living with and learning from other animals can “proceed from creative engagements with narrative forms” (217). As Vint argues, narrative “representations matter to subject formation and to efforts to connect with and change the cultural politics of the material world” (2009, 24); echoing Haraway’s declaration on the importance of stories to a critical and situated epistemology, McHugh argues that “the trick... is not to escape stories so much as to reckon with the ways in

⁹ Building upon developments in bio-, geo- and eco-semiotics (Winfred, 1998; Scollon and Scollon, 2003), several authors have even framed the Anthropocene as a kind of nonhuman narrative, activist economist Naomi Klein, for instance, discerns in Anthropocene ecological disruptions “a powerful message – spoken in the language of fires, floods, droughts and extinctions” (Klein 2014, 25) , while literary scholar and ethicist Serenella Iovino likewise finds methodological valence in approaching matter “as a site of narrativity” (Iovino 2012, 451)

which life continues only ever within them” (2011, 218). Perhaps King (2003) puts it best: “The truth about stories is that that’s all we are” (7,2).^{10 11} Those of us concerned with articulating an ecologically grounded ethics of transcorporeal interconnection, responsive attentiveness and mutual care (see Alaimo 2010; Fawcett 2000; Plumwood 2002; Haraway 2008a) cannot afford to ignore literary narratives.

Inescapable, world-making and potentially world-changing technologies of communication, narrative is not merely a useful supplement to ethics, but is instead “as vital and important to the discipline as moral theory itself” (Chambers 2001, 40). Stories make local, specific, contingent, concrete; they de-abstract the objects and subjects of knowledge, encourage empathy and offer possibilities for new narratives, new ways of being in and becoming with the world (King 2003; McHugh 2010; Fawcett 2000; McKenzie, Russell, Fawcett and Timmerman, 2010). As de Laurentis argues, “the very work of narrativity is also the engagement of the subject in certain positionalities of meaning and desire (1984, 106); put another way, “[s]tories make certain relationships possible, probable and ‘real.’ They actively make knowledge in our bodies and out there in the world, tangible” (Fawcett 2000, 144). We need “to stop telling ourselves the same old anthropocentric bedtime stories” (Shaviro in Barad 2003, 801) and start enacting

¹⁰ I am not arguing for the primacy of discourse over matter, word over world—instead, following Barad (2007), Opperman and Iovino (2014) and Iovino (2012), I understand discourse and materiality to be intra-acting phenomena, not discrete domains.

¹¹ Although Indigenous oral storytelling practices are outside the scope of this dissertation, which is concerned with Anglophone print SF, I acknowledge the crucial role stories play in the enactment of more-than-human subjectivities in oral Indigenous cultures (Robinson, 2013; 2014) and take to heart King’s point that not only oral cultures but literate ones as well negotiate ethics through narrative (2003).

new narratives that “challenge the notion that humans are in the story all by themselves” (Fawcett 2000, 145).

The stories this dissertation engages are born of the anthropocene, a time in human history when the ecocidal legacy of Western capitalism can no longer be ignored (Weisberg 2009). No longer does humanity stand poised before an infinite universe of worlds and space to explore and colonize, manifest destiny writ large across the stars; late twentieth and early twenty-first century SF is “shadowed by the impending threat of even more animal extinctions and perhaps the collapse of our entire ecosystem” (Vint 2009, 16). The cultural discourse turns inwards towards lifeboat Earth: “The dreams that could be nurtured at the time of the Holocene,” Latour cautions, “cannot last in the time of the Anthropocene. We might say of those old dreams of space travel not, “Oh, that is so twentieth century,” but rather “Oh, that is so Holocene!” (2015a, 146). Rather than transcending or detaching from earthly connections, the discourse of the anthropocene emphasizes the necessity of fostering them, sidestepping themes of mastery or retreat and foregrounding concerns of attachment, dependency and responsibility (Dibley 2012a). The subject known as ‘man,’ as Foucault insists, is “a face drawn in sand at the edge of the sea”; ‘he’ seems unlikely to survive the rising waters of our climate-changing era, at least not unchanged (1971, 387). SF—a genre at the vanguard of literary engagements with the anthropocene (Canavan 2016a)—is a trove of riches for imagining and articulating more liveable configurations of subjectivity at once “materialist and relational, ‘naturecultural’ and self-organizing” (Braidotti 2013, 52). The stories examined here codify, complicate and subvert the taken-for-granted hierarchies

that determine who gets to be the eater and who (or what) is relegated to the status of the eaten; they play with dualisms of subject and object and grope towards alternative ways to understand the heterogeneous field of more-than-human agencies and assemblages in which human life is embedded and wholly dependent. Through these and other stories, perhaps we might be able to imagine and even enact alternative configurations of subjectivity more conducive to the crucial project of encouraging relations of sustainable multispecies flourishing for humans and Earth others.

2. Human(e) meat: Dualism and the Human Cattle

Dystopia

The figure of the cannibal looms large in Western discourses of the human subject (Sanborn 2001, 193). A “disturbing fiction of otherness” (Kilgour 1990, viii) sprung forth from the fevered imagination of Europe at the dawn of the age of modern exploration (Pollock 2010, 9) the figure of the cannibal has long been deployed within colonial regimes to delineate not only civilized from savage, but also haves from have-nots and humans from other animals. Postcolonial reevaluations of cannibal discourse as displacing and legitimizing the cultural cannibalism of colonialism suggest that the figure of the cannibal continues to play a crucial role in Western negotiations of subjectivity, “both construct[ing] and consum[ing] the very possibility of radical difference” (Kilgour 1990, viii; Guest 2001, 1; Sanborn 2001, 193; Pollock 2010, 10). Perhaps this is why SF, a literary mode known for interrogating human, posthuman and nonhuman subjectivities (Vint 2009, 11; Haraway 2008a, 272), has long had a taste for human flesh. Any comprehensive catalogue of anthropophagy¹² in SF is beyond the scope of

¹²The term ‘anthropophagy,’ literally ‘people eating,’ is broader than ‘cannibalism’ in that it does not specify that the eater of human flesh must also be human. The anthropological literature generally favours the term over the more loaded ‘cannibalism’; Pollock (2010) argues that “we must be attentive to the difference between ‘anthropophagy’ and ‘cannibalism’ and the conditions of possibility attached to each” (10). Historical and anthropological evidence for anthropophagic practices across human history is undeniable—this includes practices of ‘transumption,’ the ritual consumption of dead kin (Whitfield, Pako, Collinge & Alpers 2008). ‘Cannibalism,’ however, is a term so fraught and loaded that it is best approached as product of the Western gaze and “the ‘cannibal’ proper belongs to the imagination of Europe entering the age of modern exploration” (Pollock 2010, 9). The term itself dates from the mid 16th appellation “Carib,” the name given by Spanish invaders to the Karina, an indigenous West Indian culture inhabiting the islands that would eventually be called St. Vincent, Dominica, Guadeloupe and Trinidad (Adonis, in Schutt 2017: 114). The bastardization of ‘Carib’ to ‘Canib’ and subsequently ‘cannibal’ may also reflect a colonial strategy of animalization: the invading Spanish told stories describing the locals as having canine faces (Rawson 1999).

this (or any) chapter (Alkon 1996, 143).¹³ Instead, I chart a genealogy of the figure of the animal in cannibal SF, offering critical ecofeminist and animal studies readings of several texts that deploy cannibalism to evoke not (only) conflicting human subjectivities, but the subjectivity of the devoured nonhuman as well. Reading these SF narratives diffractively through ecofeminist and CAS theoretical frameworks, I argue that their shared ‘reduction’ of the human to the status of ‘meat’ works to trouble and destabilize the hyperseparated dualistic ontology of human over animal, highlighting how cannibalism and carnism “are bound together through economic categories of production and consumption” (Pollock 2010, 9), intra-actively enacted rather than preexisting as ontologically determined categories. This contextualization of human-animal dualism as a emergent phenomenon of material-discursive apparatuses of power subsequently destabilizes and delegitimizes the carnist, human supremacist and ecocidal cultural regime of Western (post-)modernity.¹⁴ While my analysis acknowledges the crucial materializing effects of material-discursive apparatuses of domination and dualism, notably industrial meat production, I also seek to illustrate the shortcomings of

¹³ Donald Kingsbury’s acclaimed novel *Courtship Rite* (1982) is worth a mention here because it is a quite unambiguously positive (and similarly rare) science fictional representation of cannibalism. The novel posits a distant planet, ‘Geta,’ where most of the native flora and fauna are poisonous to human metabolism. Human colonists survive by eating “eight sacred plants” imported from distant Earth and augment their diet with human flesh, which is procured from those low in “kalothi,” or survival fitness. Notable for its didactic libertarianism and social Darwinist themes (Clute, 1982), the novel features positive depictions not only of cannibalism, but also a eugenic caste system and child rape (Kingsbury, 1982). Like Wells’ *The Time Machine*, *Courtship Rite* frames cannibalism within an evolutionary discourse of fitness and degeneracy; whereas Well’s cannibals spoke to contemporary fears of a cunning yet degraded proletariat overthrowing the weak bourgeoisie, Kingsbury presents the consumption of the unfit as a sensible corrective to the liberal excess that threatens the vitality of the species (or ‘Race,’ to use Kingsbury’s loaded term). The cannibal planet Geta is a libertarian ‘meritocracy’ where the fittest thrive and those low in kalothi are quite rightly forced to make “their contribution to the Race” (Kingsbury, 1982, 77) through ritual suicide and consumption.

¹⁴ Here, I use the term “post-modernity” as Franklin (1999) uses it, to describe the period in the West from around the 1970s onward, after the breakdown of the postwar cultural consensus (57-61).

similitude-based, extensionist approaches to ethics that seek to broaden ethical subjectivity to encompass actants based on their perceived similarities to already agreed-upon human subjects. Dualisms tend to be left intact in such approaches; the line is simply redrawn, rather than questioning the expulsions enacted by the effects of drawing lines in the first place.

Colonial cannibalisms

Perhaps the earliest SF narrative to feature human meat, in *The Time Machine* (Wells 1894) the decadent descendants of the bourgeoisie are subject to “cannibalistic predation by the mutant descendants of the industrial working class who, through the struggle for existence, have proved themselves more fit” (Belasco 2006, 120). In a very literal sense the once-dominant Eloi have become the Morlocks’ cattle (Retzinger 2008, 382), perhaps articulating Victorian unease over the Darwinian assault on human-animal dualism and the subsequent implication that human practices of meat-eating might not be all that different from cannibalism (Lee 2010, 251). The novel concludes with the time traveller returning to turn of the century England and demanding a beefsteak to fortify him before he shares his incredible tale. Subsuming uncomfortable questions of animal subjectivity beneath *fin de siècle* anxieties of evolutionary and social degeneration, Wells positions the red meat-eating Western civilized male as the happy medium between the savage cannibal and “physically insipid” vegetarian—both highly racialized categories of deviance (Lee 2010, 254; Belasco 2006). *The Time Machine* draws upon a wealth of cultural narratives relating diet to a hierarchy of otherness; at the Chicago 1893 Columbian Exposition, for instance, visitors could

descend “the spiral of evolution” and encounter various tribes of alleged cannibals, “whose apparent deviancy reinforced the Anglo-American predilection for beefsteak as the ‘moderate’ civilized ideal between savage cannibalism and [the] vegetarian ‘coolie rations’ supposedly endured by ‘rice-eating Hindoos’ and other Asian peoples” (Belasco 2006, 158; Adams 2010[1990],54). Belasco (2006, 158) argues that these and other material-discursive apparatuses of colonial power consolidation function as “culinary cognitive maps” in which human subjectivities are produced and contested. Since the so-called ‘Age of Discovery’ (1492-1797) cannibalism had dominated these dietary topographies, representing the epitome of the uncivilized, racialized “other” (Hulme 1986, Huggan 2010, Belasco, 2006).¹⁵ Through consuming the flesh of other humans (or so the story went), cannibals proved themselves debased and brutish, well outside the accepted bounds of ‘civilized’ subjectivity and deserving of (at best) forcible conversion to civilized mores or (more commonly) complete annihilation.

Anthropological machinery, hierarchical dualisms

Although post-Colombian discourses of cannibalism tended to foreground racial difference rather than species difference, the figure of the animal lurks within any discourse of cannibalism, as *The Time Machine* demonstrates. Even in narratives ostensibly completely unconcerned with other animals, the taboo operates “by positing a difference between human and nonhuman, forbidding consumption of the former while permitting consumption of the latter” (Estok 2012, 3). While the term ostensibly endorses a binary opposition of animal and human, its insistence on the edible

¹⁵ The British were apparently so assured of their own civility that cases of domestic cannibalism “appeared as regrettable eccentricities rather than representative sins” (Ritvo 1997, 212)

fleshiness of the supposedly sacrosanct human subject simultaneously “create[s] the very proximity that it seeks to be done with” (ibid; Pollock 2010, 9). Cannibal tales shock and titillate because they ‘reduce’ the human subject to meat, to materiality, to animality (Lewis 1998, 155, in Estok 2012, 3). In the process, they remind us that this ‘reduction’ is as easy as the slice of a butcher’s knife. To dualistic configurations of ‘the human’ as radically separate from ‘the animal,’ such a shrinkage is an outrage; yet this slippage from human to animal is only possible because of our dangerous proximity to each other. Noting the persistent tendency in Western discourse to conceive of the human as suspended between the celestial and the bestial, Agamben calls the conflict between ‘man’ [sic] and his [sic] supposed “beast within” (Midgley’s term, 1979, 36) “the decisive political conflict” in our culture (Agamben 2004, 20). This human-animal conflict lies at the heart of Agamben’s ‘anthropological machine,’ a material-discursive apparatus at once sovereign and biopolitical that defines and reproduces the category ‘human.’ Agamben argues that this “ironic apparatus” bifurcates the creaturely world into the two broad camps of bios (what is proper to human life, i.e. the civic life of the citizen) and zōe (the supposedly bare, biological existence of all other animals). Gifted with divine reason but mired in mortal flesh, ‘man’

can be human only to the degree that he transcends and transforms the anthropophorous¹⁶ animal which supports him and only because, through the action of negation, he is capable of mastering and, eventually, destroying his own animality. (12)

¹⁶ Agamben’s uses the term ‘anthropophorus’ (human + bearer) to denote “animals who bear humans, in two senses: they help give birth to our idea of the human and they carry it like beasts of burden” (Armstrong, 2017, 2)

The properly human subject, Agamben argues, does not exist a priori, but is produced by through exclusion and disavowal, out of and over the substrate of the beast within (Agamben 2004, 37; Midgley 1979, 36). Echoing Linnaeus, who inserted the maxim “know thyself” in lieu of any description of human characteristics in his *Systema Naturae*, Agamben argues that the human is only human insofar as ‘he’ [sic] can recognize, partition and excise the animal within—‘man’ [sic] is thus the creature that “must recognize itself as human to be human” (26). In this way, the anthropological machine undergirds the logic of cannibalism, in which the human must be recognized as such in order for any transgression to have taken place: “membership in the human species is a prerequisite for the eater of human flesh to be considered a cannibal” (Kilgour 1990, 88). Through consumption, the cannibal animalizes what ‘civilized’ observers recognize as the human subject and is thus animalized in turn—cannibalism materializes the operation of the anthropological machine by marking in blood “the limit that humanity requires in order to know itself as itself” (Sanborn 2001, 194).

Agamben’s articulation of the most fully human of subjects as male is telling and speaks to the ubiquity of hierarchical dualisms within the Western imagination—even when that imagination aims to critique such apparatuses of subjectivity, as Agamben does.

Arguing that the current ecological crisis is largely the result of the pernicious tendency throughout the history of Western thought towards hierarchically-stacked dualisms, such as man/woman, culture/nature, mind/body (or mind/matter), reason/emotion and, of course, human/animal, Plumwood demonstrates that the leading term in these

hyperseparated binaries is constructed through the denial and backgrounding of their oppositional subordinate (1993). A dualism, according to Plumwood,

results from a certain kind of denied dependency on a subordinated other. This relationship of denied dependency determines a certain kind of logical structure, in which the denial and the relation of domination/subordination shape the identity of both the relata. (41)

Interlocking and intra-acting, these hierarchical dualisms form a web or network of mutually reinforcing value-dichotomies that consolidate and maintain the power of those aligned with privileged sides of the web of pairs (1993). These dualisms “are not just free-floating systems of ideas; they are closely associated with domination and accumulation and are their major cultural expressions and justifications” (1993, 42).

‘Human’ aligns with masculinity and reason on the upper side of this ‘Master Model’ of hierarchical dualism, while ‘animal’ is relegated to the underside of the coin along with femininity, emotion and/or the body (Plumwood 1993, 2002). Put another way,

Assertions of the superiority of ‘humanity’ simultaneously function as assertions of the superiority of masculinity and scientific rationality, thus betraying the degree to which the very category human is premised on the exclusion of both animals and women from fully attaining this status. (Vint 2010b, 27)

Because the dominant schemata of subjectivity that Agamben and Plumwood identify understands the category ‘human’ to overlap with, but not fully encompass, biological membership in the species *homo sapiens*, there is always the attendant risk that some ‘others’ (of whatever gender, race, or class) will fail to attain the status of bios and instead be relegated to the bare life of zöe (Agamben 2004, 29; Wolfe 2003). The logic

of hierarchical dualism creates a caesura between bodies that matter and bodies that do not (Butler 2004)—subjects whose lives fall within the sphere of moral concern and non-subjects expelled to the ‘outer darkness’ (Midgley 1983) of moral irrelevancy. Lives relegated to realm of zöe are thus backgrounded (Plumwood 1993), rendered “killable” (in Haraway’s words) and subject to a “non-criminal putting to death” (as Derrida puts it) because “their lives and deaths fall outside the scope of our ethical discourse” (Vint 2009, 20; Haraway 2008a; Derrida 1991a). The concept of cannibalism thus participates in this enduring logical structure of otherness and negation (Plumwood 1993, 2) by cleaving the human from the animal and forbidding the reduction of the former to the status of nutritive biological matter. In this way, even cannibal tales ostensibly unconcerned with the figure of the animal are predicated upon the violent disavowal of the very same.

Twentieth century cannibal SF: Tiptree and DeFord

The figure of the animal that haunts *The Time Machine* begins to rattle the chains more insistently in the cannibal science fiction of the twentieth century. James Tiptree Jr.’s ‘Morality Meat’ (Sheldon 1985), for example, hinges more or less explicitly “on the shock produced by the realization that humans are being treated as animals” (rather than the repudiation of cannibal subjectivity as irredeemably ‘savage’ or degenerate) (Vint 2010b, 35). The story posits a society where reproductive rights have been stripped back and abortion is outlawed. Overcrowded state-run adoption centres take in the unwanted babies that (primarily working-class Black and Brown) women have been forced to carry to term, but “the unthinking demand for blonde, blue-eyed babies” means

that the majority of these infants cannot be rehomed (Sheldon 1985, 221). Orphanages are overflowing, but animal protein has become scarce: “the droughts and grain diseases finished off most of the US’s meat production” years before the story begins (Sheldon 1985, 210). The solution to the glut of unwanted human infants and the concurrent shortage of animal flesh is, of course, to kill and butcher the unadoptables, transforming them into meat for wealthy (and primarily White) old boys’ clubs. Clearly riffing on satirist Jonathan Swift’s infamous infantophagy pamphlet ‘A Modest Proposal,’¹⁷ which also literalizes the metaphorical consumption of the poor by the rich (Alkon 1996, 148, Vint 2010b, 35), ‘Morality Meat’ highlights the violence of patriarchal systems that control the bodies of racialized women and children through its depiction of cannibals as “ageing oligarchs who consider it none of the public’s business what they choose to do or eat” (Sheldon 1985, 232). In doing so, the story overtly invokes the figure of the farmed and butchered nonhuman animal. “Frozen piglet carcasses,” concludes one unsuspecting (or willfully ignorant) character upon being confronted with a shelf stacked with butchered human infants; this “rack of cold slippery things,” he concludes, must surely be “[m]eat. Only meat” (Sheldon 1985, 211, 212, 231). In a world without baby pigs, certain kinds of baby humans fill the vacancy, rendered killable through a logic of dualism that constructs ‘human’ out of and above ‘animal.’ ‘Morality Meat,’ as Vint puts it, “draws our attention to the way in which the human-animal

17 Well over a hundred years before Wells put pen to paper, popular satirist Jonathan Swift had mined popular revulsion towards the savage anthropophage in his ‘A Modest Proposal,’ a tract facetiously suggesting that the British eat Irish babies as a solution to eighteenth century food shortages. Like colonial tales of faraway cannibal tribes, Swift’s A Modest Proposal (1729[1996]) uses cannibalism as shorthand for unconscionable barbarism; unlike these earlier travellers’ tales, however, Swift’s pamphlet strategically deploys the figure of the cannibal not to justify colonial expansion, but to protest it. The brutality of the colonizing English towards the subjugated Irish is damned by pushing this dehumanization to an extreme so appalling that it simply cannot be stomach.

boundary is implicated in exploitative hierarchies of class and race," and suggests that "a metaphysics of subjectivity based on exclusion of the animal [is] part of the problem" (Vint 2009, 36, 44).

"Unspeakable nonhuman flesh eaters!"

Miriam Allen deFord's infantophagy story is much more directly concerned with human consumption of other animals than Tiptree's. Published over twenty years before 'Morality Meat,' 'Season of the Babies' (1959) describes the widespread consumption of "weak" babies in great seasonal feasts on a remote planet colonized long ago by humans. Ambassadors from distant Earth come to this somewhat technologically stunted colony planet to assess its suitability for membership in the "Outer Galactic Federation" (129). These 'Earthian' (deFord's term) ambassadors are quickly established to be arrogant, moralizing and sexually conservative; they scorn the colonists lack of any marriage tradition ("what are you, promiscuous?") and sneer at their reproductive mores, which are organized into what the Earthians deride as a "rutting season" (132). They damn the local people's social-sexual traditions as bestial, "like our lower animals," thereby demonstrating that their insular prudishness emerges within a hierarchical and binary conception of humans and other animals (ibid.). Their hosts try to be gracious and explain to the newcomers what for them is "the normal and universal way of life" (133): namely, that in winter all the babies are born, reared in vast communal nurseries and then a select few are "Chosen" to live while the others "are

disposed of, naturally — under the best possible circumstances, I assure you” (134).¹⁸

The locals attempt to cater to their horrified guests’ “provincial” palates by serving them “delicate meat sliced in the kitchen and smothered in a complicated sauce, which quite spoiled the taste of the highly luxurious food for the natives” (137). This gesture of hospitality is thoroughly rebuked when the Earthians realize that they have been served and have eaten, the flesh of human babies. The locals attempt to explain:

When farmers have the remains of a crop left over, they plow it back into the ground to benefit the next crop. That is what we do—the Unchosen babies are part of the crop we turn back to those who made them...the babies are a part of us; they will go to make up next years babies too. (139)

The explanation falls on deaf ears, “Cannibals! savages!” cry the appalled and revolted Earth ambassadors (139). From the locals’ point of view, however, it is the eating of nonhuman flesh that is perverse and depraved:

Ragnar could hardly speak. “You actually mean,” he said painfully, “that you, human beings like ourselves, take into your bodies, to become part of you and your children’s substance, the flesh of vile, alien creatures? Our earliest ancestors, even before they became civilized, never fell so low as that!” (140)

Flipping the narrative of the savage cannibal by imagining a culture wherein eating other animals rather than other humans is considered depraved, DeFord draws attention to the “ultimate intimacy” of eating another creature (St Clair 1976, 1). The nutritive act is a

¹⁸ The Earthians react with horror, but to the natives, the Earthian practice of “do[ing] their Choosing before conception instead of after birth” (ie. birth control) is just as barbaric: “Every human being has a right to be born, to take its chances on being “chosen” for survival!” (139). Like Tiptree’s, deFord’s infantophagy story raises the issue of reproductive choice. While Tiptree’s is a cautionary tale of the social ills of forcing women to carry pregnancies to term, DeFord’s invokes abortion to demonstrate that the distant cannibal colonists are as shocked by our own practices and ideologies as we are theirs.

(profoundly unequal) “mutual hybridization of bodily matters” (Iovino 2014, 102), rendering our organic bodies “nothing but temporary coagulations in these flows” of energy and materials (DeLanda 2000, 104, in Iovino 2015, 104).¹⁹ I will explore the implications of this transcorporeality (Alaimo 2010) in more depth in chapter five; here, it suffices to point out that eating renders any body (human or otherwise) permeable. Through eating, the outline of the subject is always threatened with dissolution (Alaimo 2014, 187). While this of course applies to any digestible matter, not just that of animal origin, meat persists in retaining a symbolic currency that far outstrips its strictly nutritive value (Fiddes 1991). DeFord’s story articulates the border between human subjects and animal bodies as dangerously porous and speculates that a strong hierarchical dualism of human/animal might in fact mandate cannibalism rather than forbid it. To deFord’s colony of infantophages, the consumption of nonhuman animal matter is morally corrupt because it enfolds the inferior other into the very substance of the self in a debased, impure intimacy: humans who eat other animals are “unspeakable nonhuman flesh eaters!” (141). In this sense, deFord’s baby eating tale engages the figure of the animal quite explicitly. While Tiptree’s story uses meat to talk about sexism, racism, classism and reproductive rights, deFord’s uses meat not only to highlight the cultural contingency of savagery/civility, but also to talk about meat itself. The figure of the nonhuman that lurks, sometimes hidden, in any cannibal story begins to emerge in deFord’s tale, but only tentatively—human zoophagy is talked about in a broad, universal sense and the story does not focus on any particular culturally and historically situated instance of meat-eating other than that of its fictional planet of cannibals.

¹⁹ The German word for metabolism—Stoffwechegel—literally translates as “exchange of matter” (in Iovino 2014,102)

The latent figure of the animal comes centre stage in post-millennial human cattle stories *Meat* (D’Lacey 2008) and *Animals* (LePan 2009), novels that consciously participate in activist discourses to provoke critical consideration of contemporary Western cultures of carnism.²⁰ Very much of their time and place, these narratives emerge alongside a notable millennial intensification of cultural unease regarding industrial meat production (Parry 2009, 2010; Pilgrim 2013).²¹ *Animals* in particular lends itself readily to an analysis foregrounding real-world meat anxieties. The novel explicitly connects its fictive world to the one we currently inhabit,²² invoking various and conflicting activist discourses to problematize industrial meat production and human-animal dualism through the substitution of marginalized humans for farmed animals. The novel has received ample critical attention and has already been analyzed through the critical lenses of Derrida (Vint 2010b; Dunn 2015), Deleuze (Keen 2012) and disability studies (Shupe 2012). My own analysis foregrounds Plumwood’s work on hierarchical dualisms, particularly human/animal and reason/emotion (1997; 2002). I argue that the novel goes some way towards complicating the hyperseparated

²⁰ Michel Faber’s novel *Under the Skin* (2000) deserves a mention here; however, being concerned with aliens eating *homo sapiens* and having been amply covered by literary scholars already (Dillon, 2011; Vint 2015; Dunn, 2015; Drewett, 2016), I will omit the novel from further analysis.

²¹ The spiralling food scares of the last two decades of the twentieth century have prompted increasing popular awareness of the environmental and ethical problems associated with industrial animal agriculture, somewhat undermining the high esteem in which animal flesh had long been held (Fiddes, 1991; Parry, 2009, 2010). Counter-discourses consisting of carno-“gastro-philosophical treatises” (Bourette, 2008, 36) that present the transformation of animals into meat as humane and ‘natural’—at least in the best cases—likewise multiplied over the first two decades of the new millennium (Parry, 2010; Gutjhar, 2013).

²² For example, a character in the novel finds an “ancient” newspaper clipping from the days before the great extinctions (a real article published in the *Globe and Mail*, entitled “Do You Know How Your Meal Died?” [Wente, 2006]) discussing the willful ignorance involved in eating factory farmed meat (44).

dichotomy of reason/emotion that buttresses the species binary and permits (or necessitates) the ‘non-criminal putting to death’ of those outside the agreed-upon scope of subjectivity. However, *Animals*’ shifting, multiple narrative perspectives allow a good deal of ambivalence in this regard and a reading of the novel as selectively re-entrenching rather than dismantling the hierarchical dualism of reason/emotion is certainly plausible.

Animals and LePan’s Animals

Animals is set around the year 2070 (Vint 2010), by which time most of the domesticated nonhuman animals that Western society typically instrumentalizes – pigs, chickens, cows, dogs and cats – have become extinct (in large part due to pandemics caused by factory farming and anthropogenic environmental degradation) (LePan 2009, 58). The extinction of “meat” animals creates a supposed “protein deficit” that cannot satisfactorily be filled with vegetable proteins – the people want real meat and no substitute will do. Perhaps not so coincidentally, birth rates of humans with chromosomal and other developmental disorders have skyrocketed precisely as “farm” animal populations have dwindled.²³ In a ravaged world of crumbling capitalism and resource scarcity, the membership of certain marginalized groups in the human species is revoked and the unfortunate children are dubbed “mongrels” (an animal epithet evocative of the existing ableist and racist slur ‘mongoloid’). Spurred on by the clamorous cries of meat-hungry gourmands and facilitated by a meat industry eager to avoid extinction itself, “a mongrel-centred solution to the nutrition problem” is enacted

²³ The novel suggests that environmental pollution from unchecked industry has contributed to the increased rate of chromosomal abnormalities, i.e.. ‘mongrel’ births (65).

(LePan 2009, 66). Reconceptualized as nonhuman animals, disabled humans are subsequently subjected to the full range of techniques currently utilized by the animal-industrial complex: intensive confinement systems, selective breeding, physical mutilation and genetic manipulation to ensure bigger, faster-maturing bodies and increased profits through the sale of euphemistically renamed “yurn” (‘mongrel’ meat).²⁴ The bulk of the narrative is presented as a manuscript supposedly written by novelist and vegan activist Naomi Okun, who was a child when her wealthy family adopted young ‘mongrel’ Sam as a housepet. But Sam does not suffer from any developmental disability—he is simply an unlucky deaf child from the wrong side of the tracks. As Naomi and Sam grow closer, Naomi begins to question not just Sam’s erroneous ‘mongrel’ status, but the human/animal dualism that structures her society and justifies the violent exploitation of ‘mongrels’ and nonhuman animals alike. However, her mother Carrie is horrified by her daughter’s unhealthy fixation with the family ‘pet,’ and promptly carts the deaf boy off to a chattel farm, where he is branded, castrated, confined, fattened and eventually slaughtered. This main ‘manuscript’ is interspersed with lengthy footnotes ostensibly written by Broderick Clark, a meat-eating “mongrel welfare advocate” and Sam’s biological elder brother. Naomi and Broderick’s dual narratives are bookended by an introductory “editor’s note” to buttress the illusion of archival veracity and an “author’s afterword” in which LePan himself clarifies his own position on carnism and the meat industry.

²⁴ Enthusiastically describing the genetic alteration of ‘mongrels,’ Broderick writes, “Shorter lifecycles and harvest times; animals that could be perfectly bulked out in the weeks prior to harvesting; animals that could have removed from them the last vestiges of traits no longer needed in the species (most notably, speech and some of the other “higher” mental activities that a chattel had no need of)—all this could now be readily accomplished, through the wonders of genetic engineering’ (81).

As the brief outline above makes clear, *Animals* makes effective use of the frisson between Naomi's youthful and idealistic adherence to an abolitionist notion of 'rights',²⁵ and the older Broderick's more pragmatic endorsement of 'welfare,' in which meat production continues, but in a kindlier fashion. The novel presents Naomi as passionate and emotional in her exhortations that 'mongrels' (and other nonhuman animals besides) should not be violently instrumentalized.²⁶ Broderick, on the other hand, is cool and rational, pointing out that many 'mongrels' wouldn't even exist without the meat industry (having been bred for this specific purpose) and advocating a humane, organic and free-range system of 'mongrel' meat production. Naomi and Broderick's incommensurate views echo contemporary debates around meat production and animal ethics and speak to the tenacity of hierarchical dualisms in Western discourse, Broderick is aligned with masculine reason, Naomi with womanish pity. The fact that most readers would probably find their position closer to Naomi's, at least when it comes to human animals, complicates the conventional hierarchy—Broderick's welfarist advocacy of "responsible use" is problematized by its application to differently-abled humans. *Animals* thus encourages readers to reevaluate their ethical positioning

²⁵ I am scare quoting 'rights' in this context because a deontological notion of inalienable rights is not a prerequisite for rejecting any lethal instrumentalization of other animals. However, it is often referred to by this term, especially in the context of debates between 'welfarist' and 'abolitionist' positions within animal advocacy discourses.

²⁶ As Vint points out, even before she recognises that Sam is deaf, Naomi had come to accept him as a full subject, regardless of the categorical distinctions that matter to her parents and her culture. She acknowledges the reciprocity of their relationship, that when they cuddle' she thought of it as holding him but really he was holding her too and loving her too' (75) and concludes 'oh yes, mongrels could feel all right, Naomi knew that right as rain and there were thoughts inside them too, thousands of thoughts, of course there were' (77). (Vint 2010b, 41)

regarding the nonhumans they consume; LePan's authorial afterword, in which he articulates his own position on as closer to Broderick's than Naomi's, adds even more ambiguity, confounding any expectations that *Animals* might offer easy answers to the thorny ethical questions raised by the figure of the nonhuman.

If readers find themselves on abolitionist Naomi's side when it comes to farming humans, but welfarist Broderick's side when it comes to farming other animals, the reason for this may be 'speciesism': giving preferential moral treatment to the interests members of one's own species, over and above the interests of members other species. Animal ethicist Peter Singer (1975) argues that this is indefensible: the salient criteria for assessing moral worth is not species, but the various emotional, cognitive and physical capacities that enable a creature to experience suffering.²⁷ The theory of speciesism underpins Singer's powerful thought experiment, the "argument from marginal cases" (see Domrowski 1997), in which he argues that it is impossible to cleanly distinguish all humans from all other animals without simply falling back on species membership as a criteria. Any species-blind attempt to include all members of the human species within a sphere of moral concern must include many other animals as well; conversely, drawing a line that excludes all animals from moral relevance must

²⁷ Other philosophers have problematized this assessment of speciesism as *always* morally indefensible. Midgley (1983) argues that the concept has valence (as an intervention against the absolute moral dismissal of other animals, for example) but takes issue with the blanket condemnation of all forms of speciesism, as awareness of one's particular species-needs must be taken into account to ensure adequate care, or even to communicate at all: "Overlooking someone's sex or race is entirely sensible; overlooking someone's species is a supercilious insult" (99). Calarco (2017) also rejects the term, but on different grounds, pointing out that "the dominant trends in our culture have never been toward respect for the species as a whole but rather for what is considered to be *quintessentially* human—and this privilege and subject-position have always been available only to a small subset of the human species," (26). Consequently, i limit my use of the term "speciesism" to discussions around Singer and moral extensionism, preferring (like Calarco) the term "anthropocentrism" instead.

exclude some humans, for example human babies and some human adults. Although influential in the animal advocacy movement—Regan also takes up a version of the argument (1983)—the argument from marginal cases is a dangerous gambit, because of its theoretical ambivalence. It can be invoked either to uplift animals into moral relevancy, or alternatively, downgrade marginalized humans out of the zone of ethical concern and into the outer darkness of moral dismissal in which animals are always-already trapped (Midgley 1983). *Animals* is essentially a fictional exploration of the dark side of this argument from marginal cases, positing a world in which many differently-abled humans are demoted from bios to zöe, from human being to animal body and are subsequently exploited ruthlessly for food and profit (Regan 2010; Shupe 2012; Vint 2010b).

Animals and disability

Given that the discursive animalization of marginalized humans is fundamental to the power dynamics of oppression, LePan's use of disabled humans as stand-ins for factory-farmed nonhuman animals is not unproblematic. While the names of the various syndromes that comprise the hybrid category 'mongrel' are fictionalized ('Peake's Syndrome' instead of Down's Syndrome, for instance) (Regan 2010), the novel's positioning of disabled *homo sapiens* as less than fully human risks reinscribing the ableist and anthropocentric material-discursive apparatus it seeks to destabilize. Shupe concludes her article 'The Bioethics of Peter Singer and the Mongrelization of Disability in Don LePan's *Animals*' by arguing that

Although *Animals* can be praised for aspects of its ethical mandate regarding animal rights advocacy, it inadequately foresees the extent to which readers familiar with bioethics or disability studies will naturally find its instrumentalist use of the disabled as props for a reevaluation of lower animals' inherent value offensive and disturbing. (2012, 22)

Shupe's unexamined conception of other animals as 'lower' than humans speaks to the ubiquity and stubbornness of hierarchical dualisms within the Western philosophical tradition (Plumwood 1997). Her apparent understanding of 'bioethics' as 'naturally' excluding other-than-human animals, curious from a critical animal and ecofeminist perspective, neatly dovetails with dominant "business-as-usual" ethical discourses which bifurcate bioethics (for humans) and animal ethics (usually taken to mean farm animal welfare) (Twine 2010, 21).

Against this naive anthropocentrism that pits intrinsic human dignity against the spectre of abject animality, critical intersectional approaches to disability and animals stress the codependency of these two subject positions (Richter 2014, 85). As Wolfe argues, both CAS and disability studies "pose fundamental challenges... to a model of subjectivity... in which ethical standing and civic inclusion are predicated upon rationality, autonomy and agency" (Wolfe 2013, 91). "The very measuring apparatus of autonomy produces a conception of the individual that... is constituted by ableist norms" (Bramwell 2011, n. p.), revealing the ways in which "speciesism and ableism collude with capitalism and modernist rationalities" (Richter 2014, 86) to articulate a fascist epistemology in which bodies that deviate from the norm are disciplined and instrumentalized (Pedersen &

Stanescu 2014, 265). Theories of morality that seek to extend ethical relevancy to a previously excluded group based on their possession of some supposedly species-neutral checklist of universally morally-relevant characteristics thus risk complicity in the material-discursive boundary-making of forms of subjectivity dependent upon their own constitutive exclusions—animal, disabled, irrational, Other. As Wadiwel argues,

Both Singer and Regan treat people with disability as if they were actually 'inferior,' rather than treating disability as a production of social and political processes. As such, they cooperate in the construction of ability and disability as apparently given and stable categories, enacting epistemic violence even as these philosophers are attempting to dismantle the arbitrary rationalities that construct "the animal." (Wadiwel 2015, 51)

The relation between disability and animality is not that disabled humans are like animals in their lack certain quintessentially human capacities; the connection, as Taylor (2011; 2017) argues, "centre[s] on an oppressive value system that declares some bodies normal, some bodies broken and some bodies food (2011, 191). Extensionist theories of morality like Singer's and Regan's, even if avowedly anti-anthropocentric, nevertheless partake of a logic that categorizes, contains, essentializes and hierarchizes difference within and between vulnerable bodies (Davis 2017). Such a strategy of redrawing rather than dismantling exclusionary boundaries between morally considerable and morally inconsequential forms of life merely tweaks the calibration of the material-discursive apparatus of domination, leaving the machinery of hierarchical dualism intact and available for deployment against Others of any kind.

LePan is clearly aware of the shortcomings of these kinds of extensionist ethics; *Animals* does a good deal of legwork in showing how ideas about who counts as 'human' are historically and socially situated and far from fixed, with not only disabled people but women, slaves, 'barbarians,' and people of colour having been denied fully human status at various historical junctures (2009, 68). Narrator Broderick's repugnant assertion that disabled people "are simply not fully human" (36) demonstrates that a configuration of subjectivity that privileges cognitive criteria is an untenable epistemological framework not only for negotiating ethical relations with other animals, but with marginalized members of our own species as well. Emphasizing that material factors underlie oppressive ideologies (Nibert 2002), the novel recounts how an economic collapse borne of environmental degradation provided the impetus to legislatively redefine differently-abled *homo sapiens* as nonhuman and thus legitimately exploitable bodies ripe for consumption (LePan 2009, 37). The narrative thus directly engages the specific material-discursive performances through which exclusionary boundaries (such as 'human'/'animal') are enacted (Barad, 2003, 816), revealing that the problem is not simply that (some) animals inherently possess morally-salient physical and mental capacities that render their exclusion from the moral and political community unfair. Rather,

The problem is a series of ideas, practices and institutions that aim to protect the privilege of those deemed fully human over and against the nonhuman and it is through a complex and violent relation to animals, animality and 'nonhumans' of various sorts that this system establishes and reproduces itself. (Calarco 2017, 26)

Through clever manipulation of an epistemologically violent taxonomy of hierarchically-ranked alterity, the inhabitants of LePan's dystopia manage to avoid the troubling idea of farming humans by relabeling the humans they farm as 'animal,' dismissing their interests through a hierarchical dualism of humans (those who matter most) and nonhumans (those who matter less, or not at all). In this way, consumers are able to have their 'yurn' and eat it too. The hyperseparation of human/'mongrel' or (and subsequently human/animal) is foundational to the subjectivity of the novel's human characters. Questioning these dichotomies "makes everything unsteady, everything. If you start saying things like that, thinking things like that, pretty soon people will be saying there's no line to be drawn," Naomi's mother Carrie worries (109). In this way, the ontological security of unquestioned human supremacy that the hyperseparation of human and animal supposedly guarantees is revealed to be a dangerously fragile performative construct rather than any straightforward expression of natural order.²⁸

Gender and sentiment

The novel demonstrates an acute sensitivity to the entanglements of ideas about gender and about concern for animals. Carrie accuses her vegetarian daughter Naomi of being "hysterical" in her concern for Sam and for other animals in general (120).

Broderick's castigation of Naomi's abolitionist politics is similarly gendered—he labels

²⁸ Human/animal dualism is also manifested and reinforced through the similar dualism of subject/object; hence, the novel pays attention to the importance objectifying language in legitimizing violence. Naomi displays a sophisticated understanding of this process and when trying to convince her reluctant mother to let her keep Sam as a pet, polices her own language so that she doesn't say "him" and thus give her mother the impression of an overly sentimental bond (55). After Carrie has taken Sam to the farm and is explaining her actions to her spouse, she too uses "it" instead of "him" as a distancing mechanism, "Why was she calling Sam *it*, Zayne suddenly wondered. She had hardly ever done that since the first days after they had taken him in" (118).

her 'sentimental' in her empathy for other animals (148) and dismisses vegan activists in general as "being as unthinking as they are shrill" (105). These thoroughly gendered terms, often used to denigrate attitudes towards 'livestock' animals that are not based primarily on their utility to humans, continue to be highly feminized (Donovan 1990, 350-2; Luke 2007, 210-13). As Luke (2007) argues,

A central Western patriarchal ideology is the elevation of the "rational/cultural" male over the "emotional/biological" female. Women's rage (labelled "sentiment," "hysteria," etc.) is thus divested of political significance by interpreting any female reaction against the established order not as a moral challenge to that order, but as a biosexual phenomenon to be ignored or subdued. (211)

Emotional concern for animals thus becomes labeled as mere 'womanish sentiment,' an irrational and inconsequential foible of the fairer sex. The 'yurn'-eating (read: cannibal) characters in *Animals* continue in this tradition, trivializing emotional concern for 'mongrels' (and nonhuman animals) as both feminine and infantile and sharply contrasting such 'sentimentalism' to the masculine, mature, 'realistic' attitude of instrumentalism espoused by farming 'experts' and meat-eating consumers.²⁹

While the novel seems to critique the bifurcation of morality into a hierarchy of reason/emotion, the text remains somewhat ambiguous. Rationalist meat-eater Broderick's gendered dismissal of Naomi's vegan politics as hyperemotional could constitute either a critique or an endorsement of reason/emotion hierarchical dualism, depending on how

²⁹ Writer and activist Brigid Brophy (1966) puts it best: "Whenever people say, 'We mustn't be sentimental,' you can take it they are about to do something cruel. And if they add, 'We must be realistic,' they mean they are going to make money out of it" (21).

persuasive the reader finds Broderick's arguments for 'mongrel' (and subsequently all 'livestock') welfare. Like Naomi, factory-farming apologist Carrie is also depicted as overemotional and in distinctly gendered ways. Mired in the biological and the familial, too emotionally volatile to take a step back and see the bigger picture, Carrie is blind to her daughter's desperate attempts to make her see what is right in front of her nose—that Sam is not intellectually impaired, simply unable to hear. Vint (2010) argues that the novel does not vilify Carrie, portraying her as a “complex character who tries to do the best as she sees it” (40). I agree that Carrie is a complex and ultimately sympathetic character, but I am not so sure that the novel refrains from vilifying her. Carrie serves as the mouthpiece of the most virulent anti-'mongrel' arguments in the novel and is the person most fully responsible for the murder of the deaf child Sam; although she eventually sees the error of her ways, it is much too little, much too late.³⁰ While *Animals* situates its two female characters at opposite ends of the political spectrum, it is no less true that they are both impelled in large part by emotion (and not solely reason). If Carrie is the bitter, emotionally-scarred factory-farm apologist and Naomi is the sentimental vegan idealist, it is Broderick—the main male character—who is sophisticated enough to find a middle ground between these two 'extremes' in his opposition to factory farming and his support of small scale 'happy meat' (Parry 2011).

³⁰ Carrie argues that eating 'mongrel' flesh is 'natural,' and that there exists a similarly 'natural' hierarchy of moral worth, with humans at the top and nonhumans languishing somewhere below, “I care for you, I care for us as a family, I care for people everywhere. In that order,” Carrie snaps. “And further down the list – quite a bit further down the list, I’ll admit – I care for animals” (83). (Just as in real life, an explanation of exactly how caring for humans precludes caring for other animals is not forthcoming). Carrie even invokes the potentiality argument from moral philosophy, a crude rebuttal against the argument from marginal cases that underpins so much of the book's ideology. Carrie argues that while babies are not any more intelligent than the typical 'mongrel,' babies have the potential to grow into something better, more fully human, a potential that 'mongrels' and other nonhumans lack (84). This laundry list of common, oft-unquestioned anti-animal arguments is problematized by applying them not to the usual targets of nonhuman animals, but to an oppressed group of animalized humans.

While Carrie and Naomi are both motivated by unruly emotion (hatred and love, respectively), rationalist Broderick apparently moves beyond these womanly excesses. Whether his rationalism moves him to a place the reader would want to go is another matter entirely.

As Acampora points out, calls for ethical carnism usually stop short of advocating “caring cannibalism” (2014,145) and one can certainly read Broderick’s rationalist argument for kinder meat production as satirical, applied as it is to *homo sapiens*. This is the perspective endorsed by Keen, who finds Broderick’s “hyper-rationalist” tone “chilling” (2012, 179, 156) and argues that what makes his “endlessly well intentioned” argument for ‘mongrel’ welfare “so unsettling may actually be its internal coherence — that is, if you grant him his starting assumptions” (166, 156). Broderick is a staunch supporter of ‘mongrel’ farming and yurn consumption, subscribing to the idea that “people ha[ve] to come first” and questioning how one could “justify lavishing attention [in the form of medical care and social support] on such creatures [‘mongrels’] when little enough attention was being paid to humans who needed help” (80). Broderick lauds “scientific breakthroughs” in intensive ‘mongrel’ production for “address[ing] the issue of social inequality from the perspective of food supply” (81), even as he touts the health benefits of more expensive “humane,” “organic,” “free-range,” and ultimately “great-tasting” ‘mongrel’ meat (104-5). Indeed, large swaths of Broderick’s narration seem to read as a satire of many of the arguments associated with so-called ‘new carnivore’ food writers (Parry 2009; 2010; 2011); for example, the character argues that

we should face squarely and be prepared to justify through honest argument our

willingness to eat the flesh of mongrels, just as in an earlier age people had an obligation to face squarely and to be prepared to justify their willingness to eat the flesh of a cow, a chicken, a horse, a lamb. (40)

Many readers no doubt find such arguments reasonable and even-handed when applied to other animals – however, applying these arguments to human rather than nonhuman animal slaughter makes the “compassionate carnivore’s” (Friend, 2006) preoccupation with ‘meeting your meat,’ taking ‘responsibility,’ and ‘squarely facing’ the facts of animal suffering and death seem grotesque. In a final twist demonstrating the trumping of aesthetics over ethics in carno-gastro-philosophical discourses, Broderick describes how “early yurn” (a clear allusion to veal) is regarded as “a delicacy, a truly unique flavour,” and pointedly refuses to condemn the practice (81). Here and throughout, LePan generatively exploits the cognitive dissonance between the conceptual categories ‘human’ and ‘animal’ to problematize and intervene in the treatment of the latter under industrial capitalism.

Unsurprisingly, *Animals* has been described by reviewers as “shocking” (see Stone, 2010). Perhaps anticipating something of a backlash from indignant meat-eating readers (see reviews from Gueletina 2009; Turnham 2012), LePan’s concludes his author’s afterword in a somewhat conciliatory tone, insisting that he never intended to downplay the distinction between humans and other animals (179) and revealing that his own views on carnism are much more in line with the pragmatic ‘welfare activist’ Broderick than the ‘vegan extremist’ Naomi. Calling veganism a “dramatic step,” LePan feels that such a response, though “commendable,” is just not appropriate for him (at

least for now),

By the time I am seventy I may well be a vegan and a part of me would like to become one now, but I have to acknowledge that for me, slow stages seem to represent what is achievable. (178)

That this final paragraph of *Animals* commends but does not endorse the veganism espoused by Naomi further demonstrates that the novel cannot be dismissed as a “morally didactic” tract “guilty of oversimplification” (see Schupe 2012, 20; Gueletina 2009; Burnham 2012). By bifurcating the narrative into two distinct registers, respectively rationalist/affective and ‘welfarist’/‘abolitionist’—and yet refusing to definitively endorse or condemn any ‘side’ of each dualism—*Animals* combines a powerful appeal to empathy with a detailed political-economic address to the subject-as-citizen Vint (2010, 37). Hanging suspended in tension between several conflicting ethical discourses, the novel resists easy political or philosophical compartmentalization, even as it “compels us to feel with the suffering of animals in the factory farm system and provides intellectual tools to undermine the cultural logic that has enabled us to rationalize this exploitation” (Vint 2010, 46). It is partly because of this core ambivalence that *Animals* remains such a generative text for thinking through contemporary popular discourses concerning meat consumption and human-animal relations more broadly.

Dualism in D’Lacey’s Meat

Like *Animals*, Joseph D’Lacey’s “eco-horror” novel *Meat* (Wilson, in Dunn 2015, 20) deploys the spectre of anthropophagy to problematize and disrupt contemporary carnist

technologies and discourses. Set in the township of Abyrne, a crumbling settlement in the middle of a post-apocalyptic desert wasteland, *Meat* explores the role of religion and economics in justifying, enabling and mandating the industrial-scale non-criminal putting to death (Derrida 1991) of those shunted below the all important human-animal line (Reyes 2014). Known as ‘the Chosen,’ a caste of humans supposedly divinely ordained to sacrifice their flesh to feed the townspeople, the human cattle of D’Lacey’s novel are mutilated at birth to hobble their manual dexterity and destroy their vocal capacities. The novel follows vegan subversive Richard Shanti, a well-respected slaughterhouse worker on the disassembly line of the powerful Magnus Meat Processing Company, as he teams up with a group of counter-religious anti-carnist rebels to challenge the cannibal hegemony maintained by the villainous meat magnate Rory Magnus and the corrupt and patriarchal religious institution known as ‘the Welfare.’ The novel ends with the revelation that Shanti was actually born as one of the Chosen, but was rescued by a grief-crazed slaughterhouse worker whose own babies had died and raised as one of the townsfolk. Shanti becomes a saviour figure for the Chosen, eventually freeing them from their bondage and leading them in exodus from the decaying town into the wasteland beyond, in hopes of a better life.

Like *Animals*, *Meat* deploys the estranging perspective of SF to put *homo sapiens* through the ravages of industrial farming. In doing so, as Reyes argues (2014), the novel exposes the ontological lability of the categories bios and zoë, between the bare biological life of ‘meat on the hoof’ and the political life of the human citizen-subject (114). Life in Abyrne is structured by a strict hierarchical dualism of human/animal,

“enforced through a complex semiotic, sociological and religious process” (Reyes 2014, 114) that keeps the citizens of the town on one side of the divide and the Chosen on the other. Cleverly foregrounding the cannibalistic undertones of Christian eucharistic ritual, the religion of Abyrne—enforced by a powerful socioreligious institution known only as “the Welfare”—mandates the literal consumption of God’s children, the Chosen. The Welfare’s foundational text, ‘The Book Of Giving,’ relates the origin myth of Abyrne: namely, that “[t]he Father sent his own children down to earth so that we, his townsfolk, might eat” (76). The taxonomic construction and capture of a class of *homo sapiens* designated ‘God’s children’ and teleologically ordained to be eaten is further reinforced through a sacrificial logic that understands consumption of the Chosen to be the path to transcendental salvation: “I sacrifice my children for each of you that none shall ever be hungry,” the Book of Giving reassures. “By eating the sacred flesh of my children, may all mankind [sic] be one day sacred themselves and join me at my table...My children are your cattle. Break their bodies as your daily bread, take their blood as your wine” (76-7). In addition to making effective and unsettling use of Christian tropes, D’Lacey makes explicit the interpenetration of religious discourse and economic praxis. Meat baron Rory Magnus is hardly a disinterested party in this regard, but there is no indication that he is mistaken in his assertion that “the religion of the Welfare is an aid to business. Business comes before anything else in the world” (124). Economic rationalism is buttressed by and in turn legitimizes, a patriarchal monotheism that mandates the violent domination of those deemed edible: doubts about the comestible status of the Chosen are, in the words of protagonist Richard Shanti, “bur[ied] under the words of the Book forever” (131). *Meat* details how the interlocking and co-constitutive

material-discursive apparatuses of capitalism, patriarchal monotheism and industrial meat production materialize a hierarchically dualistic configuration of subjectivity predicated on the sovereign power to differentially designate living bodies as either ‘citizen’ or ‘meat’—an agential cut with profound and lethal consequences.

Although the status of ‘Chosen’ is ostensibly divinely ordained, the vagaries of capital demand more profane strategies for ensuring the smooth and profitable functioning of Abyrne’s cannibal regime. The materially and discursively produced line between eater and eaten fluctuates, with the townspeople of Abyrne always at risk of being stripped of their human status and reduced to food: as meat baron Magnus repeatedly stresses, ‘If you’re not townsfolk, you’re meat. It’s as simple as that’ (2009, 146). The relegation of the Chosen to the status of meat is accomplished in part through physical mutilation. In excising the Chosen’s vocal cords and clipping their thumbs, the ‘Magnus Meat Processing Company’ strips the abject *homo sapiens* of language and tool use, abilities often associated with the human bios (Dunn 2015, 44). Shanti, however, comes to understand that even without vocal speech, the Chosen remain communicative through a complex system of taps, clicks, hisses and sighs. Rather than language being something *a priori* that a creature either possesses or lacks, D’Lacey draws attention to “the way in which humans decide what ‘language’ constitutes, decide whether or not to deem ‘animals’ capable of ‘meaningful’ communication and decide whether or not to attempt to understand the language of the ‘other’” (ibid.). The well-documented anecdotal history of other animals resisting their own confinement and slaughter (Hribal 2010; Wadiwel 2015; 2016) is ample evidence that, even within the most restrictive

systems of incarceration, other animals are capable of communicating something of their desires to the attentive human observer: as Donovan argues, “[i]f we listen, we can hear them” (1990, 375). By adopting a stance of openness to the subjectivity of the other and developing the skills of attentive listening instead of quarantining consciousness behind a firewall of human exceptionalism, Shanti is able to partake in the fundamental communicability of the nonhuman world (Plumwood 2002; Donovan 2016), further underscoring Barad’s (2007) argument that subjectivity emerges *via* agential intra-action.

Meat and misogyny

Despite the novel’s suggestion that the voice of the brutalized Other can be heard and honoured through what might be described as a feminist ethic of care, *Meat’s* representations of gender and affect far exceed *Animals’* in aligning unruly maternal femininity with a terribly misguided complicity in perpetual genocide. Maya, mother to twin girls and Richard Shanti’s wife, is similar to Carrie in her insistence that she is doing what is best for her offspring in actively supporting the cannibal status quo; her positioning as the emotionally volatile wife of a gentle, more measured husband also echoes Carrie’s marital dynamic. Although Carrie’s cannibal complicity easily trumps Maya’s (Carrie deposits a pleading deaf child at a slaughterhouse; Maya’s biggest transgression is trading blowjobs for steaks), it is Maya who is written with hostility, as an emasculating bloodthirsty harridan too invested in mundane domesticity to question the horrifically unjust system of institutionalized violence in which she unthinkingly participates. Whereas *Animals* gives Carrie a sympathetic and complicated backstory to

explain her actions, *Meat* is content to explain Maya's as biologically determined:

The only thing a mother could give in the world was love and nourishment to her children and she wasn't going to allow anything to prevent her. She loved them.

They came before everything else. No matter what the cost. (114)

Shanti is 'frightened' by his wife's single-mindedness, as she trades sexual favours to himself and other men in exchange for choice cuts of meat to feed to their daughters. "She was like a wild animal protecting her offspring, fighting for them, hunting for them, defending the lair" (99), Shanti muses, reiterating dualistic tropes of women "as passive, reproductive animals... immersed in the body and in the unreflective experiencing of life" (Plumwood 1993, 20). Shanti's depiction of Maya as instinctually driven to maximize the fitness of her progeny similarly invokes the dubious authority of mid-twentieth century human evolutionary hypotheses that posited a primordial 'meat-sex trade' in which hominid housewives traded "sexual access, reproductive opportunities and ownership of the female's fecundity" to male hunters in exchange for meat (Noske 1989 104). *Meat* thus entrenches Maya's locus of agency firmly within a crude 'survival of the fittest' paradigm that touts the adaptive benefits of certain aspects of supposedly biological substrates like animality, motherhood and femininity, even as it denigrates those very same attributes as bestial.

The biologically-ordained materiality of Maya's meat-hunger stands in stark contrast to her husband's high-minded vegan spirituality. Early in the novel, Maya confronts Richard about his refusal to bring home the meat that is his due as a well-respected slaughterhouse worker, citing fears that their twin daughters are malnourished.

Richard's response—"I care about your *souls*" (47, original emphasis)—serves to demonstrate his transcendence of such base materialities as nutrition. Pragmatic Maya dismisses such ephemerality: "In this life, talk of the spirit is irrelevant. You have to care about our bodies," she entreats, invoking Richard's paternal duties and repeating her conviction that the "family is starving" (ibid). Although Richard is at first impressed by the ferocity of his wife's devotion to their children, he later comes to doubt her motives as the "dishonest" and "manipulat[ive]" machinations of a "tainted woman" (44, 254): "All she worried about was getting enough meat and staying a cut above the other women in the town" (176). This assessment is echoed by Magnus, who sees Maya as "a woman who manipulated but without any real intelligence" (251). As the novel's main antagonist, Magnus' opinion can hardly be accepted uncritically; however, there is no indication within the novel that the meat baron is mistaken in his estimation of Maya's motivations and capacities. When Magnus eventually rapes and murders Maya, it happens off-page, not out of any sense of propriety (D'Lacey does not shy away from other descriptions of sexual violence), but because at this point we are not really supposed to care about her anymore. Her death hardly even registers for Richard, who casually declines to see her grave: "That won't be necessary," he shrugs (302). In this way, *Meat* hammers home the uncomfortable truth that concern for other animals can indeed exist alongside and even stem from, virulently sexist, cold and essentialist

ideologies.³¹

Conclusion

SF's longstanding penchant for human meat demonstrates the necessity of the figure of the cannibal not only to the constitution of the human(e) Western subject (Sanborn 2001, 193), but to the configuration of other-than-human subjectivities as well.

Emergent within material relations of colonial consumption and centrally preoccupied with the containment and construction of difference, cannibal discourse becomes legible primarily within a schemata of dualism wherein the human and the animal figure as self-evident and pre-existing ontological categories. However, the implicit animalization of the devoured human subject simultaneously collapses this dualism of subjectivity and edibility, "call[ing] into question the universality of binary structures that generate meaning" even as it attempts to reinforce them (Guest, 2001, 4). While the centrality of the animal to SF narratives of human meat varies from text to text, millennial human cattle dystopias have worked to foreground and problematize the hyperseparated

³¹ Piers Anthony's 'The Barn' (1972) is an even more overt example of a human cattle story articulating concern for other animals within a horrifically sexist and sexually violent narrative. In Anthony's short story, the extinction of large nonhuman mammals in a parallel Earth has created a demand not only for human flesh, but for human milk as well. A man from our own Earth, sent through a time-space portal to investigate, poses as a farmhand and ends up not only milking the "cows"—mute, prodigiously breasted human women—but actually having intercourse with one (she reminds him of younger version of a woman back home who had rejected his advances). The "cow" our protagonist molests has "no brain, only a hungry pudendum"; so hungry, in fact, that his "weapon" grows flaccid in the "bitch's" "dismayingly capacious vaginal tract" and he is reduced to jerking off while he watches a better endowed "bull" (a "giant of a man," with a "tremendous penis") inseminate her instead (11). The contempt for women that permeates 'The Barn' almost defies belief and cannot easily be cordoned off as the perspective of the protagonist as opposed to that of the author. Anthony wraps up his pornographic little parable by rather heavy handedly musing on whether the ghastliness of farming human women is really any different, or any worse, than the widespread real-life practice of animal farming. Anthony apparently wants us to think about farmed animals; he does not seem to mind any discursive violence done to women along the way and indeed positively panders to the basest appetites of the heteromale gaze with his graphic and lurid descriptions of less-than-consensual sex with animalized, physically and intellectually disfigured, sexually objectified women.

human-animal dualism of Western (post-)modernity through subjecting *homo sapiens* to the gruesome travails of the carno-capitalist animal industrial complex (Noske 1989). These texts take as a given that human subjects should not be treated so and suggest that, in the absence of any morally salient distinction between humans and other animals, neither should subjects of other species. In this manner, cannibal SF problematizes the taken-for-granted notion that subjectivity is the exclusive domain of the human, arguing for the extension of moral consideration to subjects of the nonhuman variety and against using any morally considerable subject as a means to such a grisly end. However, while these narratives effectively dismantle human-animal dualism by demonstrating substantial cognitive and affective similarities between (some) humans and (some) other animals, they risk tacitly supporting the kind of material-discursive boundary-making that equates moral considerability with a myopic cluster of capacities that fail to do justice to the heterogeneity within the human species, let alone beyond it. The strategy of extending moral relevancy only to those nonhumans who meet whatever criteria deemed relevant for subject-status does little to problematize the underlying dualisms that designate certain bodies as legitimate targets of disciplinary violence in the first place. Even *Animals*, a philosophically sophisticated narrative that arguably problematizes this anthropocentric fetish for supposedly innate and quintessentially 'human' capacities, addresses the bulk of its critique of speciesism towards a rigidly static construction of subject-as-citizen that fails to account for the relational and dynamic emergence of subjectivity. The rationalist register of this address is only partly mitigated by the affective register of Naomi's accompanying manuscript, which for all its passion remains both highly feminized and infantilized. In the following

chapter, I will consider SF narratives that complicate the entwined notions of the subject as human-like and the subject as always-already unavailable for use by presenting scenarios that foreground ethical response-abilities based on recognizing difference rather than similitude and emphasize the fundamental edibility of all ecological agents.

3. Kin and Carrion: Appetite, Ethics and Alien Encounters

The previous chapter examined how human cattle stories treat human beings the way other animals are currently treated under carnocapitalist regimes in order to problematize the anthropocentric notion that ethical subjectivity should be reserved only for members of our own species. In this chapter, I examine two twenty-first century SF series centrally concerned with zoophagy—that is, the human practice of eating members of other species. I engage these texts not in an effort to prop up an absolutist notion of the subject as inherently inedible (a patent absurdity, since all embodied beings are food for others [Plumwood 2000]), but to argue against the hegemony of extensionist theories of morality that measure the moral relevance of other lives against a preconceived set of (usually anthropocentric) criteria to ‘bestow’ subjectivity upon certain classes of creatures, whilst leaving the rest out in the cold. I argue that this kind of measuring against a human yardstick demonstrates a profound inability to ethical engage with difference, thus reifying similitude as the paramount ethical guiding principle and encouraging the containment or incorporation of the other within the self. Through a consideration of SF narratives’ engagement with philosophical concepts such as deep ecology, ontological veganism and respect-use dualism, I argue for the necessity of a contextual and relational ethics that engages rather than subsumes difference and eschews grand moral calculations or injunctions in favour of sustained, dialogical and response-able engagements with alterity.

Anti-anthropocentric egalitarianism in Traviss’ Wess’har Wars

Consisting of six books and spanning two star systems and four planets, Karen Traviss' sprawling *Wess'har Wars* hexology (2004-2008) imagines a scenario where humans are impudent upstarts who come up against a vastly superior alien civilization. Shan Franklin, a "copper" working for a future European Union's 'Environmental Hazards Enforcement' division, leads a military expedition to a distant planet to check on a lost colony of religious separatists. They discover that the planet is defended by the wess'har, powerful quadrupeds with four-lobed eyes and technology so advanced as to seem magical. The wess'har are "like vegans. They make no use whatsoever of other species beyond food plants and they have no tolerance of anyone who does" (2004a, 121). Although the wess'har adhere to a philosophy of noninterference, their parent species, the eqbas vorhii, are not so restrained. These "highly militarized vegans," best described as something of a cross between "galactic policemen" and interstellar restoration biologists, bring down any civilizations that "cross their line of ecological morality" (2008, 8), provided they are invited to intervene by a member of a suffering species. When the Australian government (ostensibly representing the interests of Indigenous Australian and Canadian peoples, but really seeking an advantage over other terrestrial superpowers) invite the eqbas to intervene on Earth, the galactic policeman obliges, promising (or threatening) to drastically reduce the human population in order to restore ecological "balance." Meanwhile, Shan herself becomes infected with an alien parasite that makes her invincible, enters into a polyandrous relationship with a wess'har male and a human man and becomes an honorary wess'har "matriarch" herself.

The series readily lends itself to material ecofeminist literary critique: Murphy finds Traviss' space-operatic saga of interplanetary "extreme restoration biology...highly reminiscent of Val Plumwood's work in particular" (Murphy 2013, 131). The "dehomocentric, heterospecies egalitarianism" (ibid) explored throughout Traviss' series has clear affinities to Plumwood's dialogical interspecies ethics (ibid), although, as I will argue below, the late feminist luminary would surely balk at the alien wess'har's policy of radical, unilateral interventionism in matters of planetary ecology (not to mention their hardline veganism).³² Vint (2010, 148; 2006) has discussed the *Wess'har Wars* as a work of anti-anthropocentric ecocriticism and Sullivan (2010) has parsed the lability of concepts like 'balance,' 'restoration' and 'nature' in the series, pointing out the problematics of seeking to "restore" a living (if moribund) ecosystem to some hypothetical 'natural' state (problems of which Traviss' characters are keenly aware). My

³² Traviss is a quick to rebut critics who presume to conflate her characters' viewpoints with her own, she is, in her own words, "not a feminist," "not a vegan, not a liberal, not my characters" (Traviss 2007, 620 ; Traviss & Scalzi 2006, no pagination). I will refrain from speculating about Traviss' personal politics, but I certainly agree with the author's rebuttal to those critics (see Hickman 2007) who persist in describing the *Wess'har Wars* hexology as feminist in any substantive sense, beyond the most superficial tropes of a strong female character and a matriarchal alien society. Wess'har matriarchs are as inherently rational and powerful as their males are biologically predisposed towards subservience and clinginess and human protagonist Shan "one of the lads" Franklin makes such a good candidate for matriarch precisely because of her repeatedly referenced stereotypically 'masculine' attributes (like being tall, no-nonsense and not afraid to use violence when necessary). The narrative's "dichotomized gender logic based mostly on a simple reversal with a few special touches is reductive," as Sullivan points out (2010, 9). Furthermore, for an author who insists that she does not share her character's viewpoints or motivations, main character Shan's brand of prickly gender conservatism certainly seems a bit on the nose: "If girls want to play boys' games and get boys' pay, they have to do what the boys do," the "copper" shrugs in one particularly revealing passage (2004a, 141). Critics hoping to read a queer message into Traviss' central interspecies menage-a-trois will likewise be disappointed—the arrangement is one of staid, one-at-a-time polyandry rather than anything more labile, with her two male suitors never engaging in any sexual contact with each other. Moreover, the assertions of several characters through the series support an essentialist and heterocentric understanding of human nature, namely that "humans are monogamous" (2005, 258) and that there is no greater purpose in life than childrearing one's own genetic progeny. Character viewpoints may be idiosyncratic or fallible, but the arc of the narrative itself also serves to reinforce these conservative family values—Shan's polyandrous relationship soon dissolves, with the alien member of the trio returning to his kind to raise children and the remaining human heterosexual pair settling down in traditional marital bliss.

focus is on how eating is presented in these novels, particularly non-obligate zoophagy, a practice shunned by the vegan wess'har, who espouse a praxis of multispecies egalitarianism in which all motile creatures are 'people' and the category 'animal' simply does not exist. The wess'har for the most part reject practices that use other 'people' as a means to an someone else's ends, instead insisting upon responsible ecological stewardship and generally espousing a policy of interspecies equality-of-interests for all 'people.' However, although they are vegans who respect the personhood of individual creatures, they are also utilitarians who accept that certain deaths might be required for the greater good of ecological flourishing. The wess'har and especially their more militant eqbas faction, do not shy away from interpersonal violence if it helps promote the 'justifiable end' of ecological 'balance,' a loaded and labile term that Traviss' characters spend a good deal of time problematizing. The series culminates with the eqbas "restoration" of the ecologically-ravaged Earth, which they achieve by decimating the human population with engineered pathogens and forbidding the remaining humans from eating other animals.

The anti-anthropocentric egalitarianism explored throughout Traviss' series brings the wess'har into conflict with humans, whom the vegan aliens refer to as "gethes," carrion eaters. The wess'har reject any kind of dominant-species chauvinism and oppose the hierarchical anthropocentrism of the humans they encounter, arguing forcefully that neither "complex language nor the ability to conjure up abstract concepts" is a satisfactory ground for ethical relevance (2004a, 302). The wess'har disdain the shortsightedness of the gethes, their inability to recognize value in the alterity of the

other: "difference makes others invisible to gethes," as one wess'har character observes disapprovingly (2004b, 302). The narrative repeatedly emphasizes how much easier it is to empathize with and value those others who are most like us. When human protagonist Shan recounts how an early encounter with a gorilla opened her eyes to the subjectivity of the other-the-human, her wess'har companion shrugs that the gorilla is still "another humanoid" (2004a, 263), similar to humans in form and cognitive function. The human characters are constantly challenged to extend their openness to alterity to those others who do not resemble the self, "And squid? and other things that don't look like us and don't look smart?," Shan ponders (2004a, 237). In this sense, as Vint argues, the series is as much a work of ecocriticism as much as genre sf: "both are modes of world-building that acknowledge a non-human perspective" (2010, 148).

"Where's the line now?"

Travis dedicates *Crossing the Line* (2004), the second novel of the series, "to all those who question where we have drawn the line" (2) regarding more-than-human ethics, singling out Richard Ryder (who coined the term "speciesism") and Andrew Linzey (a Christian vegetarian theologian) in particular. The series is peppered with references to animal protection philosophy, including Jeremy Bentham, St Francis of Assisi and Henry Beston and the wess'har's philosophical position mirrors that of the animal liberation movement here on earth, seeking to extend the rights usually afforded members of the human species to nonhuman animals, so subjects of all species fall within the bounds of the new, more generous moral community. As I argued in chapter two, this extension of the boundaries of conventional morality to include members beyond the human species

is a vital political project. However, the problem with what Plumwood calls “extensionist theories of morality” that identify a cluster of attributes as morally relevant and align these attributes with ethical subjectivity, is that their “intense emphasis on the need for a [supposedly objective] boundary between what counts and what does not” (2002, 149) necessitates that at some point a line must be drawn, beyond which fall lives not worth grieving (Butler 2009), relegated to the outer darkness of object-status and absolute dismissal (Midgley 1983). This kind of extensionist morality predicated upon subject-object dualism risks “close[s] the barn door of ethical consideration right after your chosen group has gotten out of the cold of historical neglect” (Nealon 2015, xii). Traviss’ characters struggle with this ethical boundary policing: “Plants on Earth try hard to avoid being eaten,” Shan points out. “They defend themselves with poisons and spines, so they probably don’t want to be eaten. But we all eat plants here. Where’s the line now?” (2006, 283). Although the narrative does not dwell on the question of what sort of responsibilities we might have towards non-animal beings like plants and bacteria, nor is their ethical mattering foreclosed: “moral ambiguity and ethical heterogeneity remain watchwords in series” (Vint 2010, 153). The line may be drawn, but it is constantly questioned. One character muses that, “if push came to shove, he wasn’t even sure that he could define a plant” (2006, 155) and later notes that “bacteria lived and died within every living thing each second of the day,” although “there was a limit to how much even wess’har could mourn” (2008, 297). Here and throughout, working through the difficulties of a non-dichotomous onto-epistemology of human and other-than-human lifeworlds “is part of the intellectual project of Traviss’ series which continually both

challenges and validates the wess'har axiom that all life must be regarded as absolutely equal" (Vint 2010, 151).

Deep ecology and denial of difference

There is much to appreciate in Traviss' brilliant work of ecocritical vegan SF and much to admire in the wess'har insistence that cross-species alterity is to be valued, not hierarchized. However, a close reading of the philosophy of the wess'har, particularly their interventionist 'interplanetary vegan police' faction the eqbas vorhii, reveals that the failure of which they accuse the "gethes"—that is, to appreciate and respond to difference—is a failure to which they themselves succumb. The eqbas flatten intra-human dissimilarities and advocate forcible conversion to a plant-based subsistence lifestyle—essentially enforcing a universal moral injunction against zoophagy. As Vint (2010) observes, the eqbas' failure to ethically engage with alterity is highly reminiscent of the philosophy of deep ecology (151). Originally articulated by Arne Naess as an alternative to an anthropocentric, so-called "shallow" ecology primarily concerned with preserving "the health and affluence of people in the developed countries" (Naess 1995[1973], 3), deep ecology favours a non-anthropocentric "relational total-field image" of human-environment continuity, advocates biospherical egalitarianism, diversity and (in Naess' formulation) adopts an explicitly "anti-class posture" (5). Plumwood commends Naess' work for seeking a "historic shift in human consciousness away from the dominant instrumental relationship and towards one based on respect and communicative virtues" (2000, 59), but argues that it does so through a form of self-realization based on a kind of totalizing identification with nature that subsumes the

alterity of the other (2000; 1994, 71). Especially in Anglo-American and Australian versions, which “differ markedly from the aspirations and methods of Naess” (van Wyck 1997, 39), deep ecology champions a sense of self predicated upon “a complete breakdown of the distinction between self and other” (van Wyck 1997, 41). Australian deep ecologist Warwick Fox has even asserted that “to the extent that we perceive boundaries, we fall short of deep ecological consciousness” (Fox 1985, in van Wyck 1997, 35); ecofeminists see this tendency to obliterate rather than renegotiate boundaries as fundamental to deep ecology’s systemic failure to ethically engage difference both within and between species, systems and scales (Plumwood 1994; Cuomo 1994; Cheney 1994; Lahar 1993, van Wyck 1997,1). The subtext underlying the deep ecological concepts of self-realization, identification with nature and ecological consciousness “is the idea of containment, containment of the other, of difference, rather than genuine recognition, acknowledgement and embracing of the other” (Cheney 1994, 164; Braidotti 2013, 85. Assuming that on some fundamental level “all knowers are the same” (Cheney 1994, 167; Plumwood 2002, 203), similar to the self in certain key respects that makes consensus and world-building possible, deep ecology often fails to appreciate that others may have different dispositions, desires and responsibilities than the self’s. This monological elision of alterity underpins deep ecology’s unfortunate tendency to “subsum[e] difference within a totalizing vision or salvational project” (Cheney 1994, 164), rather than working towards the “negotiated relationships of mutual adjustment” (Plumwood 2002, 195) that ecologically embodied intersubjectivity entails. As van Wyck argues, the deep ecological construction of the subject merely reverses the constitution of the modern Western subject it seeks to

supplant, “an operation that lifts and relocates a contested and confused modern subject from its structured relations to ideology, politics, the unconscious and so on, to a smooth, noncontradictory ecological space” (1997, 105).

Whether or not Traviss intentionally evoked deep ecology (a distinct possibility, given how philosophically literate the novels are), the philosophy of the eqbas and the philosophy of deep ecology share several striking parallels. Both argue that the psychological mechanism of anthropocentrism is to blame for the ecological crisis, that this mechanism is a design flaw inherent to all members of the human species and that the human population needs to be drastically reduced in order to maintain (or recreate) a flourishing biosphere. This monological and interventionist approach to interspecies ethics is both validated and critiqued within Traviss’ narrative. Not only are the more pacifist wess’har dubious as to where and how their militaristic eqbas cousins draw the line between aid and interference, but on a more sophisticated level the narrative troubles the assumption that “all knowers are the same,” that all agents face the same choices and must choose according to the party line. In one passage, a wess’har matriarch takes the human species to task for their tendency to “labor on under the willingly shared lie that all beings will be reasonable and behave like humans if they are treated like humans. Logic and history tells us we will behave like isenj, or like wess’har, or like ussissi. We all behave as we are” (2004b, 231). Although the critique is levelled at humans, is is this very same “shared lie”—that the other must behave like the self—that makes possible the eqbas’ salvational mandate to forcibly rehabilitate “gethes” (“carrion eaters”) into “acceptable humans” (2004b, 225). In this way, the

eqbas eco-warriors are actually very similar to the “gethes” they seek to convert to sustainable veganism—not only do the eqbas and “gethes” expect all “knowers” to be like them, but the eqbas’ focus on population and resource management is also suspiciously similar to the human practices they despise: “They culled, like herdsmen,” one human character observes of the aliens (2005, 69). And like deep ecologists, we might add (Vint 2010, 151). Traviss’ narrative makes crystal clear this is not a flattering comparison.

The strategy of incorporation that assumes the sameness of all knowers also underpins the flattening of intra-human difference common to both deep ecology and eqbas foreign policy—humanity as a whole is to blame for the ecological crisis and the importance of hierarchies within and between human groups is minimized or ignored (Heller 1994, 226; also Plumwood 1994, 72; Lahar 1993, 109; van Wyck 1997). In this way, both deep ecological and eqbas *vorhii* conceptions of subjectivity are revealed to be dangerously unitary, “clos[ing] off the possibility of heterogeneous subjectivities by representing humans as a singular ecological category” (van Wyck 1997,2).

Environmental destruction is then conceived of as the result of undifferentiated ‘human’ action, ‘human’ attitudes and ‘human’ teleology which “aims inevitably toward total dominion over and exploitation of the nonhuman realm” (Cuomo 1994, 95). Eliding the diversity of human world-views and the disparities in human power relations enables a kind of victim -blaming approach to population control, in which the crucial sociomaterial factors underlying population size—such as gender, race and other axes of power—are neglected (Cuomo 1994, 96; Heller 1993, 226). Eqbas and deep ecologists alike are

thus guilty of privileging psychological factors over cultural patterns, positing the theoretical primacy of the atomised self over the collective intra-action of confederations of differentially-positioned selves and others.

The flattening of intra-human difference also informs the rhetoric of “choice” that the underpins the eqbas insistence that non-obligate zoophagy must to be forbidden—those who have a choice whether or not to eat other animals must make that choice and apparently must make it in the negative. As Shan defensively tells a wess’har questioner, “before you ask, yes we do eat meat because we can, not because we need to” (2004a, 174). This stipulation of the capacity to “choose” reproduces a dichotomy between moral agents and moral patients, between creatures who can choose (i.e. humans) and creatures who cannot (the rest of the animal world, presumably): a move only possible under the problematic assumption of the sovereign subject as fully autonomous and uniquely agential. The wess’har emphasis on choice also echoes ecofeminist arguments over contemporary vegetarianism. Plumwood, herself a longtime vegetarian, has taken issue with the blanket assertion that “humans have a choice whether to eat meat or not” (2000, 305), pointing out that the unmarked “human” who supposedly has this choice is likely to be a privileged one, with some humans are located in an ecological or economic niche that makes meat eating necessary or ecologically optimum. As such, any universal, cross-cultural and transhistorical

condemnation of zoophagy, Plumwood argues, must be understood a neocolonial imposition of Western values.³³

An inability to grasp the significance of intra-human difference underlies the problematic vocabulary of choice that the eqbas invoke in their salvational mission to convert Earthly humans to a vegan subsistence lifestyle—and perhaps underlies Traviss' rather whitewashed vision of twenty-second century humanity. Although the Australia of Traviss' 22nd century is majority Muslim and Canada is under Indigenous governance, none of the six novels in the series feature any Indigenous characters; the main human characters seem to be White (or at least pale-skinned), while a couple of supporting characters are hinted to be of South or West Asian ancestry. As mentioned previously, the eqbas are initially invited to intervene on Earth by an Australian government purportedly representing the interests of Indigenous peoples. When the galactic policemen actually arrive, however, ideological differences between the militant vegan aliens and Indigenous human groups whose cultures have long practiced sustainable hunting come into sharp relief. Imagining how Indigenous peoples might respond to this new colonial incursion into their cultural integrity, Traviss opens a chapter late in the series' third novel with a statement ostensibly written by "Irniq Sataa, Indigenous person and Canadian People's spokesperson":

³³ Although correct in her assertion that not all humans do have a choice as to whether or not to eat other animals, Plumwood's (2000) critique of Adams (1993) is less than robust—as Eaton (2002) has pointed out, Adams was discussing catering at feminist academic conferences when she asserts that "humans have a choice whether or not to eat meat," not implying that all humans all over the world and across history have had equal access to plant-based nutrition options.

Our people have always lived by hunting and managing our natural resources with restraint and respect. It's an insult [...] to seek to impose a new world order of vegetarianism on Indigenous peoples, especially as it's [Western industrial] culture that seems to be the one that's had the most adverse impact on global ecology. Stuffing yourself with soybeans doesn't give you the moral high ground.
(Traviss 2006, 347)

“Irnig Sataa” is a figment of Karen Traviss’ imagination. Nevertheless, Travis is correct in suggesting that Indigenous perspectives on human-nonhuman relations might clash with the eqbas’ top-down injunction against zoophagy; as Robinson points out, “Indigenous culture is frequently portrayed as opposed to vegan practices” (2014, 682).³⁴ However, Traviss’ parsing of Indigenous Canadian perspectives of other animals as “natural resources” to be “managed” with restraint is only part of the story. Indigenous Canadian and North American perspectives regarding animal subjectivity turn out to have an awful lot in common with the philosophy of the eqbas, in which all animals are “people.” Many Indigenous societies have never needed futuristic aliens from outer space to tell them that other animals are “persons”; as Linton (1993: 4) points out:

Set within a broader framework, one that gives due attention

³⁴ For example, “In her acceptance speech for the Polaris Music Prize, Inuk throat singer Tanya Tagaq portrayed veganism as colonial when she encouraged the consumption and wearing of seal as a “sustainable resource” and then added “Fuck PETA,” referring to People for the Ethical Treatment of Animals” (Robinson 2014, 682). This is not to say that veganism is necessarily incompatible with Indigenous philosophies; Robinson’s ecofeminist analysis of Mi’kmaq legends and rituals argues that

The values obtained from an ecofeminist exegesis of Mi’kmaq stories can serve as a starting point for an Indigenous veganism. The personhood of animals, their self-determination and our regret at their death show that choosing not to ask for their sacrifice is a legitimately Aboriginal option (2013: 193).

Robinson personally understands veganism as a set of “daily practices that are in keeping with the values of our ancestors, even if they may be at odds with their traditional practice” (194).

to other cultural perspectives—notably, Native American traditions—an inclusive concept of personhood is not postmodern at all but actually pre-modern. (4)

Indigenous Canadian and North American ontologies of human-animal/human-nature continuity and nonhuman agency starkly differ from the Western tradition of hierarchical dualism and human exceptionalism that Traviss' series (and this dissertation) critiques. While there is no single view on animals that is shared by all Indigenous Canadian and North American people, let alone all Indigenous people worldwide (Robinson 2014, 672), TallBear points out that many “Indigenous peoples have never forgotten that nonhumans are agential beings engaged in social relations that profoundly shape human lives” (TallBear 2015, 234). As such, the issue is not meat consumption/nonconsumption per se but rather “the ontologies of humans and animals that informed and structured how people ate, who could be eaten and in what manner” (Struthers-Montford 2017, 30).³⁵ Kinship and edibility are not mutually exclusive categories in an ontology of human-animal continuity in which nonhumans of all kinds (not just animals) are seen as relatives engaged in mutually reciprocal relations of use *and* respect.

Such nuances are lost on the invading the eqbas; although they allow certain Indigenous populations to continue consuming other animals, they do so with the strict caveat that this is only permissible wholesale reversion to a neolithic lifestyle and even then hunting must be both obligate for survival and ecologically optimum. Flattening out the differences between human populations in order to locate the roots of the ecological

³⁵ For Indigenous Canadian and North American scholarly perspectives on animals, animality and veganism see TallBear (2011, 2013, 2017), Belcourt, (2014) and Robinson (2013, 2014).

crisis in the individual psychology of anthropocentrism rather than attending to the sociological inequalities that contribute to it, the eqbas are rendered deaf to the voices of Indigenous humans who protest that they don't want to eat soybeans, that responsible hunting of other animals has been part of their shared lifeworld for millennia and that the ecological crisis the eqbas seek to address is not at all their doing. The eqbas' response to the very valid concerns raised by Indigenous groups in the novel subsumes Indigenous agency and power of self-determination beneath the hegemony of a technologically advanced superpower, blithely recapitulating the legacy of intra-human colonialism that has so thoroughly devastated Indigenous cultures worldwide. The narrative touches on but does not linger on these problems—ultimately, the magical technological supremacy of the wess'har makes all debate on this point moot.

Bright boys and better toys

As indicated above, Traviss ultimately achieves her vegan-environmentalist heterotopia through a technofix, relying upon the the simplistic equalizer of unlimited technology (Sullivan 2010, 274) to achieve her SF vision of interplanetary, interspecies justice. As Sullivan points out, the wess'har's astounding technology apparently “has no ecological costs in terms of extraction, production, nor of waste and its use is unlimited” (Sullivan 2010, 274). This “technofix’ solution is not only disingenuous, but problematic from an ecofeminist standpoint—the implication is that “all we need is a few bright boys and better toys to get us out of... the ecological mess we have made” (Plumwood, in Sullivan 2010, 277). This discourse of technohubris, recently articulated as a solution to the ecological crisis of the anthropocene in ‘An Ecomodernist Manifesto’ (Asafu-Adjaye

et al 2015), reframes the ecological crisis as an opportunity for human technological ingenuity to finally “liberate” us from the material constraints of the natural world. The framework of the ecomodernist technofix leaves no space to question the intensification of human consumption practices, which since 1950 have gobbled up more resources than those used by all previous generations in the history of humanity combined (Crist 2015, 249). Hamilton (2015) diagnoses the technofix approach to the ecological crisis as “a secular manifestation of the religious idea of Providence” (234) and Latour (2015) is even more forceful: “Wake up you ecomoderns, we are in the Anthropocene, not in the Holocene, nor are we to ever reside in the enchanted dream of futurism” (223), he declares. Traviss’ scenario refines the ecomodernist position in that her proposed program of technological bioremediation is only part of the solution; sweeping social changes in consumption practices must also be effected. However, in positing that this social transformation can only be enforced via the threat of punishment from the technologically superior eqbas, the basic tenets of the technofix solution remain in place. To be clear, I am not suggesting that we should hold SF writers to task for the technological feasibility of their inventions—a futile endeavour, particularly in light of Arthur C. Clarke’s famous maxim that “any sufficiently advanced technology is indistinguishable from magic” (1973, 16). However, in giving SF writers licence to stretch the limits of technological possibility (and SF readers license to suspend disbelief), one need not uncritically accept the seductive fantasy of unlimited technological mastery over the material world, nor the wider cultural beliefs within which such fantasies gain currency. As Plumwood has pointed out, technologies of control are necessarily rooted in the anthropo- and ratiocentrism of Western civilization, “whose

contrived blindness to ecological relationships is the fundamental condition underlying our destructive and insensitive technology and behaviour” (2002, 21). The “technofix” solution to our current environmental crisis becomes thinkable only in the shade of these “blindspots of rationalist hubris” (Plumwood 1992, 239)—and it is just such a technofix that Traviss’ narrative ultimately leans on to achieve its startling vision of militarily-enforced interspecies egalitarianism.

In Traviss’ eqbas, then, we find a narrative materialization of the (sometimes contradictory) leitmotifs of deep ecology and ecomodernism. I have argued that the deep ecological premise of the sameness of all knowers underpins the eqbas colonial invasion and “restoration“ of Earth, deafening them to the voices of the subaltern humans who never bought into the radical separation of humans and animals in the first place and who have to come to a different conclusion than the eqbas regarding how to live responsibly and maximize flourishing for all ecological actants. This assumption of the sameness of all knowers, I contend, stems from a dualistic conception of self and other wherein the latter can only be valued insofar as it can be incorporated into the former. Furthermore, in leaning on the technofix as the only solution to the disastrous rapaciousness of tecnocapitalism, the series both anticipates and reifies the problematic naivety of the ecomodernist faith in technological salvation. As VInt puts it, “the harsh vision of ecological justice in the Wess’har war series suggests that this deep-ecology-like perspective that refuses to recognize and work through difference is unlikely to lead to a better future, but instead will reproduce something as grim as the one the singular human-animal boundary has produced” (Vint 2010, 157).

Respect/use dualism

Another problematic philosophical position that the eqbas take, built again on the dualism of subject/object and the monological foundation of 'or' rather than 'and,' is the mandate for universal veganism (Plumwood 2000b, 293). As Plumwood points out, any philosophy grounded on the conviction that no fleshy bodies can ever be consumed places an "intense emphasis on the need for a boundary between what counts and what does not" (2002, 149). This insistence on an absolute boundary risks reifying a "respect-use dualism" (ibid.) that divides the world into subjects who must never be used and objects that may be used ruthlessly and without compunction. Plumwood diagnoses respect-use dualism as a symptom of Western alienation from the rest of the living world, operating via a kind of horror at the thought the edibility of the human body (a horror of which the cannibal stories in chapter one all partake) (2008, 324): "in the human supremacist culture of the West there is a strong effort to deny that we humans are also animals positioned in the food chain" (2000a, 146). Plumwood has first hand experience of what it is like to be part of the food chain. In her powerful essay "Being Prey" (2000a), she recounts her near-fatal crocodile attack, which she experienced at the time as "a shocking reduction" to the status of mere meat. "This can't be happening to me, I'm a human being. I am more than just food!" (135), she recalls thinking as the "great saurian" seizes and "death-rolls" her. She concludes that while not only humans but all creatures can make the claim to be more than "just food," we are nevertheless all food for someone else eventually, even if only for worms and microorganisms (2000a): "Through death," Plumwood writes, "we nourish others" (2008, 324).

The notion that all bodies can be understood as simultaneously food and more-than-food is acknowledged within the *Wess'har* hexology, but only in briefly and in passing. Typically for the narrative (Vint 2010, 153), this point is raised by an alien character in order to deflate human exceptionalism: “Aras had never understood why some humans were repelled by the idea of their bodies being devoured by creatures like rockvelvets. What did they think decomposition was? Decay and predation were both consumption, returning the components of life to the great cycle” (Traviss 2005, 88). This passage indicates that the wess'har mandate for universal veganism for those moral agents (if not moral patients) for whom such a diet is biologically possible, is not understood (by them) as an attempt to remove themselves from the food chain or set themselves above it. But this idea is never really developed—across some 3000 pages and six novels, this is one of the only overt acknowledgements that all creaturely bodies are fundamentally edible. Thus, I argue, although it works to problematize and interrogate the ethical boundary policing that stems from human exceptionalism, the *Wess'har Wars* hexology to some extent sanctions a dualism of ‘food’/‘morally considerable.’

Savagery and civility in O'Guilín's Bone World

Peadar O'Guilín's *Bone World* trilogy (2007-2014) is an excellent foil for the universal veganism and attendant respect-use dualism explored in Traviss' *Wess'har Wars*.

Critically well-received despite its “unsettling” subject matter,³⁶ *Bone World*

³⁶ The trilogy's first instalment, *The Inferior* (2007, London, Corgi), garnered positive reviews and was published internationally in seven different languages. *The Deserter* (2011, London, David Flicking) came out to mixed reviews and was mostly ignored. The final volume in the trilogy, *The Volunteer* (2014), was self-published.

problematizes the notion of respect-use dualism through its depiction of a world where anyone and everyone is meat for everyone else. Though the books are aimed at a younger audience than those of the meticulous mass-market veteran Traviss, O'Guilín's trilogy successfully and succinctly effects a nuanced exploration of edibility, otherness and response-ability. The trilogy's first instalment, *The Inferior* (2007), opens on a stone age tribe in a mysterious crumbling city, forced to hunt alien 'beasts' in a brutal struggle for survival in a world where all plant matter is apparently inedible. This human 'Tribe' is structured along a strict patriarchal division of power and labour, wherein men are 'natural' hunters and leaders and women pound moss and smoke meat for their husbands—an arrangement reminiscent of longstanding and influential 'man the hunter' discourses in paleoanthropology (Noske 1989; Haraway 1989). In this respect, *The Inferior* evokes Kingsbury's *Courtship Rite* (see p52, n13), which is also set on a cannibal planet where all plant life is poisonous, all human life is patriarchal and survival is only for the fittest. However, whereas Kingsbury "rigs" his cannibal society to establish and naturalize his misogynistic libertarian political agenda (Clute 1982), O'Guilín makes 'rigging the game' an integral part of the story itself. The stone-age Tribe of beast-hunting men and moss-gathering women do not represent any kind of natural atavism—they are in fact a carefully managed population of posthuman prisoners and their red-in-tooth-and-claw planet where only the most brutal can survive is a theme park designed and operated by a technocratic elite ruling from a vast space habitat above.

Every member of the Tribe, including stuttering protagonist Stopmouth and his evil-genius elder brother Wallbreaker, has been genetically and nano-technologically

modified by their unseen overlords to survive the peculiar demands of their prison planet. Their metabolisms have been tweaked so that they (unlike ordinary humans) are able to survive as true carnivores, eating almost nothing except meat. To endure on a planet with no edible plants, the Tribe practices funerary cannibalism and hunts various types of fearsome ‘beasts’—actually several different alien species, all captured, stripped of their technology and stranded on the prison planet known as ‘Bone World.’³⁷ All the large motile species on Bone World have been altered on a cellular level so that the flesh of each species is mutually edible to every other (2014, 236). All the Tribes of Bone World, human and nonhuman alike, are imprisoned as unwilling and unsuspecting participants in a media bloodsport of unimaginable scale, consumed by billions of eager human fans watching from above. The architects of this bloody theme park are oligarchs who live overhead in a vast orbital structure called “the Roof,” a self-replicating but now-decaying technological marvel which encloses the entire Bone World planet “as a skull does the brain” (2011, 34). Many billions live in the Roof, completely unknown to the Tribes below. The ruling Roofdwellers are like puppet masters or reality television producers, orchestrating and capturing the bloody action on the planet’s surface and broadcasting it to the enormous population in Roof above—all of whom are strict vegetarians who construct their self-styled ‘civilized’ identity out of and above the ‘savage’ carno-cannibalism of the Tribes (human and alien) they ruthlessly exploit. The narrative opens with a “civilized” woman, Indrani, literally falling from the sky and into the ‘ManTribe’s’ brutal and cloistered world, sparking a clash of dietary philosophies that leads Stopmouth and Indrani on a quest to dismantle the

³⁷ ‘Bone World’ without italics refers to the fictional planet; ‘*Bone World*’ in italics refers to the trilogy of novels named after and set upon the fictional planet.

Roofdwellers' toxic culture of repression and violence and build a more equitable and livable world for all of Bone World's various species.

“How and why, some people are judged ‘inferior’” is a central theme of the series according to the author (O’Guilín & Swede, 2007). O’Guilin is particularly concerned with how eating patterns can be used to prop up social hierarchies. As he points out, “[a] few unusual carnivorous habits” can be all it takes “for one human being to look down his [sic] nose at another” (ibid.). In interviews, O’Guilin decries the hypocrisy at work in condemning another culture’s eating habits as “savage” when one’s own “civilized” culture has such a brutal track record with other animals and wonders “whether the fact that a savage’s dinner can talk back to him [sic] makes him [sic] any less noble than we are” (O’Guilin & Scalzi 2012). The *Bone World* trilogy is the result, a “laboratory universe” (O’Guilín & Swede 2007, O’Guilín & Scalzi 2012) within which to explore the role played by diet in delineating savagery from civility. In contrast to Traviss’ *Wess’har Wars*, which focused on deflating human exceptionalism via the encounter with a vastly powerful alien species of militarized vegans, *Bone World* is centrally concerned with intra-human hierarchy. The hypocritical disdain of the “civilized” Roofdwellers—for whom no flesh can ever be edible—for the carnivorous “savages” of the world below is continually lampooned and critiqued within O’Guilín’s narrative. The Roofdwellers’ contempt for flesh eating is shown to be motivated by hierarchical in-group thinking (civilized/savage) rather than any particular concern for the wellbeing of those who are eaten. “Only savages eat flesh,” one Roofdweller explains: “Civilized beings eat other things made from plants” (2007, 305). However, despite occasional lip service to the

suffering of other animals (2007, 306), the vegetarianism of the Roofdwellers is primarily an artefact of their ideology of human-nonhuman hierarchy. As in DeFord's 'Season of the Babies' (see chapter one), 'beasts' are unclean and debased and so are those who consume them. This is demonstrated by the antipathy of the Roofdwellers toward Stopmouth and Indrani, once the intrepid pair have found their way off-planet to the giant orbital habitat of vegetarians above: "the savage had ruined one civilized woman already, turing her into a disgusting meat-eater no better than himself. 'He's little more than a beast!'" (2011, 58) The Roofdwellers' disgust at meat consumption is, of course, a perspective entirely at odds with their eager media consumption of the violent and perpetual bloodsport their ruling caste has carefully created. Not only have the Roof-dwelling elite altered the biochemistry of their prisoners to allow them to eat one another, they have also banned any edible plants from the planets surface—"just for the pleasure of watching you bleed," as Indrani tells Stopmouth. (2011, 35). As Stopmouth wryly notes, "for a people that hated cannibalism so much, the Roofdwellers certainly went to enormous lengths to make it possible" (2011, 279).

The hypocritical attitude of the Roof civilization towards the 'savages' they have imprisoned on Bone World below clearly serves as an indictment of western European colonialism and its attendant hierarchical dualism of civility/savagery. However, the dominant racialization of civilized and savage is reversed in the *Bone World* trilogy: the savage cannibals of the Tribe are light-skinned and the sneering civilized hypocrites of

the Roof dark-skinned.³⁸ The second novel reveals that the pale cannibal Tribe of surface dwellers are descendants of the ‘Deserters’—humans from prosperous (and predominantly white) nations who ‘deserted’ an ecologically devastated Earth thousands of years ago. These Deserters, continuing the pattern of “centuries of their cruel civilization” (2014, 206), used up the planet’s last remaining resources in order to build interstellar spacecraft to escape the wasteland they had created, leaving the rest of Earth’s population stranded on a barren world (2014, 52). However, although the Deserters “abandoned the poor to what they thought was certain death,” their past would eventually catch up with them—literally (2014, 145). Earth’s remaining humans, predominantly people of colour, somehow (O’Guilín is vague here) built ships of their own and escaped the dying planet. Eventually these ships overtook the hibernation spacecraft of some of the original Deserters, capturing their sleeping human cargo (2014, 311). The former left-behinds imprisoned the Deserters on a poisonous exoplanet and built a vast orbital habitat from which to observe their unending punishment: to be stripped of all complex material technology and forced to compete for survival in an unending, bloody, eat-or-be-eaten circus. Perhaps as a point of contrast with the voracious ‘Deserters,’ whose greed devoured ‘Old Earth,’ the Roofdwellers eventually came to adopt a stance of universal vegetarianism, wherein nothing but plant matter can ever be ontologized as edible—at least not by anyone ‘civilized.’ The Deserters—a term that has been inherited by Stopmouth and Wallbreaker’s light-skinned Tribe—are thus made abject by their continuing (albeit forced) consumption of flesh.

³⁸ I am refraining from mapping onto fictional cultural groups what would, in the *Bone World* universe, be anachronistic racial categories like white or South Asian (these being the in-universe progenitors of *Bone World*’s cultural groups, rather than identity terms that would be meaningful to those fictional cultural groups themselves).

In *Bone World*, pale-skinned people are kept in a state of enforced stone-age savagery, while everyone else sits back in civilized comfort to enjoy the show. The trilogy thus falls within the tradition of race reversal SF, a trope that risks appropriating the trauma experienced by people of colour under colonial and white supremacist regimes and subsuming it within a narrative that centres whiteness (Berlatsky 2014). In offering “agents of privilege an invitation to occupy the position of victims,” race reversal SF all too often absolves white people of guilt while investing in them “the moral authority of retributive agency” (Higgins 2016, 51).³⁹ O’Guilin seems aware of these dynamics and takes care to problematize any reading of *Bone World* as advocating this kind of white-centred “imperial masochism” (ibid.). Although the Roofdwellers are apparently all vegetarian people of colour, the populace is far from homogenous. Instead, the enormous Roof—bigger than the planet it encloses, containing “cities too big to walk across in a human lifetime” (34) and untold billions of human souls—is home to a dizzying array of cultures, languages, religions, classes and political groups. Many Roofdwellers are oppressed minorities themselves—some even oppose the imprisonment of the Deserters on the planet below. O’Guilin is also careful to stress that his Roofdwelling civilization should not be understood as analogous to any Earthly ethnicity or nationality. When one Roofdwelling character ruminates on “the dark skin of his Dravidian ancestry,” O’Guilin ensures that same character spouts a monologue

³⁹ At its its worst, race-reversal SF can reinforce “the most horrific racial stereotypes imaginable” (Heer 2014: np). In Heinlein’s *Farnham’s Freehold* (1964) for example, a white family wakes up to find themselves 2000 years in the future, where White America has been enslaved by Black cannibals. A contemporary example of ill-advised race-reversal SF can be found in Victoria Foyt’s *Save the Pearls: Revealing Eden* (2012). For more critical and nuanced examples of the race reversal trope, see the work of Malorie Blackman (*Noughts & Crosses*) and Bernadine Evaristo (*Blonde Roots*).

explicitly denying any substantive continuity between himself and his South Asian progenitors:

Thousands of real years and light years separate them from us and all the while we've been changing. They would hate us. We're as far from them as Stopmouth is from... the ancient Romans. Our languages are different, our customs are different and as for our religions... our ancestors wouldn't recognize anything about us." (2011, 164, ellipsis in original)

By making the Roofdwellers culturally and ideologically diverse and emphasizing their distinctness from any Earthly ethnicity, O'Guilin attempts to sidestep the fraught territory of race-reversal SF wherein people of colour are positioned as the "real" agents of oppression and white characters enjoy the sympathy and righteous indignation of victimization. While readers may disagree as to how successful O'Guilin is in avoiding the pitfalls of white-authored race-reversal SF, the trilogy nevertheless makes the point that the hellish inequalities of Bone World are borne from the environmental racism and ethno-nationally balkanized destruction of our home planet: the greedy have been punished and the no-longer meek have inherited the new world (if not the original Earth).

Eating your neighbours

Whereas "eating your neighbours" is unthinkable for Traviss' wess'har (2008, 282), eating their neighbours is a non-negotiable condition of survival for all inhabitants of O'Guilin's Bone World. What is unthinkable is an ontology of respect-use dualism, cleaving as it does the morally considerable from that which is consumed as food. Dead

Tribe members are lovingly eaten and old and infirm Tribe members are routinely “volunteered” to alien tribes in return for their own unwanted members in “a simple exchange of loved ones for food” (2007, 27). Moreover, the ethical subjectivity of the alien “beasts” that the Tribe hunts, kills and eats is never denied, despite the ambivalent animalization that the moniker suggests. Numerous passages throughout the trilogy describe in uncomfortable detail the carno-cannibal appetites of the Tribe humans, who have learned over generations of bloody conflict to savour “the thrill of breaking through bone to the sweetest of marrows; the properties of various organs that differed subtly from creature to creature,” including other humans (2014, 130). A clearer articulation of the insight that ‘kin’ and ‘food’ are not self-evidently exclusionary categories could hardly be imagined (Villagra, 2012).

Communicative interspecies ethics

Although the Tribe understands all flesh (regardless of species) to be meat sooner or later, the trilogy centres on Stopmouth coming to question and overthrow the status quo of perpetual, media-orchestrated bloodshed. This occurs not through his exposure to “civilized” Indrani’s flawed vegetarian counterdiscourse, but as a result his own experiences with the alien ‘beasts’ he must hunt and kill. The importance of communication is paramount here—in *Bone World*, it is only through some kind of communication that empathy between species becomes possible. This communication need not be linguistic—the language of each species is mutually incomprehensible to all others, although rudimentary understanding of certain words (like “flesh”) is possible between tribes who share a vocalized language (other tribes communicate through

olfactory or telepathic means). Sensitive Stopmouth, himself a liminal member of the human Tribe due to his stutter, finds himself confronted by the inscrutable agency of the other through his careful observation of his alien prey. Like Derrida arrested by a moment of sustained eye contact with his cat (1991b), Stopmouth comes to the realization that “one of the creatures gazed back, studying him in return perhaps” (2007, 39). Later, the young hunter observes a group of alien juveniles playing “a game. It must be. Not so unlike us, after all” (2007, 56). Stopmouth sees aspects of himself and his family in the aliens he watches and who in turn watch him back: “Was that your brother we killed?” he wonders after one encounter; “Are you the Bloodskin version of me?” (2007, 73). In yet another scene, happening upon a slumbering pair of aliens, Stopmouth is reminded of his lover: “the furred beasts slept, intertwined. They made Stopmouth think of Indrani for some reason” (2007, 153). Bird Rose argues that it is though “opening one’s self to others as communicative beings [that] one places one’s self in a position of being able to experience communication” (2013, 97). Stopmouth needs no special powers of intellect to perceive what other members of his Tribe apparently do not; indeed, perhaps it is the ‘shortcoming’ of his stutter that encourages Stopmouth to learn to ‘listen’ in the active tense and in multiple registers and thus perceive the affective commonalities between himself and the ‘Beasts’ he hunts. O’Guilín seems to be suggesting that the capacities of terrestrial nonhuman animals, like those of alien ‘beasts,’ “are at least in part the products of our communications with them, of social exchanges rather than a priori qualities” (Vint 2008a, 318). Against an ontology of hyperseparation that denies humans-nonhuman continuity and backgrounds listening (and more broadly, paying attention) over speaking (Rose 2013, 102;

Plumwood 2002), stuttering outcast Stopmouth adopts a posture of attentive listening (Donovan 2016) that does not foreclose the subjectivity of the more-than-human. In doing so, the narrative approaches subjectivity not as a preexisting capacity but as an emergent property of various intra-actions with agencies of alterity, foregrounding the communicative encounter as an agential entanglement that brings forth observer and observed. While Stopmouth's attentiveness to the mindedness of the Other is borne of relations of material use, he remains open to ethical concern for the bodies he must kill and eat, approaching them not as dead material "but as a living presence, one located in a particular, knowable environment and ... capable of dialogical communication" (Donovan 2016, 11).

Stopmouth's burgeoning empathy for the beasts he hunts and kills stems from his recognition of commonalities and similarities between them and him, theirs and his. However, this recognition of similarity does not entail the downplaying of difference or the containment of the other within the self. As Plumwood insists, "the underlying metaphysical choice of Same/Different is a false dichotomy: both continuity with and difference from self can be sources of value and consideration and both usually play a role" (2002, 200). Subsequently, Stopmouth's ambivalent encounters with alien 'beasts' enact an ethic of radical alterity that does not hinge on the recognition of similitude but rather seeks "to attend to heterogeneities where reductive homogeneities have been posited" (Calarco 2016, 37; Levinas 1969). Unlike the eqbas of the *Wess'Har Wars* hexology, who drown in Plumwood's "Ocean of Continuity" in an attempt to avoid the "Desert of Difference" (1994, 3), the characters of *Bone World* never fall into the

assumption that all knowers are the same. Even when a universal translator device (the pinnacle of Roof technology) makes linguistic communication possible between alien species, O'Guilín is careful to stress the radical alterity of any Other, even one of the same species. Explaining the 'Talker' contraption to an incredulous Stopmouth, exiled Roofdweller Indrani warns that cross-cultural translations of even basic concepts can only ever be approximations:

Yes, it's a miracle but it's a dangerous miracle. It makes you think you understand beasts and you never do. When it comes down to it, you can't even understand your own species. (2007, 258)

Indrani is not positing an unbridgeable gulf between humans and other species, or between the self and other; rather, her comments stress that any form of understanding between differentially materialized actants is necessarily a negotiation, an estranging encounter that leaves a mark.⁴⁰ *Bone World* thus highlights how ethics "arises precisely as a response to the Other, from a source radically different from [the self] that calls into question [one's] typical ways of thinking and living" (Calarco 2015 32). Stopmouth's alien encounters, I argue, "have an uncanny way of sticking with [him], getting under [his] skin and slowly reworking [his] subjectivity and existence from within" (Calarco 2015, 32; Levinas 1969). In this sense *Bone World* articulates a "creaturely ethics" (Pick 2011) or an "ethic of care" (Donovan 2016) that does not seek to subsume alterity beneath similitude via the fulfilment of anthropocentric preliminary criteria, but rather recognizes "the materiality of and vulnerability of all living bodies" as a call to responsibility (Pick 2011, 193). But even so, the political and material organization of planetary

⁴⁰ I am indebted to J. Keeping for this point.

life ensures that Stopmouth's hunger for flesh persists: "Now he couldn't even eat without thinking of the pain that had brought food to his lips. Even so, his mouth watered" (2007, 379). The affinities between Stopmouth's empathic killing and Plumwood's ecological embodiment can only be pushed so far—Bone World is no natural ecosystem, but a gladiatorial arena of carefully managed posthuman prisoners pitted against one another for the the spectatorial pleasures of the Roofdwellers above. Nevertheless, through the sympathetic portrayal of Stopmouth and the demonstrable hypocrisy of the meat-rejecting yet voyeuristically bloodthirsty Roof inhabitants, the narrative works to problematize the apparent contradiction between Stopmouth's empathy and hunger, forcing the reader to confront an ontology of hyperseparation that backgrounds the nonhuman world and creates a false dichotomy in which food can only ever be abject and respect precludes use.

Lifeboat ethics

O'Guilín has repeatedly described the trilogy as a "laboratory universe," built to explore questions of diet and ethics. One such thought experiment unfolds in the second novel, as Stopmouth and Indrani, trapped in the crumbling Roof, are forced forced to choose between helping other humans escape or saving themselves and their daughter. Stopmouth and Indrani's terrible choice echoes, but ultimately inverts, the infamous "lifeboat" scenario, a crude thought experiment deployed by utilitarian and deontological animal ethicists like Singer (1975, 87) and Regan (1982, 32) to "force the clarification of intuitions about the relative value of human and animal life" (Bailey 2009, 129). The lifeboat situation compares and ranks difference by "drawing lines around various

categories of living beings” in order to uncover a universalizable moral equation, “indirectly reinforc[ing] assumptions that are not only anthropocentric, but also tied to racist, sexist and ethnocentric stereotypes” (Bailey 2009, 143, 129).⁴¹ Initially, Stopmouth justifies the pair’s decision to save each other rather than attempt to save a group of strangers through just such a lifeboat scenario of human-animal hierarchy, “These others were only beasts, their skins for clothing, their skulls for plates” (2011, 381). However, having spent much of the previous two novels questioning this ranking of human over nonhuman, Stopmouth almost instantly recants this ontology of hierarchical dualism, “They are not beasts,” he insists—not morally excludable bodies always-already available for instrumentalization (2011, 382). Indrani agrees, but insists that other humans struggling in lifeboat Roof “are not my child. They are not my man” (ibid), articulating a creaturely ethics in which rights do not automatically trump obligations (Pick 2011, 193). As Haraway points out in *When Species Meet*, “proceed[ing] as if calculation solved the dilemma” (2008, 87) usually proves inadequate. Put another way, “we will never have moral theory that functions as precisely as a pocket calculator” (Bailey 2009, 144). Affective, relational ties and the response-abilities that accompany them cannot easily be overridden by any abstract moral injunction, as Stopmouth and Indrani find. This subversion of overarching rule-based morality is central to O’Guilín’s project: like the blanket ethical condemnation of cannibalism that *Bone World* works so hard to complicate, the lifeboat-Roof scenario

⁴¹ “Ecological oligarch” Garret Hardin (Plumwood’s term, 2002, 64), for example, deploys the cold equations of the lifeboat scenario to lend credibility to ethnonationalist and anti-immigrant ideologies (See Hardin, 1974). Within SF, the lifeboat scenario has most famously been deployed in the short story ‘The Cold Equations’ by Tom Godwin, first published in *Astounding Magazine* in 1954, in which a young female stowaway must be thrown off of a spaceship in order to ensure the survival of the rest of the crew.

demonstrates how quickly neat ethical rules tend to fall apart in context. Like LePan's *Animals* (a fictional materialization of the argument from marginal cases) and Travis's *Wess'har Wars* (a space opera built on the principles of deep ecology and universal veganism), *Bone World* employs the tools of narrative storytelling to flesh out and complicate established concepts in academic moral philosophy.

Human cattle: redux

As the trilogy progresses and the Roof society begins to collapse, the careful biopolitical management of alien populations breaks down and nearly all alien 'beasts' upon the surface of Bone World become extinct. When the superstructure of the Roof itself finally crumbles, the few survivors (known as Ship People or Roof People) find themselves stranded on a prison planet with no substantive sources of nutrition except for a few contraband crop seeds, wholly at the mercy of the savage surface-dwelling human Tribe they despise. The Tribe itself splits into two factions, the first, led by protagonists Stopmouth and Indrani, advocates a gender-egalitarian collaboration between Roofdwellers and Tribe members for the mutual benefit of both; the second, led by Stopmouth's brother and the series' main antagonist, Wallbreaker, sees the Roof refugees as subhuman beasts. The struggle between these two incommensurate visions of planetary life provides the narrative energy for the trilogy's final instalment and completes the story arc of the series.

Although Wallbreaker's "savage" splinter-Tribe and the "civilized" Roof refugees despise each other, both share an ideological foundation of human supremacy and a similar

propensity for hierarchy and violent instrumentalization. The culture of the Roof is built on a policy of rigid species hierarchy in which genocidal expansionism is not only permitted, but mandated. "The people here believe it is human destiny to control everything," Indrani explains (2014, 239), whether that destiny is expressed as a secular mission "to defend ourselves and Old Earth against aliens" or a "sacred duty to rid the universe of demons" (2011, 117). The ruling Roofdwellers scour the universe for alien species, "hunt[ing] them out across the vast emptiness that lies between worlds" (2011, 117) and destroying their homeworlds in order to enslave the survivors in a perpetual bloody spectacle upon Bone World's surface—all in an effort to control and contain the nonhuman agency that such "beasts" enact. For the Roofdwellers, controlling the universe through exterminating or instrumentalizing all nonhuman life is no less than the teleology of human destiny. Villainous chief Wallbreaker operates within a similar monological rationalism of hyperseparation (Plumwood 2002), albeit on a 'merely' planetary rather than galactic scale: "We are not like the other beasts that feed us so well. This is our world!" he proclaims (2014, 80). 'Savages' and 'civilized' alike, it seems, can share a foundation of genocidal, teleological anthropocentrism, a belief that only human (however that category is defined) lives really matter and that it is human destiny to rule over other forms of life. The anthropocentrism of the Roofdwellers interlocks with their speciesist hatred of alien "beasts," and their racist hatred of those "savages" who consume their flesh. The anthropocentrism of Wallbreaker's Tribe feeds his conviction that the known world belongs to humanity alone, his racist insistence that the Roofdwellers are not really human at all and his regime of patriarchal violence.

It is through antagonist Wallbreaker that *Bone World's* most pointed critique of this shared dualistic moral ontology comes to the fore. To the villainous chief, whose world is structured upon the hierarchical dualism of Tribe/beast, only his original, patriarchal tribe of light-skinned cannibal hunters is morally considerable—everyone else, Roof humans included, simply do not count as “Tribe.” Wallbreaker denies the humanity of the Roof people even as he fetishes them sexually, demonstrating again that “human” is a social category deployed to demarcate those who matter from those who matter less, or not at all. “We will dominate your dark-skinned weaklings, who probably aren’t even human anyway,” Wallbreaker proclaims (2014, 225), reasserting the old racial hierarchies that set this whole brutal cycle in motion. He promises his most loyal followers that each will “get his pick of the Ship Brides” (2014, 231) in a chilling recapitulation of the racialized sexual violence of old Earth. Disdaining the vegetarian diet of the Roofdwellers and unconvinced that unfamiliar items such as “rice” and “lentils” are fit for human consumption, Wallbreaker plans to “show the Ship People they aren’t the only ones who know how to farm” (2014, 247):

Humans cannot live on rice. I know that. But Roof People can. They will have all the world to grow it... They will feed to their hearts content and live long lives without fear. And then, painlessly—I promise you!—painlessly, they will give their flesh to us, the true humans.” (2014, 263)

Wallbreaker plans to enslave the Roof refugees as farm labourers, growing Earth crops which will be used to fatten them up for slaughter and consumption by his tribe of “true humans,” for whom a vegetarian diet would be unthinkable.

At the narrative climax of the trilogy, then, the titular planet of the *Bone World* series teeters on the brink of becoming a bona fide human cattle dystopia, akin to those analyzed in the previous chapter. However, O’Guilín is not about to conclude his SF “laboratory universe” with such a dismal experimental result. Instead, Stopmouth’s coalition of humans (‘savages’ and Roof refugees) join forces with one of the last remaining alien species, the ‘fourleggers,’ to form a new “hybrid tribe” (2014, 193). Communication barriers between human groups are bridged and humans and fourleggers find a mutual framework for communication in a sign language creole spontaneously invented by the children of this new hybrid tribe. Thus, Stopmouth’s multiracial, multicultural and multi-species coalition is able to defeat Wallbreaker’s racist/sexist/speciesist faction and secure a just and liveable future for the remaining inhabitants of Bone World.

Conclusion: Food and respect/use dualism

In this chapter, I have engaged popular print SF to consider the pitfalls of moral extensionist theories that seek to extend the privileges of subjectivity without challenging the underlying dualism of subject/object that makes such extension thinkable. I have argued that the narrative of *Bone World* affirms an ethics predicated upon the shared vulnerability of and response-abilities towards, corporeal bodies. In these closing remarks, I want return to Traviss’ *Wess’ har Wars* in an attempt to flesh out the normative applications of respect-use dualism within carnocapitalist culture. As discussed earlier, in equating availability as food with moral exclusion and insisting that “nothing that is morally considerable can ever be...ontologized as edible” (Plumwood

2002, 156), respect-use dualism “is forced to insist on a substantial outclass of living beings” (ibid, 155) whose lives and deaths, although necessary to sustain human life, cannot matter (at least, not if we are to remain ethically pure). Hence, one crucial facet of this dualist matrix is the that food is positioned as abject. This abjection, born of respect-use dualism, sanctions the entrapment of ‘food’ animals’ within economic relations of property that position animals a priori as raw material or “deaded life” (Wadiwel 2015; Stanescu 2013). Incarcerated in an animal industrial complex built on the ruthless exploitation of their “metabolic labor,” respect-use dualism reduces animals unlucky enough to be positioned as ‘food’ to the debased status of always-already meat (Beldo 2017; Vint, 2010). The *Wess’har Wars* series shows this abjection of the edible in action, vividly illustrating how respect-use dualism sanctions human practices of domination and instrumentalization towards other beings. In the first novel, the scientists under Shan’s command break local ordinance to collect specimen samples from the alien planet on which they have landed. One of these specimens is a juvenile ‘bezeri,’ a technologically-adept aquatic species with a rich cultural history who communicate with each other through a complex visual language of photoluminescence.⁴² Unfamiliar with bezeri biology, the scientists incorrectly assume the “specimen” is dead and proceed to vivisect the creature. The scene foregrounds the instrumentalizing drive of scientific rationalism, with its conception of world and everyone else in it as “standing reserve” for human use (Vint 2010). However, underlying this critique of technoscientific hubris is an astute acknowledgment of the

⁴² It is not until much later in the series that Traviss reveals that the bezeri are no innocents, possessing a dark past of virulent xenophobia that once lead them to hunt other species to death in the name of ethnic cleansing: in effect, “nazi squid” (Traviss 2006, 42)”

ways in which respect-use dualism operates as a function of culinary culture. While other alien species in the novel are said to resemble badgers, meerkats and spiders, the unlucky bezeri bear an unfortunate resemblance to Earthly squid—as one wess’har character succinctly puts it, “the bezeri remind you of an item on the menu” (2004b, 198). Routinely targeted for vivisection here on Earth due to their evident intelligence, cephalopods nevertheless remain ‘food’ even for those who experiment upon them: biologist Martin Wells (H. G. Wells’ grandson), for example, sees no conflict of interest in his statement that “I work on octopus and squid and things like that, when I’m not eating them” (who could imagine Jane Goodall making a similar claim?) (Tiffin 2014, 159). This insight—that items on the menu are often perceived as always-already violable bodies—is borne out by the behaviour of the human scientists who prepare the juvenile bezeri for dissection, who comment on the specimens resemblance to “calamari” (2004a, 201) and joke about “serving it with a nice *beurre manié* sauce” (2004a, 202). The bezeri look like squid and squid are killed and dismembered for food, so the bezeri must also be bodies that do not matter—bodies that may be violently instrumentalized without compunction in service of human interests. Later, as Shan returns the baby bezeri to creature’s family, she reflects that “there was something undignified and desperately sad about scraping the little corpse together like spilled food” (2004a, 206). Traviss’ simultaneous conflation and juxtaposition of “little corpse” with “spilled food” emphasizes what ecofeminist (and later, critical animal) thinkers have long stressed: that for animals unfortunate to be ontologized as food within a carnocapitalist culture of human supremacy, ethical relevance is foreclosed a priori; they are always-already killable, are always-already meat.

As Plumwood has forcefully argued, replacing untrammelled carnism with compulsory universal veganism is an untenable solution to task of ethically negotiating heterospecies coexistence: “rather, it is a matter of trying to understand what kinds of care, regard and responsiveness might be possible for us in relationship to the natural world” (2002, 165). What we need instead is need to “acknowledge the ethical and epistemological centrality of difference rather than subsuming difference within a totalizing vision or salvational project” (Cheney 1994, 164). Plumwood stresses that we must “recognize ourselves in mutual, ecological terms, as part of the food chain, eaten as well as eater,” arguing that although “we cannot give up using one another... we can give up use/respect dualism, which means working towards ethical, respectful and highly constrained forms of use” (2002, 159). Part of this project of ethical multispecies coexistence entails a critical skepticism regarding the very notion of the subject, even as any contemporary anti-anthropocentric ethic must recognize that subject-centred moral discourse operates as a crucial intervention against the status quo of carnocapitalist culture. In the next chapter, I aim to further complicate the interdependent assumptions that being a subject is a precondition for moral relevance and that ‘subjectivity’ is a stable ontological construct in the first place. I will do so through an examination of disembodied meat as a semi-living form of corporeal agency that shatters received notions of subject-object dualism.

4. Disembodied Meat: Storying Semi-living Subjectivities

Twentieth century commodity capitalism has worked hard to sever the conceptual connection between meat and animal, absenting the referent of the butchered nonhuman from the sanitary bundles of shrink-wrapped flesh on the supermarket shelf (Adams 1990; Vialles 1990). Twenty-first century developments in “cellular agriculture” promise to literalize this disconnection by adapting established biomedical tissue culture techniques to food production in an effort to completely decouple meat from any living animal (Stephens 2013; Datar, Kim & d’Origny 2016, 129). By cultivating animal flesh *in vitro*, outside of the organism in technologically mediated environments, cellular agriculture aims to eliminate the waste (and avoid the contested ethics) of ‘growing’ meat ‘on the hoof’ by growing it in the laboratory bioreactor instead. The promissory narrative of contemporary *in vitro* meat (IVM) thus offers carnist consumers a technofix solution to the ethical and ecological problems of the animal industrial complex: with IVM, discerning consumers can have their steak and eat it too, without the messy business of animal incarceration and slaughter or environmental degradation, or the supposedly unappealing deprivation of a vegan diet.

It is not my intention in this chapter to assess the veracity of the ethical:claims of *in vitro* meat, nor to argue for or against the pursuit of this technology as part of critical ecofeminist or vegan praxis committed to ethical multispecies co-existence—others have covered this ground (Twine 2010, 2013; Miller 2012; Cole & Morgan 2013; Twine & Stephens 2013; Stephens 2013; Sinclair 2016). Rather, I want to flesh out the

technology's implications through an engagement with science fiction, a literary mode constituting not so much a "prehistory of victimless meat" (Guy 2013: no pagination) as an imaginative discourse emerging in intra-action with the nascent technology.⁴³

Diffractionally reading in vitro meat discourses through SF reveals how the entire concept of 'real artificial meat' troubles the notion of subjectivity—both the subjectivity of the human consumer within a carnophallogocentric matrix and the very idea of subjectivity through the 'semi-living' agential corporeality of in vitro meat itself (McHugh 2010, 181; Miller, 2012; Catts & Zurr, 2006; 2013; Dixon 2009). Through this strategy of remaining attentive to meat's role in human subjectification and rejecting subject-object dualism as ontologically untenable, I express a material ecofeminist openness to ethical intra-actions with liminal forms of life has beyond the animal, the organism and even the animate.

Technologies of living substance

Over the first decade of the twentieth century, new and existing tissue culture techniques were consolidated within an emergent body of shared scientific literature.

Cells, it seemed, had attained an unexpected autonomy from the holistic body

(Landecker 2007, 67). The technology came to widespread public prominence in 1912,

⁴³While a complete bibliography of IVM in SF is beyond the scope of this chapter, the following are a few notable early examples: "synthetic meat" in *Exiles of the Moon* (1931) by Nat Schrachner and Leo Zatt; synthetic food and "meats grown in large test tubes" in *Unto Us a Child is Born* (1933) by David Keller; "Syntho-steaks" in *Farmer in the Sky* (1950) by Robert Heinlein; "psuedoflesh" in *Whipping Star* (1969) by Frank Herbert; and "animal tissue-culture vats" in *Uller Uprising* (1953[1983]) and "carniculture plants" in *Four-Day Planet* (1961) by H. Beam Piper. Synthetic human meat also features prominently in the genre: "The Food of the Gods" (1964) by Arthur C. Clark, *Stars in my Pocket like Grains of Sand* (1984) by Samuel Delany and *The State of the Art* (1991) by Iain M. Banks all feature tissue-cultured human meat. *The State of the Art* (a time travel tale) even features a cannibalistic feast of meat grown from the power figures of 1977:

Stewed Idi Amin or General Pinochet Con Carne ... General Stroessner Meat Balls and Richard Nixon Burgers ... Ferdinand Marcos Saute and Shah of Iran Kebabs ... Fricasseed Kim Il Sung, Boiled General Videla and Ian Smith in Black Beans Sauce... (38).

when Franco-American surgeon Alexis Carrel demonstrated not only that cells could survive outside of the body, but that they could continue doing so in perpetuity—a “permanent life” of cellular immortality (Landecker 2007, 16). The Nobel laureate successfully sustained a pulsing sliver of avian myocardial cells in a bowl fed with nutrients, reportedly managing to keep this scrap of chicken heart tissue beating for thirty-two years (McHugh, 2010). Scientists now consider Carrel’s claim dubious and suspect that he had (inadvertently or not) been putting new cells in the culture dishes each time he fed them using an “embryo juice” made from pureed poultry tissue (Landecker 2007, 16; Skloot 2010, 61). Nevertheless, the image of an immortal chicken heart beating away for three decades in a petrie dish captured the public’s imagination (Landecker 2007, 92-7), undoubtedly helped in no small part by longstanding cultural discourses that understood the heart as the seat of life (ibid.) Temporally reconfiguring animacy through the production of functionally immortal cell lines and spatially reconfiguring living material by disembodied biological tissue (ibid. 232), Carrel’s experiments inspired no less than Winston Churchill to predict a future wherein these “technologies of living substance” (Landecker, 2007, 1) would be applied to food production. In a 1932 essay titled “Fifty Years Hence,” the future Prime Minister of the UK asserted that the agriculture of tomorrow would “escape the absurdity of growing a whole chicken in order to eat the breast or wing, by growing these parts separately under a suitable medium” (in McHugh 2010, 191).

Some eighty-six years on, the worldwide biomass of disembodied animal (including human) tissue is estimated to be in the millions of tonnes (Catts & Zurr 2006, 1)—

however, we are only marginally closer to commercially available in vitro meat (IVM) (Stephens, 2013), with only very small quantities of tissue actually being produced for human consumption.⁴⁴ In August 2013, IVM technology specifically geared towards large-scale commercial production achieved a heightened public profile, when an IVM burger was served at a London press conference (Schaefer & Savulsecu 2014; Varaska 2013). Named for its chief engineer Mark Post, but also serving as a delicious pun gesturing towards the sort of post-animal meat production system that Churchill long ago envisioned, the “Postburger” (van Mensvoort & Grievink 2014) is a costly and labour intensive piece of culinary science. To produce the burger patty, primitive muscle strands known as myotubes were grown from a biopsy of bovine myosattellite cells,⁴⁵ “exercised” through cycles of warmth and cold in a bioreactor to form hooplike fascicles and then sliced open and flattened to form single straight strands. Some 20,000 strands of fascicles were then combined to form a single beef patty (mosameat.eu; van Mensvoort & Grievink 2014, 10-11). As of yet, the Postburger has not exactly revolutionized the contemporary meatscape, partly because of its prohibitive cost—

⁴⁴ In 2003, for example, bioartists Catts and Zurr of the ‘Tissue Culture and Art Project’—a group considered to be world leaders in their field—staged their ‘Disembodied Cuisine’ exhibit in a French art gallery (Dixon, 2009, 412). The show juxtaposed a bioreactor growing disembodied amphibian tissue with an aquarium housing healthy living frogs. On the final day of the show, the “frog steaks” were served in a theatrical “nouvelle cuisine” dinner and the frogs themselves were released to a pond in the local botanical gardens (McHugh, 2010; Carruth 2013). The same artists also theatrically prepared and served in vitro meat as part of the ‘ArtMeatFlesh’ event in 2012. Framed as avant grade art exhibits and intended to provoke questions around the intersection of ethics, ontology and diet, Catts and Zurr’s work was never intended as a direct precursor to the commercial production and consumption of disembodied meat (perhaps fortunately, as two of the two of the six diners at the ‘Disembodied Cuisine’ exhibit spat their steaks out).

⁴⁵ Myosattelite cells are multipotent cells found in mature muscle tissue, responsible for muscle regeneration.

reputedly €250,000 for five ounces ounces of edible tissue (ibid 23; Varaska 2013).⁴⁶ Mark Post's Netherlands-based startup 'Mosa Meat' aims to scale-up IVM production in an effort to reduce costs and bring disembodied meat to market.⁴⁷ Other in-vitro meat startups are likewise making progress in adapting tissue culture techniques to meat production—Israeli startup SuperMeats is currently in the process of developing cultured chicken (Tobin 2016) and in 2017 secured a \$300 million deal to import in vitro meat to China (Jones 2017);⁴⁸ fellow Israeli IVM companies Future Meat Technologies and Meat the Future recently gained a significant investor in the form of US agribusiness giant Tyson foods (Jones, 2017).⁴⁹ In 2017, San Fransisco-based 'Memphis Meats' (a company backed by US billionaires Bill Gates and Richard Branson) publicly unveiled their lab grown chicken strips and duck l'orange, apparently to gastronomic approval of their taste testers (Lant, 2017).⁵⁰ The technology to produce in vitro meat certainly exists—however, given funding restrictions, economies of scale and the entrenchment of the animal industrial complex in national and transnational foodways, the question of whether or not IVM will be hitting supermarket shelves in any great quantity anytime soon remains open.

⁴⁶ Apparently Post and his team have been bankrolled by Sergey Brin, a Google co-founder with a vegan vision and very deep pockets (Post 2014, 48 in van Mensvoort and Grievink 2014)

⁴⁷ "Homepage," mosameat.com, Last modified: September 24, 2018. Accessed September 28 2018. <https://www.mosameat.com>

⁴⁸ "Homepage," supermeat.com, Last modified: February 27, 2018. Accessed September 28, 2018. <http://www.supermeat.com>

⁴⁹ "Tyson foods backs Israeli startup to grow meat in the lab," reuters.com, Last modified: May 2, 2018. Accessed September 28, 2018. <https://www.reuters.com/article/us-tyson-foods-israel/tyson-foods-backs-israeli-startup-to-grow-meat-in-the-lab-idUSKBN1I31DP>

⁵⁰ "World's first chicken produced without the animal," memphismeats.com, Last modified: March 15, 2017. Accessed September 28, 2018. <http://www.memphismeats.com/blog/2017/3/15/breaking-worlds-first-chicken-produced-without-the-animal>

Liberation from corporeal form?

IVM is usually articulated within a utopian narrative of liberation from the limitations of both corporeal form (Agapakis 2014, 117) and ethical accountability (van Mensvoort & Grievink 2014): disembodied meat (so the story goes) “will prove a panacea for the eco-catastrophes wrought by modern meat industries” (McHugh 2010, 183). From 2008 to 2014, for instance, animal advocacy group PETA offered a one million dollar prize to whomever first brings in vitro chicken meat to market.⁵¹ The organization explained their support of this “interesting technological phenomenon” as stemming from ethical principles of nonviolence: in vitro meat was something that PETA saw itself as “morally required to support” (in McHugh, 2010, 187). Although the prize expired, unawarded, in 2014, PETA announced that “the operation was a success,” having spurred interest, investment and ultimately “breakthroughs” in tissue scaffolding and muscle development.⁵² PETA's ideological (if not, ultimately, financial) support of cultured meat is unsurprising; the organization hews closely to the philosophy of Peter Singer (1975[1990]) and a meat-producing organism with no capacity for suffering is indeed “the utilitarian’s dream creature” (McHugh 2010, 191). As a character in *Oryx and Crake* caustically observes, “the animal welfare freaks won’t be able to say a word, because this thing feels no pain” (Atwood, 2003, 203): such an entity would not register on a Singerian utilitarian scale of ethical relevancy. Aside from reducing animal suffering, IVM is also presented as ethical from the more anthropocentric perspectives of promoting environmental sustainability and alleviating global (human) hunger. The

⁵¹ “PeTA’s In Vitro Chicken Contest.” [peta.com](https://www.peta.org/features/vitro-meat-contest/). Last modified: April 4, 2014. Accessed: Sept 28, 2018. <https://www.peta.org/features/vitro-meat-contest/>

⁵² *ibid.*

organization 'New Harvest,' for instance, was established in 2004 as a “non-profit research institute building and establishing the field of cellular agriculture,”⁵³ a mission it seeks to accomplish by “consolidating all relevant research, launching and incubating companies in the field, being the point of connection between various players, directing funds in the form of grants” and educating the public (Datar, Kim & d’Origny 2016, 129). On the organization’s website, their stated goal is to “reinvent the way we make animal products” in an effort to “continue to provide affordable and sustainable food to a growing population.”⁵⁴

In these ways, in vitro meat functions as a promissory narrative—a vision for the future application of new technologies that continually frames these technologies in the present (Stephens 2013, 162). IVM promises to save the environment, feed the world and spare farmed animals their lives—all while encouraging consumers to continue enjoying the meat-centric diet of the industrial West. Critics of the IVM discourse are quick point out the naivety of some of these promissory claims. Although IVM proponents emphasize the potential to one day utilize non-animal sourced polymer scaffolding and mushroom or algae-based cell-growth medium, the technology as it now stands is heavily reliant on slaughterhouse products; Catts and Zurr estimate that the serum from a whole foetal calf was needed to grow their two tiny frog steaks (McHugh 2010, 189; Simonsen 2015). The entire concept of “real artificial meat” also entrenches the conceptual centrality of animal protein in dietary-nutritional discourses (Sinclair

⁵³ “About.” [new-harvest.org](http://www.new-harvest.org/about). Last modified May 2 2018. Accessed September 28 2018. <http://www.new-harvest.org/about>

⁵⁴ *ibid.*

2016)—why not just “feed the world” with plants instead of technologically sophisticated iterations of nonhuman animal flesh, vegan critics of IVM ask (Cole & Morgan, 2013)? The culinary imperialism of seeking to spread the meat-centric diet of the industrial West to the rest of the world, all under the rubric of ‘aid’ and ‘feeding the masses’ should be obvious (Twine & Stephens, 2013). Although the technology may one day satisfy the utilitarian mandate to minimize creaturely suffering, when understood in biopolitical terms IVM is “utterly continuous with the technologies and dispositifs that are exercising a more and amore finely tuned control over life and ‘making live’ at the most capillary levels of social existence” (Wolfe 2012, 97; see also Miller 2012, 47), IVM thus needs to be understood as part of capitalism’s project of “trumping of ecological and material limits” (Twine 2010, 14). The objection that it will divest control of foodways into the hands of corporate interests and out of the hands of communities themselves is particularly prominent as the technology becomes more viable and existing agribusiness corporations (like the aforementioned Tyson) take notice: “while in vitro meat grows outside of an animal, it doesn’t grow outside of industrial models of food productions” (Agapakis 2014, 118).

Miller (2012) argues that “widespread reliance on cultured meat, should it transpire, risks amplifying the power of large corporations through their control of patented and trademarked commodities” (55), rightly emphasizing the necessity of thinking carniculture in terms of biopower so as to interrogate this speculative technology’s imbrication within a globalized and corporatized food system. SF representations of disembodied meat often take this route. The substance usually signifies a kind of

nightmare, a dystopian world where governmental or corporate interests totally control a society's foodways (and much else besides). In Pohl and Kornbluth's *The Space Merchants* (1956), for example, chunks of flesh are routinely sliced off of a giant, disembodied poultry creature and fed to the subjugated, false-consciousness dwelling proletariat—here, in vitro meat represents (among other things) “corporate greed run amok” (McHugh 2010, 192). In vitro chicken flesh in Atwood's *Oryx and Crake* (2003) serves a similar narrative function (ibid). SF is full of in vitro meat as a signifier of hypercontrol, blandness and over-civilization. Dissenting voices are rare: one prominent contemporary example is *The In Vitro Cookbook* (van Mensvoort & Grievink 2014).

IVM and culinary culture: The IVM Cookbook

The In Vitro Meat Cookbook is not SF in the traditional narrative sense—rather, it is a “bizarre cookbook from which you cannot cook” (van Mensvoort & Grievink 2014, front cover) designed by members of the Dutch art collective ‘Next Nature Network’ in an effort “to explore the creative potential of in vitro meat as an answer to what they perceived as a lack of attention to food culture among meat-culturing scientists” (Jönsson 2017, 850).⁵⁵ The book features forty-five IVM recipes, each accompanied by a one-to-four star feasibility rating, covering the three main issues for which IVM is often touted as an ethical solution (promoting environmental sustainability, avoiding harm to animals, preventing human food shortages) and adding the

⁵⁵ The idea of “speculative cookbook” is not new—in 1976 *To Serve Man: A Cookbook for People* was published by Hugo and World Fantasy Award-winning SF fan, author and editor George H. Scithers (under the pseudonym Karl Würf) with an introduction from the important and enigmatic SF writer Margaret St. Clair. Firmly tongue in cheek, the text is notable for its barely subtextual homoeroticism and features “beefcake” illustrations of muscular men in the style of Tom of Finland by prominent gay illustrator Jack Bozzi (AKA “ADAM”).

“exploration of new food cultures” as an oft-neglected fourth (2014, 7). A slickly presented hardcover book, clad in a textured finish reminiscent of raw meat and lavishly illustrated inside, *The In Vitro Meat Cookbook* is a visceral exploration of heretofore impossible culinary potentials of IVM and a rare example of the reimagining of ‘carniculture’ as local, small scale, DIY and even artisanal. The cookbook concludes with an essay by New Harvest CEO Isha Datar and collaborator Robert Bolton imagining “an industry comprised of many diverse products and players and production on many different scales” (Datar & Bolton 2014, 156)—including cheap in vitro meat of the ChickieNobs variety, but also mid-range lab-grown meat made locally in urban areas, high-priced meats ‘micro-cultured’ in trendy neighbourhoods at boutique gastropubs and even countertop bioreactors for home-brewers (157). Coining the term ‘carnery’ as cognate to bakery, winery and brewery, Datar and Bolton suggest that “carniculture might be dressed with similar connotations and aesthetics to the craft brew and farm to table movements” (155). Contra the dystopian tendency to mobilize in vitro meat as a trope of centralized governmental and corporate control over community foodways, Datar and Bolton envisage “communities of home carniculturists, who began as foodies and DIYbio enthusiasts, swap[ping] techniques and recipes at cultured meat cook-offs, fairs and night markets” (157). Meat production “moves from the hands of the few to the hands of the many. And people grow more authentically connected to the origins and creation stories of what they eat” (158). Demonstrating a sophisticated understanding of the optics of new food movements, *The In Vitro Meat Cookbook* (Datar and Bolton’s essay in particular) simultaneously mimics and punctures the pretensions

of contemporary bourgeois gastronomic discourse, subverting the dominant culinary narrative of in vitro meat as phoney, unpalatable and corporate.

From a more overtly critical animal studies perspective, the possibility that IVM will stimulate commercial demand for slaughtered meat rather than outright replace it is a major concern. Although conceivable that in vitro meat would render slaughtered meat ethically obsolete,⁵⁶ it seems much more likely that in vitro meat will simply supplement business-as-usual animal abuse and incarceration: as Tyson Foods' assures stakeholders regarding the meat giant's recent investment in IVM, "we continue to invest significantly in our traditional meat business but also believe in exploring additional opportunities for growth that give consumers more choices."⁵⁷ Above all, such extra consumer choices must generate profit; if cheap and plentiful meat can be produced in vitro, the possibility that "real" meat from "real" animals will be fetishized, coveted and costly is a very real one (Miller 2012, 46; Parry 2009). If IVM could be deployed to further hierarchize consumption practices while maintaining a market for meat of the old-fashioned slaughtered variety, such a scenario is a clear win-win for existing stakeholders in animal (ab)use industries. At the first international conference on the production of cultured meat, for example, the 'In Vitro Meat Consortium' (a now-defunct organization of researchers seeking "to promote scientific excellence and to

⁵⁶ "Synthetic meat" has rendered animal slaughter obsolete in *Exiles of the Moon* (Schachner & Zatt 1931[2016]), as has "psuedoflesh" in *Whipping Star* (Herbert 1970). The narrator of Samuel Delany's *Stars in My Pocket Like Grains of Sand* (1984) is horrified to discover he is eating slaughtered and not tissue-cultured meat; slaughtered meat is similarly taboo in Lois McMaster Bujold's *Vorkosigan Saga* (from 1986) and Iain M. Bank's *Culture* novels (from 1987).

⁵⁷ "Tyson foods backs Israeli startup to grow meat in the lab," [reuters.com](https://www.reuters.com/article/us-tyson-foods-israel/tyson-foods-backs-israeli-startup-to-grow-meat-in-the-lab-idUSKBN1I31DP), Last modified: May 2, 2018. Accessed September 28, 2018. <https://www.reuters.com/article/us-tyson-foods-israel/tyson-foods-backs-israeli-startup-to-grow-meat-in-the-lab-idUSKBN1I31DP>

coordinate alternatives to conventional meat production” [Datar, Kim & d’Origny 2016, 123]) offered the following rumination on the commercial viability of the product:

If this production strategy were to replace a substantial part of the current meat production regime, this may allow development of a downsized animal production industry which can acquire a competitive edge in the upper-level meat market (2008; in Miller 2012, 52).

Lab-grown meat, the ‘In Vitro Meat Consortium’ reassures ‘conventional’ meat producers and investors, can supplement and stimulate existing animal use industries, creating profitable new markets of elite consumers willing to pay for the real thing. We can readily see this in SF iterations of IVM. Consider the following from William Gibson’s much-feted *Neuromancer* (1984):

“Jesus,” Molly said, her own plate empty, “gimme that. You know what this costs?” She took his plate. ‘They gotta raise a whole animal for years and then they kill it. This isn’t vat stuff.’ She forked a mouthful up and chewed (Gibson 1984, 137-8).

Margaret Atwood’s *Oryx and Crake* (2003) makes this same point about in vitro meat’s potential adoption within gastronomic regimes that reify “a perceived opposition of authenticity and technicity” (Miller 2012, 46). On a dinner outing with the successful and moneyed Crake, working-class Jimmy watches in awe as his old friend orders a plate of “real Japanese beef, as rare as diamonds. It must have cost him a fortune” (Atwood 2003, 289). Since “real” meat is costly, in vitro meat must conversely be cheap, unsuitable for sophisticated palates. The novel describes a form of cell-grown “meat tuber” marketed as ChickieNobs, a product that undercuts traditional factory farming

expenses and eventually edges “real” chicken out of the fast-food take-out market. The product, however, never escapes the taint of its unnatural, vegetative origins. When Jimmy makes the mistake of bringing home a bucket of fried ChickieNobs to his pretentious roommates, they stop speaking to him for a week (Atwood 2003, 242). And, although Jimmy himself (like many other people of limited income) has become used to eating “ChickieNobs” (Atwood 2003, 285-6), he is quick to denounce them when he gets the opportunity to eat the real thing while dining at a posh restaurant with Crake (Atwood 2003, 292). Far from replacing dead-animal meat, then, in this scenario IVM seems more likely to supplement it; as Miller writes, “we could face a scenario of ‘real’ food for the rich; simulated food for the poor” (2012, 53). While such a scenario might reduce farmed animal suffering from a utilitarian standpoint, it does nothing to problematize carnism more generally, serving instead to reinscribe of a classist hierarchy of meat consumption. In the speculative futures of *Oryx and Crake* and *Neuromancer*, the old taboos regulating who gets to eat which kinds of meat are more powerful than ever and, just as housewives and children in the industrial revolution deferred their portions to the man of the house (Adams 1990, 29; Twigg 1983, 24-5; Rifkin 1992, 242-3), meat in these speculative visions is for the rich, the powerful, the socially elite.

Suffering as spice?

When real-world carniculturists propose that that IVM might supplement ‘traditional’ animal agriculture by creating a market for high-priced slaughtered meat, they typically suggest that this value-added commodity would accrue its cultural cachet “by

documenting that it is ecologically sound and meets basic animal welfare requirements” (‘The In Vitro Meat Symposium’ 2008, in Miller 2012, 52). Essentially this is an speculative elaboration on the “happy meat” movement we see today, where consumers with the requisite cultural and economic capital can demonstrate their elevated tastes by rejecting factory farmed meat and purchasing meat discursively constructed as “happy” (Parry 2009; 2010; Cole 2011; Pilgrim 2013; Stanescu 2014). The carnicultural iteration of this narrative simply replaces ‘factory farmed meat’ with ‘in vitro meat’—the idea is that factory farmed meat is intolerably cruel and should be replaced with an IVM alternative, but that a much smaller and kinder meat industry would (could? should?) persist, driven by the the tastes of discerning and moneyed consumers who don’t mind paying extra for “the added ‘value’ of ethical self-satisfaction” (Cole 2011, 84). Putting aside skepticism about just how ‘happy’ real-life ‘happy meat’ is (Stanescu, 2016), I believe we have good reason to doubt this narrative of IVM stimulating welfare-improved in vivo meat production. Atwood seems to doubt this, too. Dining at an expensive restaurant on his friend’s dime, Jimmy reflects that he “was so used to eating ChickieNobs by now, to their bland tofu-like consistency and inoffensive flavour, that the capon tasted quite wild” (Atwood 2003, 292).⁵⁸ Capon, the term for a rooster castrated at a young age, absolutely does not “meet basic animal welfare requirements,” at least according to current British legislation, which has banned its production in the UK on animal welfare grounds.⁵⁹ For Jimmy, however, the cruelty

⁵⁸ As Adams argues, “tofu often functions as the synecdoche, or shorthand phrase, for all of veganism” (Adams 2016b, 251)

⁵⁹“An HSUS Report: Welfare issues with caponizing chickens.” [humanesociety.org](http://www.humanesociety.org/assets/pdfs/farm/HSUS-Report-on-Caponization.pdf). Last Modified July 18, 2006. Accessed September 28, 2018. <http://www.humanesociety.org/assets/pdfs/farm/HSUS-Report-on-Caponization.pdf>

inherent in the production of capon seems of little concern. Perhaps it is even the point: while the “inoffensive” ChickieNobs are produced without maiming or slaughtering any living animal, the capon is the real thing—dead flesh from a creature who suffered.

Fiddes (1991) argues that it is precisely this intentional infliction of suffering, this overt and deliberate performance of dominance over the nonhuman Other, that has made meat so desirable throughout the history of Western pastoralism (44, 65). “The fact that most of us make little mention of the domination inherent in rearing an animal for slaughter does not indicate that it is irrelevant,” he writes (44). “Veal, for example, enjoyed high prestige for many years partly . . . because of the extreme subjugation of the creatures intrinsic to its production” (ibid.). SF depictions of animal products wherein the cruelty of the means of production is part of the appeal emerge in comedic and tragic registers. A good example of the former approach can be found in SF television show *Futurama* (Keeler & Cohen, 2009), which features the following exchange at a far-future fancy eatery:

Chef: We’ve got a wonderful grizzly bear that’s been dipped in cornmeal and lightly tormented.

Diner: What was the bear’s name?

Chef: JoJo.

Diner: Oooh, I’ll have him! (2009: no pagination)

Perhaps unsurprisingly given her fixation with death and pain (Philip, 2007), James Tiptree Jr is one of the few to broach this topic with any gravitas. Two short stories (‘We Who Stole the Dream,’ 1978; ‘And I Awoke and Found Me Here on the Cold Hill’s Side,’

1972) and one novel (*Brightness Falls From the Air*, 1985) describe a delicious and highly sought after elixir, similar in cultural cachet to the finest of wines, manufactured from the secretions of an alien creature in intense psychological pain; the most sought-after vintages are procured by torturing these creatures to death in front of their loved ones. This phenomenon—food wherein part of the appeal is the cruelty of the means of production—is by no means confined to the realm of fantasy. Veal is a modern example; the songbird ortolan is another, traditionally prepared by drowning the creature in cognac and said to be eaten with a napkin draped over one’s head, to hide one’s shame from God. Eighteenth century urban England was a veritable hotbed of sadistic cuisine:

they chopped up live fish, which they claimed made the flesh firmer; they tortured bulls before killing them, because they said the meat would otherwise be unhealthy; they tenderized pigs and calves by whipping them to death with knotted ropes; they hung poultry upside down and slowly bled them to death; they skinned living animals. Recipe openers from the era said such things as, “Take a red cock that is not too old and beat him to death...” (Ackerman 1991, 147).

Consider the following example from an iconic nineteenth-century cookbook ‘The Cook’s Oracle,’ in which a still-living goose or duck is partially plucked and then roasted alive (ibid). The recipe concludes, “she will cry as you cut off any part from her and will be almost eaten up before she is dead: it is mighty pleasant to behold!” (ibid.).

Of course, Western social mores regulating cruelty to animals have shifted dramatically in the last couple of hundred years (Franklin 1999, 11-22) and such a blatant display of

raw dominance over nonhuman animals had for the most part fallen out of favour by the twentieth-century. However, as I have argued elsewhere (2009; 2010; 2011), there remains something significant about animal death—even when the animal referent is absented from dominant Western discourses concerning meat (Adams 1990), the (abstract) knowledge that an animal had to die for the flesh on one’s plate is in some way part of the appeal. The characters of *Oryx and Crake* illustrate this point: in the novel, substitutes for dead-animal meat are tolerated out of necessity but are always rejected when the opportunity to eat the real thing arises. It is as if meat procured without killing is not real, not authentic, not *really* meat. Similarly, the popular carno-gastronomy of the twenty-first century presents the killing of animals for meat as a rite of passage through which to prove oneself adult, rational, masculine (or at least not governed by unruly femininity)—in short, a fully human subject (Parry 2009; 2010; 2011; Bailey 2009, 139; Pilgrim 2013). ‘Real’ meat is a product of killing; subjectivity emerges through this metonymic ingestion of animal carnage.

Carnophallogocentric subjectivity

The concept of carnophallogocentrism can help make sense of this continuing centrality of dead meat (even over the “real artificial” in vitro variety). A portmanteau coined by Derrida and sketched in his interview ‘Eating Well, or the Calculation of the Subject’ (1991a), carnophallogocentrism combines two previously established posthumanist critiques of subjectivity — “logocentrism” and “phallogocentrism” — and adds the prefix “carno-” to form a concept largely unexamined in continental philosophy prior to Derrida’s ‘animal turn,’ but long familiar to (eco)feminist scholars, who had been

writing about the intersectionality of sexism, ratiocentrism and anthropocentrism for decades (Salmon 1973; 1982; Adams 1975; 1976; 1990; Merchant 1980; Benney 1983; Salleh 1984; Kheel 1984; 1985; Lansbury 1985; Collard & Contrucci 1988; Davis 1988; Noske 1989; Haraway 1989).⁶⁰ “Logocentrism,” as Calarco (2016) glosses it, denotes the privileged position Western philosophy awards the self-aware, speaking, rational subject; phallogocentrism the consummately virile and masculine features of Western social institutions and notions of subjectivity (32). As Calarco explains, Derrida suggests that ‘carno’ should be added to phallogocentrism in order to emphasize that the notion of the subject that is being critiqued in post-humanist thought should be understood not simply as a fully self-present, speaking, masculine subject but also as a quintessentially human, animal-flesh-eating subject. (33)

The concept of carnophallogocentrism thus identifies three coordinates in the constitution of subjectivity: self-presence (understood as the possession of reason and speech), masculinity (as a construct that dominates the socio-cultural order) and carnivorousness (which Derrida understands as a powerful enactment of the “commitment to anthropocentrism [and] the hierarchical ranking of human subjects over nonhuman animals”) (Calarco 2016, 33).

Teasing out the affinities between Derrida’s carnophallogocentrism and her own earlier scholarly work on the sexual politics of meat (Adams 1975, 1976, 1990), Adams understands the concept as Derrida’s articulation of the “primary social, linguistic and

⁶⁰ As Haraway bluntly puts it, “Derrida did some wonderful stuff, but he doesn’t start animal studies” (2009-2010, 157). For a discussion of what in Plumwood’s terms could be termed the backgrounding and denial-of-dependency of feminist animal studies in dominant critical strains of posthumanism, see Fraiman (2012)

material practices that go into becoming a subject in the West and how explicit carnivorousness lies at the heart of classical notions of subjectivity, especially male subjectivity” (2016, 34). The violence underlying meat eating constitutes the “sacrifice” so important to Derrida’s account of the metaphysics of the subject (ibid). This sacrificial logic cleaves the human from the animal and forbids the murder of the former while sanctioning or even demanding the perpetual “non criminal putting to death” of the latter (Derrida 1995, 278). As Gross (2015) clarifies, for Derrida

“Sacrifice” here comes to name a procedure, milieu and ultimately a mode of being in the world—a mode of being a subject—that both necessitates a “nonviolence” synonymous with the inviolability of the human and, in the name of this restraint, justifies violence of potentially unlimited scale (139)

Derrida calls this double operation of human exceptionalism and animal immolation “the sacrificial structure of subjectivity” (1992, 42-43, 18-19; 2002, 389), but “the scapegoat structure” might be more accurate, capturing the way in which the supposedly supreme value of human life is dependent upon the sacrifice of the animal other (Lawker 2007, 86). While this sacrificial economy of Western metaphysics rests heavily on Abrahamic and particularly Christian religious ideas (Keenan 2005), as Haraway points out narratives of sacrifice and salvation “pervade U.S. scientific discourse” and indeed much of secular society (Haraway 1997, 47; Birke, Arluke & Michael 2007), a “totalizing mythology” comprising “the conceptual prison circumscribing all political language” (Csicsery-Ronay Jr 1991, 387). It is through the sacrifice of the animal that the salvation of the human becomes possible—and this sacrificial structure is crucial to the constitution of the carnophallogocentric subject. For Derrida, eating animal flesh is a

keystone of the sacrificial logic of humanism: “the establishment of man’s privileged position requires the sacrifice and devouring of animals,” he argues. “Humanism rests on the sacrifice of the animal, on the implicit swallowing up of the animal” (1990[2009], 2). What chance would a vegetarian stand of being elected head of state, Derrida wonders? (1991a, 114).⁶¹ For Derrida, meat-eating functions (in part) as a performative enactment of proper human subjectivity, as “a sign of the subject’s autonomy, security and indemnification” (Wolfe 2012, 20). “One may prove one’s subjectivity by reducing these ‘others’ to mere objects that may be disposed of at will,” as Bailey puts it (2009, 139): through the perpetual sacrifice of the animal other, the human subject emerges as an ontologically coherent entity.

Crucially, as Calarco argues, one need not understand carnophallogocentrism as definitively capturing “the dominant schema of metaphysical subjectivity,” or even “that there really is something called ‘Western metaphysics’ whose dominant schema can be uncovered” in the first place (2016, 39). Instead, carnophallogocentrism must be understood as a useful but necessarily incomplete heuristic—a strategic principle that captures “important tendencies in our culture surrounding the constitution of ‘properly’ human subjects” (40) and suggests “possible linkages among various critical perspectives and movements for social transformation” without seeking closure over

⁶¹ Derrida is certainly correct that a vegetarian would stand little chance of being elected President of France; as Cherry (2016) points out it is “extremely difficult to find vegetarian food in France,” a nation with a fiercely proud culinary heritage and one in which the animal advocacy movement remains comparatively weak in relation to other new social movements, and in relation to the animal advocacy movement in other countries (5). Across the Atlantic, Bill Clinton only adopted a (mostly) vegan diet after his term as US President; during the 1992 presidential campaign, he proved himself to be the citizen’s candidate by his well-publicized penchant for stopping in for hamburgers at local diners (Adams, 2018, 1). Similarly, in 2008 “the press made fun of Barack Obama for drinking green tea, while Sarah Palin’s grit was evidenced by her ability to hunt and gut a moose” (Oliver 2009: 104).

other critical analyses of subjectivity (40, 51). The latter point is one Derrida himself would probably contest. “We can no more step out of carnophallogocentrism to some peaceable kingdom,” he insisted, “than we can step out of metaphysics” (1991a, 115). Sinclair parses this insistence on the impossibility of “sacrificing sacrifice” as an acknowledgment that “the structure through which we consume others, excluding certain bodies from ethical recognition, rendering them killable without cost” is inherently sacrificial (2016, 243). While undoubtedly true that the moral dismissal of eaten bodies constitutes a form of sacrifice, eating need not entail the expulsion of certain bodies from ethical recognition—must not, lest we fall into the the trap of use-respect dualism that equates edibility with abjection (Plumwood 2002). Critical ecofeminists (and other critical animal scholars) must therefore reject Derrida’s dim view of the prospects of challenging the carnophallogocentric constitution of Western metaphysics. As Wood (1999) argues,

Carnophallogocentrism is not a dispensation of Being toward which resistance is futile; it is a mutually reinforcing network of powers, schemata of domination and investments that has to reproduce itself to stay in existence. (33)

Both as an ideal subject position and in its materialization in individual subjects, carnophallogocentrism must accordingly be understood as a performative enactment (Butler 1993, 3), not a fixed quality. For example, Adams (2016b) observes that meat advertisements which trade on the performance of normative masculinity frequently construe tofu as downright threatening: so-called “manly acts” are apparently “so unstable that they can be undone by cooking tofu [instead of meat] on a barbecue grill” (251). In this way, we see how carnophallogocentrism underwrites a hegemonic

subject-position that must be “repeatedly enacted, called into being in line with the conceptual-discursive-institutional idea it invokes” (Calarco 2016, 44). The fact that carnophallogocentrism has to be reiterated in the first place demonstrates its sociohistoric contingency and ontological instability, guaranteeing that “there are ever new ways of reinforcing carnivorous virility that we need to attend to,” challenge and contest (ibid.).

3-D printed moose steaks?

Carnophallogocentrism is not an inbuilt feature of the human psyche, but a sociohistorically contingent material-discursive apparatus of domination; it is a “key export for the success of capitalist globalization, one borne on the backs of billions of dead animals” (Wolfe 2010, 100). In vitro meat presents an ambiguous challenge to carnophallogocentric subjectivity and its materializations in the transnational animal industrial complex. On the one hand, IVM reinforces the centrality and necessity of meat to proper (Western, rationalist, male) human life (Sinclair 2016); on the other, its procurement without bloodshed—its elision of killing—challenges the sacrificial logic so crucial to Derrida’s understanding of carnophallogocentric subjectivity. Critical animal scholars have for the most part been leery of the prospect that any technology so geared towards the control and manipulation of living bodies might mitigate or transform carnophallogocentric tendencies in the constitution of the subject (Wolfe 2012, 97; Sinclair 2016; Davis 2016; Strutters-Montford 2018). IVM is critiqued as an expression of “human entitlement to reconfigure the bodies and psyches of other creatures to fit our schemes and satisfy our lust for manipulating life to reflect our will” (Davis 2016: 194).

Sinclair argues that whether grown in a lab or even assembled from plant matter, meat analogues “depend upon the framework of recognition that makes particular speciesed others always already edible” (2016: 231); instead of replicating certain kinds of animal flesh as food, “we must detach so-called animals from their association with edibility altogether” (2016, 223). Sinclair uses “edible” in the sense that Haraway uses “killable” (ie. always-already edible/killable); nevertheless the very suggestion that earthly bodies must be conceived of as inedible ought to ring alarm bells for critical ecofeminists who take Plumwood’s diagnosis of respect-use dualism seriously. It is thus crucial to consider how this burgeoning technology might be understood *outside* of a Western carnophallogocentric framework. Robinson draws from traditional Mi’kmaq stories to argue that IVM could allow new configurations of human-animal intersubjectivity that are consistent with traditional Mik’maq ontologies. Mi’kmaq thought understands other animals to remain alive as friends and siblings even as they are present as dead bodies that can be eaten (the figure ‘Moose’ persists despite the death and consumption of *this particular* moose) (274). While some stories emphasise that successful hunting involves outwitting other animals, others suggest the relationship be understood as an agreement between humans and other animals wherein animals sacrifice themselves in return for responsible use—a very different configuration of sacrifice than that demanded by Derridian carnophallogocentrism, which holds that subjectivity emerges via the sovereign power to forcibly sacrifice others, particularly (but by no means exclusively) other animals. Robinson suggests that IVM technology could “renegotiate that agreement to one in which the moose provide stem cells rather than laying down their lives”:

[i]n a future where I can order a moose steak from a 3-D printing machine, or purchase one grown in a lab, my relationship with actual living moose becomes freed from a relationship of sacrifice, as well as dependence and can begin to approach something akin to that of relatives who, after a long period of tension, have finally become friends. (2016, 275)

Robinson understands IVM as having the potential to “free” other animals from relationships of sacrifice with humans, in a fashion resonant with traditional Mi’kmaq understandings of human-animal reciprocity and sibblingship. Similarly, within a Western carnophallogocentric paradigm van der Weele and Driessen (2013) speculate that “in the future we might all have a pig in our backyard or in our local community, from which some stem cells are taken every few weeks in order to grow our own meat, either in a machine on our kitchen sink or in a local factory” (2013, 650; see also van Mensvoort and Grievink (2014, 55, 76-7). Samuel R. Delany imagined something similar in *Stars in My Pocket Like Grains of Sand* (1984), wherein the human protagonist donates his cellular material to grow the meat to feed an entire society. Such a sharing of bodily matter is considered an honour: “we will savour the complexities of your flesh for years to come and it will lend its subtleties to myriad complex meals,” effuse the hungry locals (280). Technologically mediated to relinquish the need for killing, perhaps flesh consumption can come to be understood as “a sort of gift exchange between races” (Parasecoli 2008, 81).⁶² Obviously considerable pragmatic issues arise in this scenario, including the question of the circumstances in which cell samples are to be

⁶² Niven (1978[2006]) takes a different tack in the short story “Assimilating Our Culture, That’s What They’re Doing!”: in vitro human meat is grown and consumed by aliens as the ultimate example of cultural appropriation.

harvested and the role of formerly ‘food’ animals within an economy that has rendered their deaths—and to an extent their lives—obsolete. CAS scholars have rightly rejected Haraway’s argument that veganism “would consign most domestic animals to the status of curated heritage collections or to just plain extermination as kinds and as individuals” —there are more ways to relate to domestic animals than just eating them, collecting them or eradicating them (2008: 80; Giraud 2013b, 104). Similarly, CAS should keep an open mind as to the possibilities of IVM—while the prospects of lab-grown meat effecting radical change within extant capitalist-carnophallogocentric structures may be dim, outside of this culturally contingent framework all bets are off. CAS scholarship should not dismiss the possibility IVM might serve to “trouble the divisions that insert themselves between different kinds of human and animal bodies” in ways conducive to multispecies flourishing (Dennis & Witchard 2015, 162). Perhaps we could stand to learn a thing or two from thought experiments like Robinson’s and Delany’s that reimagine webs of interspecies relations *as they could be*, in ways that do not deny but rather affirm the fundamental ontological edibility of all creaturely bodies.⁶³

This is all well and good for the moose—but what about the moose steak itself?

Disembodied meat “is still a product of life, albeit of a cellular, non-organismic variety” (Marder 2016, 108). Cells live and die in the production of IVM—can cell death

⁶³ I am less sanguine about learning a thing or two from van der Weele and Driessen’s (2013) “pig in the garden” thought experiment, which blunts the critical force of its argument by arguing that their vision of “conscientious” IVM offers a corrective to the “bleak” alienation of “urban vegans [who] are completely separated from nature and from animals” (656). As Poirier 2018 points out, on the contrary, many vegans consider their avoidance of animal consumption to constitute a significant relationship to the more-than-human world....By calling the backyard model “conscientious,” and then immediately referring to veganism as “bleak,” the authors imply that envisioning a relationship with animals in which they are not eaten is undesirable and should be avoided (Poirier 2018, 19).

“count” towards this sacrifice, upon which carnophallogocentric subjectivity (if there can be said to be such a thing) allegedly depends? What kinds of killing counts? What lives, even if they are not grievable (Butler, 2003), are killable and how does the “semi-living” status of IVM (Catts & Zurr 2006, 2013; Dixon 2009) complicate this equation? In order to parse these questions, we need to understand how disembodied meat complicates not only carnophallogocentrism as a (sociohistorically specific) metaphysical disposition (Wolfe 2012, 20), but the very form of the subject itself (McHugh 2011). *The In Vitro Meat Cookbook* (2014) offers a good point of entry in attempting to interrogate subjectivity and agency by diffractively thinking them through the spectral materiality of disembodied meat. In *The In Vitro Meat Cookbook*, the agential possibilities of carniculture are for the most part elided in favour of presenting disembodied meat as an inert object that is ethically and gastronomically superior to the in vivo variety. Only in those recipes which call for motile meat is the liminal liveliness of these speculative edibles acknowledged: the recipe “spear-fishing for the semi-living” suggests grilling “semi-living creatures” on a hotplate, where they can “skitter and slither across the electrified surface, cooking as they scoot along (75).⁶⁴ However, as the recipe on the previous page assures, because these “creatures” “have no organs or nervous systems, they’re not truly alive” (73), merely reacting to mechanical stimuli. Of course, life can exist without organs or nerve cells—the tiny multicellular *Trichoplax adhaerans*

⁶⁴ The idea that motility could be a desirable feature of foodstuffs was prefigured in SF in William Tenn’s 1957 story “Winthrop Was Stubborn”

where a popular dish of the future is this purple spaghetti which actively squirms up from the plate towards your mouth and wriggles about cosily once it’s inside. As a passing gourmet explains, “...In addition to flavour, texture and aroma, [you] experience *motility*. Think of it, food not just lying there limp and lifeless in your mouth, but food expressing eloquently its desire to be eaten” (in Langford 2005, 32).

manages quite well without either, foraging and digesting algae across shallow sea-floors worldwide (Smith, Pivovarova & Reese 2015). In reconfiguring motile, multicellular assemblages as “not truly alive,” *The In Vitro Meat Cookbook* strategically objectifies and de-animates these dynamic and (presently) hypothetical “lab-grown creatures” in order to facilitate a simultaneous refutation and reinscription of the (sociohistorically contingent, as we have seen) Western taboo against consuming meat that is not quite dead. The implicit liveliness of motile bodies (Chen 2012, 8) necessitates the disclaimer that such bodies are ‘not really alive’ and thus fair game for consumption and incorporation—even as this liveliness adds the thrill of transgression to the dining experience. *The In Vitro Meat Cookbook* thus strategically exploits and disavows the vitality of IVM as a part of a uniquely sensual (to the point of sexual) culinary culture that can still be understood as ethical (Mensvoort & Grievink 2014, 73).

The In Vitro Meat Cookbook’s reference to “semi-living creatures” that “have no organs” gestures towards the Deleuzian concept of the “body without organs”: borrowed from Dogon philosophy,⁶⁵ the body without organs is “permeated by unformed, unstable matters, by flows in all directions, by free intensities or nomadic singularities, by mad or transitory particles” (Deleuze & Guattari, 1980, 40). Phenomena that appear as stable entities are anything but and may be better understood as “a collection of potentials” that hang together only through the shifting exchange of flows of matter and meaning (Deleuze & Guattari, 1983). In this sense, what we think of as discrete “organisms” are really temporally and spatially contingent coagulations of lively matter, “not static

⁶⁵ The Dogon are an Indigenous people of Mali.

organized unities, but porous bodies that assemble into compositions through a variety of relations” (Buchanan 2008, 174). This radically kinetic ontology informs and aligns with material feminist understandings of embodied life as transcorporeal (Alaimo 2010, 2; 2008), permeated by flows of earthly substances and emerging in intra-action with various material agencies that cumulatively “dissolve the outline of the subject” (Alaimo 2014, 187). With materiality and the body having long been an “extraordinarily volatile site for feminist theory” (Alaimo & Hekman 2008, 1), material feminisms draw upon Deleuze’s body without organs (1980), Latour’s actor network theory (1993), Barad’s agential realism (2007), Alaimo’s transcorporeality (2008) Bennet’s thing-power (2010), Haraway’s naturecultures (2008), Bradotti’s nomadic subjects (1994) and other so-called ‘new’ materialisms (Grosz 1995; 2005; Moe 2014, DeLanda 2000; Kirby 1997; 2011; Morton, 2007; Coole & Frost 2010; Dolphijn & van der Tuin 2012) to mount an intersectional analysis grounded by “keen interests in engagements with matter” (Hird 2009, 330). Aspects of “new” materialism have been notably prefigured in Indigenous thought (TallBear 2011; 2017; Todd 2014); ecofeminist thinkers have likewise innovated key insights in the field (Casselot 2016, 74; Gaard 2011), notably Plumwood’s theoretical stance of intentional recognition towards the agency of the more-than-human, itself indebted to Indigenous Australian philosophies (Plumwood, 1996; 2002, 182). Material feminisms emphasize the agentic capacities of nonhuman forces in order “to catalyze a sensibility that finds a world filled not with ontologically distinct categories of beings (subjects and objects) but with variously composed materialities that form confederations” (McHugh 2010, 99). Agency in this orientation is understood not as a trait that some beings possess, but instead as “a pervasive and inbuilt property of

matter, as part and parcel of its generative dynamism” (Iovino and Opperman 2014, 3). Matter itself is rendered animate, understood not as “a thing, but as a doing, a congealing of agency” (Barad 2007, 151). Applying material feminism to literary analysis, Iovino and Opperman (2014) articulate material ecocriticism as

the study of the way material forms—bodies, things, elements, toxic substances, chemicals, organic and inorganic matter, landscapes and biological entities— intra-act with each other and the human dimension, producing configurations of meanings and discourses that we can interpret as stories. (7)

Material feminist ecocriticism (or material ecofeminist literary criticism), then, acknowledges the communicative potential of nonhuman matter and adopts a theoretical posture of attentive listening (Donavan 2008) and intentional recognition of nonhuman agency (Plumwood 2002) in order to recuperate and legitimate the “rich narrative description of the nonhuman sphere” (Plumwood 2002, 188) so crucial to any intra-active project of creative world-making (Fawcett 2000, 2012).

Cells as Selves?

The phenomenon of in vitro meat is particularly ripe for material ecocritical analysis. Cell culture technology radically reconfigures the spatial and temporal dimensions of living bodies (Landecker 2007, 232), manifesting as a provocative challenge not only to the concept of subjectivity, but to such fundamental ontological categories as “organism” and even “life” itself (Seiler 2007, 243). In this way, speculative discourses around disembodied meat participate in an established genealogy of complications to these fundamental categories. Although the designation ‘organism’ has no precise meaning,

bioscientific discourses deploy the term pragmatically as a “stable target for explanation” (Fox Keller 2002, 12); definitions of ‘organism’ usually take aim at “a living, autonomous biological entity that occupies a single body” (Seiler 2007, 247). The concept materialized in intra-action with the early modern “emergence of the individual bio-political citizen” (Griffith 2015, 37; Gilbert Sapp & Tauber 2012) and has subsequently been articulated via sociohistorically contingent epistemological cultures (ecology in the nineteenth century, genetics in the twentieth, genomics in the twenty-first) (Fox Keller 2002; see also Knorr-Cetina 1999). It has been coming apart at the seams almost since its inception. Not only has the material turn rendered the distinction between organism and environment porous and contingent (Buchanan 2008; DeLanda, 2000; Deleuze & Guattari 1983; Alaimo 2008, 2010, 2014; Iovino, 2012, 2015; Iovino & Opperman, 2014), but the ubiquity of interspecies symbiosis has shattered any conception of organisms as discrete “biological individuals” in anatomical, embryological, physiological, immunological, genetic, or evolutionary terms (Gilbert, Sapp & Tauber 2012, 325). Chimeras such as lichens (a symbiotic merger of fungi and photosynthetic bacteria or protists) and the oft-cited *Mixotricha paradoxa*, a termite gut symbiont that is itself an aggregate of at least five separate species (Gilbert, Sapp, & Tauber 2012, 363; Haraway, 2008a, 285–286; Griffith 2015; Margulis & Sagan 2007, 42) are the rule and not the exception. “We are all lichens” (Gilbert, Sapp & Tauber 2012, 366; Haraway 2014), symbionts all the way down (Hird 2009), not ‘organisms’ but

'holobionts' (Margulis, 1991, 2), always already multiple (Martin 2007).⁶⁶ Even the distinction between life and the non-living is not a hard and fast biological fact (Speigelman, in Dawkins 2004, 582–94), but a non-innocent negotiation always already enmeshed in the political (Maisenchain 2003, 262; Derrida 1991b, 3099 n3; TallBear 2017). Biological agents such as viruses—macromolecular crystals capable of highjacking the transcription and translation processes of the eukaryotic cells they enter in order to produce copies of themselves—epitomize this profound ontological indistinction between vitality and inertness, but a veritable bestiary of microbial entities straddle the life-nonlife divide, including but not limited to prions, plasmids, integrons (gene capture and integration systems) and transposons ('jumping genes') (Dupre & O'Malley 2009, no pagination).

Hanging in technologically mediated suspension between life and death, temporally and spatially reconfigured as immortal and amorphous, disembodied meat carries an "uneasy and problematic vitality" (Catt & Zurr 2013, 101). It presents a unique challenge to the idea of life as easily demarcated from non-life and of the organism as a skin-encapsulated individual (Seiler 2007, 249). Van Valen and Majorana (1991) have even argued that certain kinds of disembodied human tissue ought to be understood as a new species of organism, albeit one restricted to a particular technologically-mediated

⁶⁶ Since the 1953 discovery of human genetic chimerism, "a small but growing group of people, allied mostly through Internet communities, support groups and particular psychotherapeutic approaches, conceive of themselves as multiple because of an early loss and/or absorption of their twins" (Martin 2007, 219). Symbiogenesis theory and the broader 'microbial turn' suggest that this multiplicity can be understood as characteristic of all human bodies, not only those identified as genetic chimeras, thus continuing the "dissolution—or at least a historical, cultural and biological fluidity—of the very entity called the person" (221).

environment (In Seiler 2007, 249).⁶⁷ IVM thus escapes the (admittedly already vexed) present taxonomies of the life sciences (McHugh 2010, 189), confounding biological or cultural classification though the weird agency of these “kind-of-alive” “kind-of-beings” (in McHugh 2010, 188). McHugh “caution[s] against naively retrofitting such complex entities into the terms of human subjects and nonhuman objects (the familiar foundations of discourse)” (2011, 196, 183). Consequently, material ecofeminist engagements with IVM must resist anthropocentric scientific and scholarly discourses that “fail to give an agency or even a proto-agency to the living fragments” of disembodied biological matter and treat “the semi-living as quasi-life at best and in most cases as equal to inert objects” (Catts & Zurr 2006, 1; e.g. Squier, 2004; Andrews & Nelkin, 2001; Waldby & Mitchell 2006). Nor is it enough to fall into “the too easy habit of reducing all actants to agential origins” (Thacker 2005, in Catts & Zurr 2006, 1) and conceive of the agential capacities of disembodied biomatter as merely derivative, bestowed upon them by their human creators (e.g. Roosth, 2009). After all, living cells (including those that make up IVM) demonstrably possess an agential power all of their own, quite apart from their enmeshment in human technical systems. This agential power, which Fitch (2008) dubs “nano-intentionality,” constitutes “a microscopic form of aboutness, inherent in individual eukaryotic cells, that make up a goal-directed capacity to respond adaptively to novel circumstances” (2). Eukaryotic cells (the kind possessed by all animals, plants and fungi) “respond adaptively and independently to their environment, rearranging their molecules to suit their local conditions, based on past

⁶⁷ Specifically the HeLa cell line, biopsied from the terminally ill Henrietta Lacks (without her knowledge or consent) in 1951 and growing in immortal fecundity in labs worldwide ever since; Van Valen and Majorana propose the binomial *Helacyton gartleri* for this novel species of organism.

(individual and species) history" (4-5) Furthermore and "crucially, this capacity is as characteristic of a neuron in the brain as it is of a free-living amoeba" (3). Lynn Margulis has also suggested that eukaryotic cells manifest a form a consciousness in their responsive and communicative capacities (2001) and that the phenomenon of consciousness itself emerged from microbial spirochete ecology (2007). Martin (2007) has parsed the late-twentieth century reification of cells as synecdochically representing the self to which they genetically belong, but it is in a very literal sense that Margulis argues that "cells are selves" of their own, the smallest possible unit of subjectivity (Margulis 2011, 2).

In this light, as tissue composed of eukaryotic cells IVM is absolutely agential—although the question of whether cellular lives and deaths can be understood as a the kind of sacrifice necessary to satisfy carnophallogocentric metaphysics remains open.

Conventional meat found at any ordinary butchery also possesses this kind of cellular vitality, at least while fresh (Catts & Zurr 2006, 1-2)—and yet the act of killing living cells in meat (through cooking or digestion, for example) does not seem to hold any symbolic valence distinct from the bare presence of the fragmented animal bodies those cells constitute. Even fresh vegetables teem with living, nano-intentional eukaryotic cells (Seiler 2007, 263), but—as Derrida alleges—a vegetarian still stands little chance of becoming head of state of any Western nation: "The chief must be an eater of flesh" (Derrida 1991a,114). IVM's (supposed) elision of animal sacrifice complicates the sort of "predatory subjectivity" that Derrida's carnophallogocentrism evokes (Miler 2012, 47)—the act of eating a meal composed of disembodied lab-grown cells thus troubles

Derrida's configuration of carnism as hinging on the domination of the figure of the animal (Struthers-Montford 2017). My hunch is that cell death is largely insufficient to satisfy the sacrificial logic of carnophallogocentrism, based as it is upon a hierarchical and dualistic ontology of human/animal that leaves little space for the consideration of the liminal semi-lives of intra-organismal entities.

Pohl and Kornbluth's Chicken Little and Pohl and Atwood's ChickieNobs

This is certainly the case in *Oryx and Crake*, where disembodied meat is routinely denigrated in comparison to the real thing and semi-living forms like ChickieNobs are discursively constructed as functionally equivalent to inert objects. As McHugh points out, *Oryx and Crake* "imagines the real artificial meat source as an utterly abject creature, an animal whose revolting qualities are decoupled from any sense of agency" (McHugh 2010, 192). Casting her gaze half a century back from Atwood's ChickieNobs to Pohl and Kornbluth's *The Space Merchants* (1956), McHugh argues that

Unlike ChickieNobs, the amorphous Chicken Little plays an active role in the earlier novel, sheltering members of the resistance movement and working to bring down the system that exploits her (and she is distinctly gendered female as well). (McHugh, 2011, 204)

Chicken Little's sex of course reflects the material reality of avian life under under capitalism—it is overwhelmingly hens and not roosters who bear the brunt of the animal industrial complex's atrocities. It should also be obvious that gendering a less-than-sentient, wholly consumable and endlessly regenerative body as female is a

representational strategy that risks reinscribing hegemonic constructs of female passivity and nurturance. And yet, I argue, the very act of using subject pronouns of any gender to describe a corporeality that would usually be understood as inert works against this passivity, serving to vivify rather than deanimate the body in question. Derrida has argued that the ethical recognition of the other is predicated on them being a “who,” and that animals have a priori been denied this response-ability through the logic of logocentrism (1991a, 96, 110). By resolutely describing Chicken Little with subject pronouns (she, who) rather than object pronouns (it, that), *The Space Merchants* manipulates what Chen (2012) describes as “animacy hierarchies,” in which “the sentiency or liveliness of nouns” (2) informs and suggests “a conceptual order of things, an animate hierarchy of possible acts” and actors (3) that manifests as “a scale of relative sentience that places humans at the very top” (89). In using language usually reserved for human subjects—the supposed apex of the animacy scale—to talk about a piece of meat, Pohl and Kornbluth deploy the dominant linguistic hierarchy of liveliness in order to subvert the ontological pecking order that such a linguistic strategy usually signifies. The result is that Chicken Little exhibits the exactly the kind of weird and uneasy vitality upon which Catts and Zurr insist and that material (feminist) ecocriticism strives to foreground.

The Space Merchants (Pohl & Kornbluth, 1956) depicts an ecologically ravaged, urbanized future Earth in which vast corporate interests cynically and ruthlessly manipulate the desires of an oppressed and exhausted proletariat, a world where “reckless exploitation of natural resources has created needless poverty and needless

human misery” (1956, 101). Food production is corporatized and centralized, with algae and yeast substitutes for animal products ubiquitous across the globe. An underground “terrorist” organization known as the World Conservation Association (the “Consies”) struggles against this corporate hegemony, operating as a decentralized resistance movement against the voracious consumer capitalism that has despoiled the environment and impoverished human life. Clearly drawing inspiration from Carrell’s experiments with poultry cardiac cells, Pohl and Kornbluth imagine Chicken Little as a corporate biotech product intended as an inexpensive source of protein for the working class, an amorphous and uncannily omnipresent meat creature growing in technologically-mediated fecundity in the catacombs of this urbanized dystopia.⁶⁸ They offer the following description of Chicken Little in one of her underground “nests”: “it was a great concrete dome, concrete-floored. Chicken Little filled most of it. She was a gray-brown, rubbery hemisphere some fifteen yards in diameter. Dozens of pipes ran into her pulsating flesh. You could see that she was alive” (106). Already the agency and vitality of Chicken Little surpasses that of the “meat-tuber” ChickieNobs.

Pohl and Kornbluth in no way anthropomorphize Chicken Little, yet nor do they strip the (semi-)creature of all semblance of agency. Consider the following passage,

Chicken Little grew and grew, as she had been growing for decades. Since she had grown from a lump of heart tissue, she didn’t know any better than to grow up against a foreign body and surround it. She didn’t know any better than to

⁶⁸In her uncanny omnipresence, Chicken Little echoes Moby Dick. See Armstrong (2008)

grow and fill her concrete vault and keep growing, compressing her cells and rupturing them. As long as she got her nutrient, she grew. (96)

Even though Chicken Little is not ventriloquised as possessing metaphysical or political subjectivity in any conventional sense, nor is she depicted as “mindless.” She is not unknowing—she just doesn’t know any better, as befits her genealogical historicity. She is even “liked” by Herrera, the worker who tends her, carefully pruning her fleshy bulk to ensure that no parts become infected or cancerous (107). The narrative suggests that the affection Herrera feels towards Chicken Little might displace a more traditional relationship (he doesn’t have a wife), but nevertheless emphasizes the responsibilities that the “vet/mechanic, the farmer/artist or the nurturer/constructor” exercise towards semi-living systems (Zurr & Catts 2002, 5). Real-life disembodied forms like Catts and Zurr’s “semi-living sculptures” must be fed regularly with nutrient medium and protected from microbial contamination. Failure to do so can be deadly: semi-living forms can be mortally susceptible to the bacteria and fungi borne on the human skin. In this sense and others, carniculturists must (in a profoundly unequal manner) meet the the cells to some degree on their own terms (Landecker 2016): “by the most obvious or ‘natural’ act of human nurturing, through caressing, we kill communities of cells which are stripped from their host body and immune system” (Zurr & Catts 2002, 7). Similarly, Chicken Little must be cared for in ways that challenge anthropocentric notions of guardianship or attentiveness, underscoring that “care” must be negotiated in intra-action with the specific needs of whatever is being cared for (whether semi-living forms like cellular biomatter or unambiguously vital creatures like animals or plants): “humans must learn to translate their limited understandings and perceptions towards a different

set of instincts of a different living system” (ibid.). Ethics inheres in and emerges from the encounter between (always already intra-acting) entities, a participatory epistemology wherein knowing “necessarily includes an ethical dimension” (Donovan 2014, 76; Barad, 2007).

By way of comparison, consider the encounter between ChickieNobs and narrator Jimmy in *Oryx and Crake*,

What they were looking at was a large bulblike object that seemed to be covered with stippled whitish-yellow skin. Out of it came twenty thick fleshy tubes and at the end of each tube another bulb was growing... The thing was a nightmare. It was like an animal-protein tuber. (2002, 246)

The ChickieNobs creature is an nightmarish “object” that revolts Jimmy, who opines that “this thing was going too far” (246). There is no suggestion of agency or mindedness, let alone ‘likeability’: ChickieNobs elicit only disgust. While the very idea of caring for ChickieNobs is ridiculed in *Oryx and Crake*, *The Space Merchants* does not foreclose the possibility of (unequal but genuine) relations of care between humans and semi-living forms like Chicken Little. Whereas “those ChickieNob things can’t even walk!” (Atwood, 2003, 405), Chicken Little “does tricks” (Pohl & Kornbluth 1956, 107)—a silent whistle is deployed to encourage her to change shape, forming passageways within her flesh through which ‘Consie’ resistance agents may pass and gain access to secret rendezvous points (107). Rather than an object of revulsion, Chicken Little is an agent in revolt (McHugh 2010): though originally engineered by corporate interests as an inexpensive meat source for the working class, she resists the regime that created

her through her enmeshment in a heterogenous confederation of intra-acting agencies (Bennet 2010, 94), including those of cellular tissue, agricultural scientists, meat consumers, technical systems, resistance agents, nutrient medium, meat harvesters and the political-economic system of capitalism itself.

Chicken Little is written in such a way that her agency exceeds that of an inert object— she is reactive, gendered, a ‘who’ not a ‘what,’ a weird semi-being enmeshed in strategic alliances with radical eco-socialists, despite her origins as a mass-produced and marketed piece of meat. Like Haraway’s cyborg, Chicken Little—designed as a cheap meat source— is “the illegitimate offspring” of patriarchal capitalism and state socialism and, like her cyborg sibling, she too is “exceedingly unfaithful” to her origins (1991, 152). “The capacity of Chicken Little to revolt alongside human social revolutionaries” foregrounds the “potentials for coordinating mutually sustainable cooperation with semi-living agency forms” (McHugh 2010, 196) and underscores what Plumwood has articulated as

the importance of our openness to the non-human other’s potential for intentionality, including their potential for communicative exchange and agency....open[ing] to rich forms of interaction and relationship which have an ethical dimension. (Plumwood 2002, 181)

This openness to intentionality, this willingness to hang suspended between familiar discursive constructs like “subject” and “object” and work towards relations of mutual flourishing between humans and other living or even semi-living entities, is crucial to

any critical ecofeminist project that strives towards ecologically embedded forms of ethical inter- (or intra-)relationality with Earth others.

Conclusion

Science fictional representations of in vitro meat are proliferate from and are braided back into discourses of tissue engineering technologies, food politics, culinary aesthetics and animal ethics, to name a few. Intra-acting with these wider sociotechnical discourses, SF narratives of IVM support, subvert and shape ideas about how this nascent technological practice might materialize within the real and imagined socioeconomic regimes of (post)modernity and beyond. The semi-livingness of IVM complicates the carnophallogocentric matrix in which symbolic violence towards animals is implicated in the emergence of human subjectivity; furthermore, the weird agency of these amorphous not-quite-organisms shatters scientific constructions of “the living organism” and philosophical notions of the autonomous subject alike. CAS’s emphasis on nonhumans as oppressed subjects need not elide possibilities for ethical alliances with semi-living forms like IVM; ecofeminism and new materialism’s more expansive scope offer vital correctives to such a foreclosure. As Plumwood argues, ethics “is a matter of trying to understand what kinds of care, regard and responsiveness might be possible for us” in relation to the more-than-human world—including techno-biocultural entities like IVM (2002, 165). The following chapter continues my project of troubling the autonomous and individual subject by diffractively reading the counter-epistemic evolutionary theory of symbiogenesis through the estranging lens of science fiction to argue that life on Earth has been hybrid and multiple since its inception, unfolding not

only through linear and filial lines of succession but also via dizzyingly tangled chimerical and symbiotic mergers that demolish fantasies of autonomous selves and human ontological supremacy (Margulis 1967; 1991; 2007; Haraway 2013; 2014; 2016).

5. Me(a)tamorphoses: Indigestion, Infection and Symbiogenesis in SF

New developments in nutritional and genetic sciences lend weight to the truism that it is impossible to eat and remain unchanged. Understanding food not simply as fuel but “as a miasma of biologically active molecules in which genomes are immersed” and expressed (Landecker 2011, 169), nutritional epigenetics encounters a human body “teeming” with genetic components from the food we ingest (Landecker 2013, 1), raising provocative questions about the integrity of the subject in a world of vibrant, agential and intra-acting matter. Promiscuous exchanges of regulatory signals and genetic material between eater and eaten threaten the skin-encapsulated human self with contamination, corruption and even dissolution—a discourse of infection and contagion that reveals a deep-seated anxiety regarding the threat of the other to the self. However, that same transcorporeal “persistence of others in the flesh” (ibid) also evokes new avenues of transformation and response-ability for the ecologically embedded more-than-human subject (Alaimo 2010; Haraway, 2008a). Haraway (2013; 2014; 2016) engages the evolutionary theory of symbiogenesis (Margulis 1967; 1991; 2007; Margulis & Sagan 1997: 2002: 2007; Margulis, Asikainen & Krumbein 2011) as a powerful alternative origin story in which agents of alterity become together through the alimentary encounter. A secular creation myth hinging not on “cooperation” or “competition” but rather “indigestion” (Haraway 2014, np; also Margulis & Sagan 2002, 13), symbiogenesis contests and complicates what Foucault identified as origin

narratives of fixed essence (1971, in Peppers 1995, 48). instead understanding subjectivity as a dynamic, entangled and always-already multiple. This chapter diffractively reads symbiogenesis theory through two contrasting SF texts centrally concerned with meat-eating, symbiosis and subjectivity. Published over thirty years apart and written by profoundly differently-positioned authors, Clifford D. Simak's short story 'Drop Dead' (1956) and Octavia E. Butler's groundbreaking *Xenogenesis* trilogy (2000[1987-9])⁶⁹ illuminate and interrogate different approaches to symbiogenesis as infectious threat or ambiguous boon to the human subject, with differential implications for that subject's response-abilities towards the more-than-human world.

Disease as a relationship

SF's "extensive tradition" of narratives concerning infection and transformation (Magnone 2016, 110) emerge in intraaction with real-world immune system discourses and changing ideas about 'self' and 'non-self' (Haraway 1991). Contagion narratives trade on an "immunitary logic" of self-other hyperseparation that seeks to inoculate the munus of the (human) social body against the taint of the (human or nonhuman) Other (Agamben 2004; Haraway 1991; Plumwood 1994, 2002). Constructions of AIDS as a gay plague or Ebola as a threat to civilization from "deepest, darkest Africa" demonstrate the efficacy of infection narratives in categorizing and ranking human difference; however, the indiscriminate rapacity of infectious microbial agents threatens to dissolve not only these intra-species boundaries, but the outline of the the individual

⁶⁹ Although originally published as *Dawn* (1987), *Adulthood Rites* (1988) and *Imago* (1989), this trilogy was conceived as a single narrative and my references use the sequentially paginated omnibus edition, published as *Lilith's Brood* (2000). Like most critics, I use the trilogy's original name, *Xenogenesis*.

human subject as well (Schell 1997, 96). Citing an influential immune system textbook of the 1980s wherein “the dangers to individuality are almost lasciviously recounted,” Haraway details how dominant immunological discourses emphasize “the aggressive defence of individuality” against the threat of the microbial multitudes (1991, 223). Calling the question of what counts as an individual “the nub of the matter,” she argues that for immune system discourse “everything else is ‘not-self’ and elicits a defence reaction if boundaries are crossed” (1991, 223-4). This parsing of infection in terms of a military encounter between the (individual) self and the (multitudinous) other, in which not-self conflates with “foreign” and therefore threatening (Martin 1994) overwhelmingly defines the dominant discursive parameters of animal meetings-with microbes (Hird 2009, 26). Filmic SF is particularly fond of this pathogen paradigm; movies such as *Andromeda Strain*, *Outbreak*, *I Am Legend*, *12 Monkeys* and *28 Days Later* engage these “popular, alarmist ideas” about microbes by “constructing infection in terms of contagion,” debilitation, death or abjection (Bollinger 2009, 377). These narratives represent disease as a rampant invader, threatening the purity and safety of the community, the home, the human body itself. In a genre so often motivated by the drama of Us versus Them, infection can be the ultimate Other: nonhuman, irrational and utterly amoral (Magnone 2016, 109).

Through the “invasion” of the ostensibly pure human body by infectious “others,” the supposedly inviolable border of the individual self is threatened with dissolution.

From a broader biological perspective, however, animal meetings-with microbes are inescapable and absolutely necessary to Earthly life, “Infection is now and always has

been unavoidable. The only beings that have prospered on this planet have done so not because they learned to avoid infection but because they learned to thrive on infection” (Callahan 2006, 18). Ten percent of the dry weight of the human body is bacteria—without microbial others, “we would sink in our feces, drown in our urine and choke on the carbon dioxide we exhale” (Margulis 2007, 35). They are our most intimate and ubiquitous companion species, “messmates’ without whom life would be impossible (Haraway 2008a). Pathology is the exception, not the rule, to encounters with microbes. In a very real sense “disease is a relationship’ (Haraway and Goodeve 2000, 75), albeit one characterized by “an overstepping of the line by one side or the other, a biological misinterpretation of borders’ (Thomas, in Hird 2009, 86). Contagion “is co-implicated, it signifies as much debility and death as it does the possibility of flourishing” (Hird 2009, 86).

Symbiosis and symbiogenesis

Whether debilitating or enlivening, any enduring human-microbe encounter is fundamentally a relationship of symbiosis—“an ecological term that describes two or more organisms of different kinds in protracted physical contact” (Margulis & Sagan 2002, 18). Symbiosis describes the long-lasting cohabitation of differently-named organisms in corporeal intimacy (Hird 2009, 58; Margulis & Sagan 2002, 18). This intimacy may be obligate or optional, parasitic or pathogenic, as long as it persists for the bulk of the life of at least one of the partner species (although disease may of course cut short the lifespan of either party involved). The possibilities for flourishing latent in microbial encounters come to fullest fruition in the phenomenon of

symbiogenesis, “long term stable symbiosis that leads to evolutionary change” (Margulis & Sagan 2002, 12). Yoking together portions of totally different genomes to “form a symbiotic consortium which becomes the target of selection as a single entity” (Mayr 2002, xiii), symbiogenesis occurs with “the appearance of a new phenotype, trait, tissue, organelle, organ, or organism formed through a symbiotic relationship” (Hird 2009, 58).

The paradigmatic example is the mitochondria in animal cells:

mitochondria live inside our cells but reproduce at different times using different methods than the rest of the host cell. They are descendants of ancient, oxygen-using bacteria that were either engulfed as prey or invaded as predators. These bacteria took up residence inside ancient motile cells to form an uneasy alliance. (Margulis 2007, 31)

Ancient symbioses between single celled organisms and free-living mitochondrial bacteria lead to the symbiogenic emergence of a new intra-cellular organelle; still nestled within the cells of all Earthly animals, this mitochondrial organelle enables eukaryotic organisms “to survive the ravages of the poisonous gas oxygen” (Hird 2009, 29). Rather than the other being a threat to be contained or repelled, the case of mitochondria reminds us that it is only through the enfolding of self with other that animal life on Earth ever became possible.

Despite half a century of Russian botanical scholarship outlining the theory,⁷⁰ symbiogenesis only came to the attention of the Euro-American scientific mainstream in the late sixties due to the efforts of American evolutionary biologist Lynn Margulis, whose formative paper “On the Origin of Mitosing Cells” was rejected by fifteen journals before finally achieving publication in 1967 (Balcombe 2010, 103; Bollinger 2010, 34). Margulis hypothesized a primordial amalgamation of eubacteria with archaebacteria as the origin of eukaryotic cells: “together, as a permanent merger, this ancient chimera in the mid-Proterozoic Eon became the earliest nucleated cell. The swimming, sulfur-metabolizing chimera was an ancestor to all nucleated life forms alive today” (Margulis, Asikainen & Krumbein 2011, 4). The symbiogenic origins of organelles such as chloroplasts and mitochondria have now achieved “biological orthodoxy” and are taught in high school textbooks (Margulis & Sagan, 2002, 30-31), though the fuller implications of the theory—namely, that all eukaryotic (enucleated) cells owe their existence to ancient fusions of once-free living bacteria and that symbiogenesis is the main engine of evolutionary change—remain controversial (Hird 2009).

A “new age feminist plot”

The failure of the Russian botanists to find an audience in the Euro-American scientific community can be partially explained by vagaries of geopolitics, but the torturous route

⁷⁰ The phenomenon of symbiogenesis was first described and named in 1909 by Russian naturalist Konstantin Merezhkovsky, who argued that chloroplasts in plant cells had originally been separate microorganisms. His successor Boris Kozo-Polyaznsky “showed clearly in 1926 that symbiogenesis is a major creative force” in speciation (Margulis & Sagan 2007, 44-5) and American anatomist Ivan E. Wallin concurrently and independently came to a similar conclusion, arguing that symbioses of all kinds had played a crucial role in the evolution of organisms with enucleated cells. None of these pioneers made much of an impact in the wider scientific world; “their studies were ridiculed and nearly forgotten” (Margulis & Sagan 2007, 44-5; Fet 2011)

to publication taken by Margulis' seminal article demonstrates that it was always something more than the Iron Curtain that kept symbiogenesis from mainstream acceptance.⁷¹ As Keith Ansell Pearson argues, symbiosis

has had a curiously awkward history which reveals much about the anthropocentric determination of the subject and about hominid fears of contamination. It has played and continues to play, a subversive role in biology since it challenges the boundaries of the organism (1997, 132, in Hird 2009, 66).

The anthropocentrically-determined subject as an autonomous and impermeable “self in a case” has long functioned as one of modernity’s “recurrent leitmotifs” (Elias 1978, in Margulis & Sagan 2007, 21); symbiosis complicates this notion of the human as a “skin-encapsulated ego” separate from the rest of the teeming masses of Earthly life (Watts, in Margulis & Sagan 2007, 17). While symbiogenesis continues Darwin’s demolition of human exceptionalism and his expression of human-‘nature’ continuity and human-animal kinship, the theory’s emphasis on shifting alliances of interdependent actants as a significant evolutionary driving force complicates Darwin’s theory of natural selection, particularly mid-late twentieth-century neo-Darwinist articulations of evolutionary processes that reified competition on a genetic level. A microbial counter-epistemology, symbiogenesis also challenges the zoocentric, “big like us” understanding of the world as a stage upon which human and other animal actors, with varying degrees of skill, play out the evolutionary drama (Hird 2009). Symbiogenesis theory emphasizes that big-like-us creatures such as ‘organisms’ and ‘individuals’ are, as Haraway insists,

⁷¹ I use the term ‘iron curtain’ here in an expansive sense congruent with the term’s long history. The first English-language reference to an ‘iron curtain’ separating Soviet Russia from the West is attributed to feminist social reformer Ethel Snowden in her 1920 book *Through Bolshevik Russia* and by the mid-twenties at least two other publications had followed suit (Morson 2011, 125-6)

“ontologically contingent constructions from the point of view of the biologist, not just in the loose raving of a cultural critic or feminist historian of science” (Haraway 1991, 220). From a symbiogenic perspective, the individual actor-organism is really a consortia of macro- and microscopic creatures living in corporeal intimacy; it is through this “collaboration of many different lineage-forming entities” rather than (solely) the success of the individual organism (or that organism’s genetic blueprint) that the evolutionary process unfolds (Dupré & Malley 2009, 19).

Challenging not only the zoocentric and anthropocentric subject but the androcentric one as well, ‘mainstream’ biology initially derided Margulis’ articulation of symbiogenesis as a “new-age feminist plot” (Slonczewski 2013, np). Bollinger argues that this may be because “the notion of selfhood through incorporation is implicitly tied to the feminine”:

After all, we are accustomed to considering that women may sometimes incorporate other selves during pregnancy, with their individuality both challenged by and reaffirmed through such incorporation. (2010, 35)

Whether or not symbiogenesis (and symbiosis more generally) evokes an “implicitly feminized selfhood” (Bollinger 2010, 35), feminist theorists have found in the theory a rich counter-epistemology to masculinist meta-narratives of evolution as driven by ruthless individualistic competition a la “Man the Hunter” (Gontier 2007; Margulis 2007; Haraway 1989; Le Guin 1989; Landau 1989). New materialisms and posthumanisms have likewise creatively engaged the theory of symbiogenesis to articulate the subject as always already multiple, always-already enmeshed in and emerging alongside a

legion of other agencies. Symbiogenesis reveals the autonomous individual subject as a biologically untenable construction: “the evolution of our ‘selves’ is already polluted by histories of encounter” (Tsing 2015, 29). The living subject, human or otherwise, does not precede the relational encounter with alterity but emerges through it (Barad 2007) as an intraactive assemblage of multiple and differentially converging materialities, species and allegiances (Braidotti 2013, 144).

Symbiogenesis in SF: “inheriting and embodying the eaten”

If, as Pearson and Bollinger argue, symbiosis and symbiogenesis challenge the modern anthro- and androcentric determination of the subject, it only makes sense that SF would find in these theories a rich repository of thematic material with which to continue the genre’s longstanding exploration of more-than-human agency and subjectivity (Vint 2010). SF has engaged symbiogenesis theory for decades, with the transformative potentials of microbial meetings-with running the gamut from deleterious to transcendental. Sometimes the transformation that microbial infection effects deforms the human subject to the point of annihilation (Watts 1999; Hideki 1995), but critics point to the work of Greg Bear (*Blood Music*, 1985, *Darwin’s Radio*, 1999; *Darwin’s Children*, 2003), Joan Slonczewski (*Door into Ocean*, 1986; *Brain Plague*, 2000), Nicola Griffin (*Ammonite*, 1992), Storm Constantine (*Wraeththu*, 1993) and Octavia Butler (*Clay’s Ark*, 1986; *Xenogenesis*, 2000[1987-9]) for examples of science fictional symbiogeneses of a more ambiguous nature in which infection can be “a door opening onto a possible new future of community and inclusion” for humanity’s own ‘others’ (Schell 1997, 123; also Thomas 2000, Bollinger 2009; 2010; Magnone 2016;

Schell 1997; Alonso 2013; Ferreira 2010; Theiss 2017). The dominance of women authors in the short list above demonstrates that women science fiction writers have been at the forefront of imagining the posthuman possibilities of infectious transformations (Thomas 2000), further evidence for the intra-activity of symbiogenesis and feminist discourse. However, the robust body of feminist literary criticism on science fiction and symbiosis/symbiogenesis (Bollinger, 2009; 2010; Magnone 2016; Schell 1997; Alonso 2013; Ferreira 2010; Theiss 2017; Pak 2017; Dowdall 2017) has thus far elided what for Haraway and Margulis is too compelling to be ignored: that “the origin of complex cellularity is an act of indigestion” (Haraway 2014, np). The merger of eubacteria with archaeobacteria that gave rise to the first eukaryotic cells was a nutritive encounter of “abortive cannibalism,” wherein one microbial party was “eaten but not digested” by another (Margulis & Sagan 2002, 13; Hird 2009, 82). According to the theory of symbiogenesis, complex life on earth began because “some bacterial sorts of critters ate others and got indigestion and stuck around with each other” (Haraway 2014, np).⁷² This ancient alimentary “truce rather than war” gathered self and non-self together in a “tense proximity” (Crist & Tauber 2000, 524) through which speciation and the evolution of multicellular life became possible.

⁷² In line with the concerns of this monograph, my account of the rise of eukaryotes foregrounds eating; however, others have found the sexual dimension of the encounter more compelling. Consider Shaviro (1997),

No cellular reproduction had occurred, yet a new, monstrous hybrid was born, the first sexual being, the first infection. The universal feeding frenzy was transformed into a delirious erotic intermingling... And that's why plants and animals have gonads today. It's also why our cells are stuffed with organelles, mitochondria that let us breathe oxygen, chloroplasts that plants use to photosynthesize. These are all contingent effects of unplanned, miscegenetic encounters, the evolutionary fallout of prokaryotic sex. (1997, 39)

Haraway's enthusiasm for the transformative possibilities of eating emerges during a paradigm shift in the life sciences regarding metabolism and reproduction, long understood as the "two essential but essentially separate features of life" (2013, 8; Dupre & O'Malley 2009, 17). In the traditional epistemological division of labour, reproduction proceeds "according to a deterministic plan laid down genetically in DNA" (Wheeler 2017, 295) and food is simply a source of fuel to be converted to energy. Developments in nutritional epigenetics suggest instead that metabolism and gene expression should be understood as intra-active rather than discrete processes. Rather than DNA being a static "set of instructions to build a body from scratch" (Wheeler 2017, 295), we should approach it as a dynamic poem that is constantly being edited and rewritten through the nutritive intra-action of eater, eaten and Umwelt (ibid; Landecker 2013, 8). Nutritional epigenetics and symbiogenesis theory alike highlight "the continuing presence of the eaten in the eater" (Landecker 2013, 5):

If we eat bacteria and bacteria live in us and their genetic material floats around in our blood stream doing who knows what and their chemical signals interact with our gut cells and our brain cells and probably our placental cells (for those of us who have them from time to time) and we eat corn and rice and fungi and honey and many other things that interact with chromatin configuration and gene transcription and cell division and we inherit microbes from our families at the same time as bearing the imprint of changed gene regulation from our forebears' diets—multiply inheriting and embodying the eaten—then, is it still possible to say that the metabolic and the reproductive are fundamentally different aspects of life, bound together for evolutionary convenience? (8)

The epistemological “split between the replicative and the metabolic” is no longer tenable: “there is no genetic action, no manifestation of a genome, without metabolism” (Landecker 2013, 4, 8). Epigenetic nutritional sciences encounter not a pure human body converting food to fuel, but a chimerical “whirlpool” in which genetic and chemical material from the eaten persist in the flesh (8), an intraactive process of differential multispecies becoming. “Getting hungry, eating and partially digesting, partially assimilating and partially transforming”; according to Haraway, “these are the actions of companion species” (2016, 65).

Simak's symbiogenesis

Although underrepresented in the existing critical literature on symbiogenesis in SF, Clifford Simak's 'Drop Dead' (1956) is absolutely a story of symbiogenesis, a revenge-of-the-microbes tale in which alien bacteria infect and abject a group of arrogant, instrumentalizing scientist-economists seeking to turn a profit from the spoils of a 'virgin world.' Known mainly for the pastoral quality of his stories (Kingsley Amis called Simak “the science fiction poet laureate of the countryside” [1963, 62]), ecocritical readings of Simak's oeuvre have led to the author's reassessment as “a significant pioneer” of ecological or Anthropocenic science fiction (Stableford 2009, 159; Cokinos 2014; Canavan 2016a, 149) and a notable figure in the genre's long history of speculation about animals (Vint 2008; Gordon 2010). A marked (if muted) “anti-capitalist streak” permeates his imaginings (Pringle 1997, 24; Cokinos, 2014), alongside a deep distrust

of anthropocentric grand narratives (Clareson 1976, Bailey 1981).⁷³ *City* (1952), for example, reads as a melancholic “version of retrospective Anthropocene futurity” (Canavan 2016a, 150; Gordon 2010), haunted by the spectre of widespread animal extinctions, ecological collapse and “the anticipatory memory of our own deaths” (Canavan 2016a, 150; Scranton 2015). It is frequently “the aliens who colonize or inherit the Earth in Simak’s cosmos, not the other way around” (Lomax 1989, 137). His writing reveals both an acute awareness of and a deep dissatisfaction with, then-dominant evolutionary narratives that aggrandized competitive individualism.⁷⁴

Caustically observing that while “back in 1950, Man [sic] thought he was the whole works,” Simak suggests that a sober consideration of the available evidence suggests that maybe “he wasn’t so hot after all” (Simak 1940, in Clareson 1976, 68). Framing ‘Man’s’ “desire to beat the other fellow to it, the hankering for glorification” as “old vices...[that] had become virtues from his viewpoint and raised him by his own bootstraps,” Simak sees no glory in the cliché that “conflict is our meat” (Simak 1946, 188, in Clareson 1989, 73). That “old hell-for-leather creed” may have “taken man up the ladder,” but it can only take “him” so far—a new creed is needed (“Hunch” 1943, 35, in Clareson, 1976, 68). Simak’s early work demonstrates a fascination with symbiosis as

⁷³ Simak’s anti-capitalism is usually expressed as a “subtle inveighing against” the dominant economic system rather than any politicized articulation of a socialist or anarcho-libertarian alternative (Bailey 1981, 65). The novel *They Walked Like Men* (New York, Doubleday 1962) constitutes Simak’s most overt critique of capitalism—aliens “legally” invade Earth by buying up all the real estate and augment this acquisition with their ability to literally shapeshift into commodity form, essentially turning consumer goods into enemy sleeper agents overnight. The story’s dramatic climax features unsuspecting salarymen engulfed and invaded by the fruits of their own alienated labour, as cars, dolls and rest of the assorted bric-a-brac of consumer capitalism flex their agential muscles and threaten the human subject with bodily incorporation (Bailey 1981,65).

⁷⁴ e.g. “Sunspot Purge,” 1940; “Hunch” 1943 and Hobbies, 1946 (collected in the *City*, 1952); *Time and Time Again*, 1951. See Clareson 1976

a corrective to human egoism; in *Time and Time Again* (1951), for example, the encounter with an alien being that can only be described as a “symbiotic abstraction” prompts the human protagonist to an epiphany regarding the connectivity and multiplicity of all galactic life. ‘Drop Dead’ continues this deployment of symbiotic tropes as a counter-epistemological corrective to the evolutionary doctrine of competitive individualism, albeit one articulated in a rather cynical register (Lomax 1989, 143 n. 5). The story recounts how a group of intrepid capitalist-scientists in search of lucrative new food products are ultimately transformed into meat themselves. Like so much of Simak’s writing, the narrative pointedly deflates the well-worn SF trope of “galactic man’ triumphant throughout the universe” (Clareson 1976, 68), in this case by suggesting that neo-Darwinist fantasies of genetically-determined competitive individualism, fostered by an economic and social system of capitalist delirium, might someday undo the very configuration of subjectivity they demand. Variouslly hailed as “an ironic parable” (Stableford 2009, 159) a “bitterly amusing story” (Ewald, 2006, 59) and “a completely improbable gimmick yarn” (Schuyler Miller 1962, 160), ‘Drop Dead’ brings the figure of the ‘modern man’ face to face with the inexorable alterity of the alien, in an encounter that gorily dismembers the cherished integrity of the autonomous human subject.

In ‘Drop Dead,’ an interplanetary “Ag Survey” team lands on a distant exoplanet on a mission of interplanetary biopiracy, tasked with identifying potential food sources and ultimately extracting profit from the biological riches of so-called “virgin planets.”

Although baffled by the “simplicity” of the local ecology, which seems to consist of just

one species of large motile animal subsisting off of a single species of grass, the survey team’s curiosity is piqued when they get up close to one of the cow-sized “critters” (6), who “obligingly” (16) drops dead right in front of the scientists.⁷⁵ The creature seems to be a “crazy quilt” (8) of different textures and colours, with vegetation sprouting in lieu of horns. Upon dissection, the scientists discover that the patchwork appearance of the critter goes beyond skin deep—the entire body is a motley fusion of materialities, various types of flesh and fruit from seemingly disparate species all miraculously growing together in one creature. Quickly the agricultural scientists realize the profit potential latent in this unassuming, “mixed-up critter” (10):

It’s a walking menu. It's an all-purpose animal, for sure. It lays eggs, gives milk, makes honey. It has six different kinds of red meat, two of fowl, one of fish and a couple of others we can't identify. (18)

Elated at their “discovery,” the scientists dig deeper and find that the critter’s patchwork composition seems to have something to do with the “highly adaptable” bacteria that “swarm” through the flesh of the creature (19).⁷⁶ Tissue samples show that these bacteria are found “everywhere throughout the entire animal. Not just in the bloodstream, not in restricted areas, but in the entire organism”—even “doubling in

⁷⁵ The assertion that these critters, who “obligingly drop dead” (16) upon encountering a threat, “looked like something from the maudlin pen of a well-alcoholized cartoonist” (6) suggest Simak was probably inspired by cartoonist Al Capp’s classic comic strip *Li'l Abner*. Popular in the 1940s and 50s, the *Li'l Abner* comic strip features a bowling-pin shaped creature called the Shmoo, which has the ability to lay eggs that taste like any kind of meat one desires—in Capp’s own words, “When you look at one as though you'd like to eat it, it dies of sheer ecstasy” (1949, 18). Simak was aware of Capp’s creation, though perhaps not a fan of it: in *Out of their Minds* (1970) a character refers to the “vapid” creatures of the modern imagination, *Li'l Abner* among them (in Clareson, 1976, 77)

⁷⁶ Simak’s emphasis that the mysterious bacteria all belong to a single species both extends the story’s thematic preoccupation with ecological austerity and evokes bacteria’s continuing evasion of taxonomic capture—the species concept tends to break down when faced with the mutability of the microbial (Hird 2009).

brass” to take the place of brains and central nervous systems, which these “mixed up critters” apparently have no use for. Each “critter” is an assemblage of different species living together in a single ecological unit—in other words, each is a holobiont, a term originally coined by Margulis (1991) meaning “entire being” (Haraway 2016, 60). The moniker supplements the misleadingly unitary term ‘organism’ and sidesteps the nonsensical hierarchy of ‘hosts’ and ‘symbionts’ that frequently obscures attempts to talk accurately about living creatures (Haraway 2016). The critters of ‘Drop Dead,’ like all the critters of Earth including the critter reading this page, are not singular organisms or hosts-plus-symbionts, but holobionts—assemblages of various micro-and macrobiotic agencies intra-acting sympoetically in an ongoing a process of ‘making with’ to comprise the ontoepistemological entity variously understood as ‘the organism’ or ‘the self’ and which is biopolitically interpellated into the position of ‘the subject’ (Haraway 2016). The bacteria that permeate the critters’ bodies are are ubiquitous across the planet’s surface, shaped by and shaping the ecology of their native world. They are unambiguously agential and effective: they “can acclimatize. They can meet new situations” (Simak 1956, 30). And they can apparently remix the genomes of different species to form a symbiotic consortium that becomes the target unit of evolutionary selection (Mayr 2002, xiii). In other words, the bacteria of ‘Drop Dead’ are just like the bacteria of Earth—they are agents of symbiogenesis. Simak’s description of chimerical critters swarming with agential bacteria foregrounds their materiality as an agglomeration of ancient symbiotes:

the color squares that gave the critters their crazy-quiltish look were separate kinds of meat or fish or fowl or unknown food, whatever it might be. Almost as if each square was the present-day survivor of each ancient symbiont. (20)

Like the varieties of meat that make up a critter, Earthly organisms also contain the present day survivors of ancient symbionts in the form of mitochondria and chloroplasts in animal and plant cells. Though the term ‘symbiogenesis’ is elided within Simak’s story in favour of the more generic “symbiosis,” the author’s demonstrable familiarity with contemporary evolutionary narratives and his previous engagements with symbiotic themes strongly suggest the writer had some familiarity with counter-hegemonic evolutionary theories such as symbiogenesis.

Evolutionary heresies

Simak’s scientists find the “wholesale symbiosis” of the critters’ planet dangerously antithetical to their particular evolutionary doctrine, which hews pointedly close to the evolutionary orthodoxy of the 1950s anglophone world inhabited by Simak. Twentieth century Euro-American evolutionary science was highly invested in the ‘modern synthesis’ of neo-Darwinism. Essentially a melange of “the twin master sciences of the twentieth century,” neo-Darwinism combined neoclassical economics and population genetics to reify “the self-contained individual actor, out to maximize personal interests, whether for reproduction or wealth” (Tsing 2015, 28). This ‘modern synthesis’ provided an interpretation of Darwin’s theory that privileged “chronic, bloody competition among individuals and species” as the driving force of evolutionary change (Margulis 2007, 32). Then and now, neo-Darwinism operates via a “double privileging” (Hird 2009, 67) of

autonomous organisms (and/or their genes) and sexual reproduction (as a mechanism for gene transfer) as the two key forces in evolutionary change (Hird 2009, 66).

Symbiogenesis challenges both of these tenets; it understands “autonomy as centrally exhibited in collaboration rather than just rugged independence” (Dupre & Malley 2009, 20), taking the organism-as-consortia and not the organism-as-individual (or the individual-as-genome) as the evolutionary unit of selection (Hird 2009, 67). It also challenges “the continued anthropomorphic preference for vertical genetic filiations through sexual reproduction” (Hird 2009, 66), emphasizing instead the extent to which genetic and cytoplasmic material is shared horizontally between organisms, by “contamination rather than linear filiation” in processes like lateral gene transfer (Parisi 2004, 60; Hird 2009, 66-7).⁷⁷ Symbiogenesis, a process of speciation hinging on “the formation of associations [and] the breakdown of genetic, physiological and spatial isolation between organisms” (Margulis 1976, in Hird 2009, 65), troubles the central neo-Darwinist tenets of reproduction and individual competition as the twin engines of evolutionary change. Indeed, renown evolutionary biologist Richard Dawkins has even gone so far as to declare that the theory of symbiogenesis “denies the very heart of [Darwin’s] evolutionary theory” (in Hird 2009, 65).

This charge—that symbiogenesis and symbiosis more generally are anti-Darwinist—is vehemently denied by Margulis (2002): “Everyone today who studies modern biology, indeed virtually every scientifically minded modern person, is a Darwinist” (8), she

⁷⁷ As Parisi argues, when ‘heredity is defined as the sexual transmission of genes from one generation to the next...anything else, transmitted sexually or not, is by definition foreign, disease, retrogressive’ (Parisi 35, 40; in Hird 2009, 67)

declares, cautioning that “Darwin’s original views must be distinguished from those of his successors” (8). While there is no way to know his thoughts on either neo-Darwinism or symbiogenesis, Darwin long ago put his position on the multiplicity and complexity of evolutionary processes “beyond all doubt” (Midgley 1995, xxii), writing in *The Origin of Species* (6th ed.) that despite having been “much misrepresented” he had never argued that natural selection precluded other evolutionary possibilities: “I am convinced that natural selection has been the main, but not the exclusive means of modification” (1872, 395; in Midgley 1995, xxii). Darwin’s own protestations notwithstanding, the idea has persisted that the process of evolution is wholly reducible to the mechanism of natural selection and that natural selection is in turn wholly reducible to ‘competition.’ It is as readily apparent in the attitudes of ‘Drop Dead’s’ future neo-Darwinists as it was in those of the twentieth century. The interstellar survey team is hard-hit by “the lingering hint of wholesale symbiosis” suggested by this planet of bacteria, critters and grass, a phenomenon “that violated all the tenets [they’d] accepted as the truth” (14). “Where’s the competition? Where’s the evolution?” they ask despairingly, seamlessly eliding the two (19). “There was no competition for survival. There was no dog eat dog. There were just critters cropping grass” (22), “[I]ike, long ago, all the life-forms said let’s quit this feuding, let’s get together, let’s cooperate” (20). For Simak’s scientists, the idea that cooperation might trump competition in the evolutionary arms race is shocking and disheartening—an affront to the civilized ideals of both of neoliberal capitalism and neo-Darwinian evolutionary theory. However, as Hird points out in passage that deserves quoting at length,

the creation of new species through symbiogenesis may be anything but cooperative: we might just as easily characterize these phenomena as violent. A fungus attacking an alga for nutrients, after say twenty-five thousand times, led to the symbiotic emergence of lichen. Moreover, certain associations may be defined as both parasitic and mutualistic under different environmental conditions and/or during different stages. (Hird 2009, 68)

The line between evolutionary competition and cooperation is thin and fluctuating: “guests and prisoners can be the same thing and the deadliest enemies can be indispensable to survival” (Margulis & Sagan, 1997, 121). “Vogue terms” like “competition,” “cooperation,” “mutualism,” “mutual benefit,” “energy cost,” and “competitive advantage” are ill-fitting and misleadingly simplified metaphors “borrowed from human enterprises and forced on science from politics, business and social thought” (2002, 16-17). For Margulis and Sagan, this “entire panoply of neo-Darwinist terminology reflects a philosophical error” (2002, 16). Haraway concurs, pointing out that “virtually the only actors and story formats of the Modern Synthesis” are “bounded units (code fragments, genes, cells, organisms, populations, species, exosystems) and relations described mathematically in competition equations” (2016, 62). Midgley dubs neo-Darwinism “biologicalism Thatcherism,” a celebration of evolution as “a ceaseless crescendo of competition between essentially ‘selfish’ individual organisms, each making ‘investments’ for its own separate advantage” and “manipulating” one another to get ahead (Midgely, 1979[1995], xvi). This neo-Darwinist insistence on a Euclidean playing field of rational individuals engaged in game a perpetual one-upmanship “offer[s] scientific respectability to the myth that power resides essentially in competitive

commercial mobility” (xviii), in the process obscuring and impoverishing the rich and varied metabolic and ecological relations and exchanges that comprise the ongoing process of ecological sympoiesis (Margulis 2002,17).

The most galling aspect of symbiogenesis for Simak’s future neo-Darwinists is the implication that lowly bacteria are crucial players in evolutionary and ecological systems. According to Hird, the emphasis on the agency of “big-like-us” animals over the forces exerted by a horde of invisible microbes constitutes “the heart of the conflict between [neo-Darwinist] evolutionary and symbiogenesis theories” (2009, 66). This pervasive zoocentrism is profoundly shaken by the “the counter-epistemic privileging of bacteria found in symbiogenesis theory” (Hird 2009, 67). In an earlier story, Simak punctured the self-assuredness of “galactic man” by suggesting that “it was the sunspots in the first place that enabled him to rise up on his hind legs and rule the roost” (Simak 1940, in Clareson 1976, 68). In ‘Drop Dead,’ Simak finds a more plausible candidate than sunspots to enlist in his subversion of scientific homochauvinism: maybe instead of self-making ‘Man’ pulling himself up by his bootstraps, it was the bacteria pulling the strings all along. Of all the supposed evolutionary transgressions of ‘Drop Dead’s’ symbiotic planet, the survey team finds the agential bacteria “the worst of all” (23). Like his real-world counterparts, Simak’s biologist in particular is deeply disturbed by the implication that “the critters are no more than fronting for a bacterial world” (24), an epistemology that flouts the dominant neo-Darwinist hierarchy of animacy, which (as the biologist points out) usually “associate[s] symbiosis with the lower, more simple forms of life” (13). In subverting this hierarchy and its attendant just-

so story of Man the self-fashioning agent of progress, Simak also anticipates the seismic impact microbiology was to have on evolutionary biology in the late twentieth century. Long dismissed as inconsequential or maligned as pathogenic, post-Pasteurian microbiology argued that bacteria might in fact be seen as the “less glamorous backstage machinery that actually produces the show” (von Helmholtz, in Hird 2009, 22). ‘Drop Dead’ actively (if ambiguously) engages this incipient microbial turn to critique what Simak has elsewhere castigated as “the smug egoism that made [‘Man’] the self-appointed lord of all creations’ (“Hobbies” 1946, 188, in Clareson 1976, 73). Against this myopic and “unwavering belief that [‘Man’s’] was the only kind, the only life that mattered” (ibid), throughout his body of work Simak “attempts to enunciate a vision which sees all sentient creatures, however diverse their forms, as equal parts of a single community which is itself the purpose and meaning of the galaxy,” as Clareson puts it (1976, 75). This vision is also deeply relational; as one of Simak’s proganists comes to realize in a previous novel,

We are not alone. No-one is ever alone. Not since the first faint stirring of the first flicker of life on the first planet in the galaxy that knew the quickening of life, has there ever been a single entity that walked or crawled or slithered down the path of life alone (Simak, *Time and Time Again* 1951, 105, in Clareson 1976, 76).⁷⁸

However, as ‘Drop Dead’ makes crystal clear, those invested in the zoo-anthropocentric epistemic paradigm of the ‘modern synthesis’ are likely to find this dethroning of big-like-us critters in general and autonomous individual ‘Man’ in particular, tough to swallow.

⁷⁷ Cokinos(2014) argues that, in this passage, Simak here “extend[s] the notion of Aldo Leopold’s Land Ethic to the universe itself”(94).

The story confronts a group of self-assured neo-Darwinists with incontrovertible evidence for a symbiotic world, a revelation so shattering it apparently brings the indoctrinated explorers to the verge of mental breakdown.

Bacteria bite back

If zoocentrism privileges 'big like us' animals in evolutionary and ecological narratives, anthropocentrism simply takes this bias one step further by elevating the human (or 'Man') as a uniquely special animal who, through cunning and brilliance, has proven the fittest of all and has rightfully ascended to the top of the evolutionary heap. The Ag Survey team of 'Drop Dead' epitomize this ideology of human supremacy that relegates the entirety of the nonhuman world to the status of mute resource for human consumption. "Spearheads who went out to new worlds, some of them uncharted, some just barely charted," these teams scour the galaxy "for plants and animals that might be developed on the experimental tracts" of the centralized agricultural planet Caph VII (1956, 12). This mission is fundamentally profit-driven: Simak sketches a universe of economic inequality wherein agricultural survey teams compete for bonuses and glory by procuring exotic organisms to exploit as comestible commodities. As befits their mission, these survey teams operate within a ruthlessly instrumentalizing and anthropocentric paradigm, bringing along a full complement of experimental animals (Earthly and otherwise) to dissect in order to determine the safety of local conditions: "you can start killing off the little cusses to your heart's content," one team member tells another (16). Simak's scientists are steeped in an epistemic culture that denies the agency, subjectivity and entanglement of creaturely life by backgrounding and

instrumentalizing the more-than human world; like Traviss' team of eager vivisectionists (2004), Simak's own survey team is blithe to the power dynamics of the alien world on which they find themselves.

It is particularly telling that the scientists' response to the discovery that 'critters' are chimeras of ancient symbionts is not wonder, but a kind of despair that can only be mitigated by the violent reassertion of humanity's rightful place at the top of the food chain. Biological remnants of ancient symbionts become mere varieties of 'meat' or 'unknown food,' and the scientists quickly veer into the chillingly instrumentalizing rhetoric of how to best exploit the metabolic labour of critterly vitality within existing centralized production systems. "What kind of tolerance would the critter show to different kinds of climate?," worries the teams' chief agricultural economist. "What was the rate of reproduction? If it was slow, as was indicated, could it be stepped up? What was the rate of growth?" (21). On the plus side, the surveyors soon realize the unprecedented profit potential of their so-called discovery: "Here was diversified farming with a vengeance! You had meat and dairy herds, fish pond, aviary, poultry yard, orchard and garden rolled into one, all in the body of a single animal that was a complete farm in itself!" (21). The critters "even saved one the trouble of going out to kill them" (15) and, once dead, provided a profitable carcass: "The food product seemed high in relation to the gross weight of the animal. Very little would be lost in dressing out. That is the kind of thing an ag economist has to consider" (21). At last, the survey team enthuses, "we'd hit the jackpot! We'd be going home with something that would make

those other teams look pallid. *We'd* be the ones who got the notices and bonuses" (21, original italics).

This instrumentalizing logic is shattered in the story's denouement, when the critters stampede in a kind of inchoate rage, "as if they ran in some blind fury that was too deep for outcry" (25). The stampede destroys the scientists' food supplies, thus forcing the humans to eat the only thing available, critter meat. Through this act of ingestion, the humans are exposed to microbial agents of symbiogenesis and metamorphose into critters themselves,

They don't fight you. They absorb you. They make you into them. No wonder there are just the critters here. No wonder the planet's ecology is simple. They have you pegged and measured from the instant you set foot on the planet. Take one drink of water. Chew a single grass stem. Take one bite of critter. Do any one of these things and they have you cold. (33)

The ambiguity as to who or what "they" are—critters or bacteria—speaks both to the difficulty of getting out from under zoocentric narratives and the absurdity of attempting bifurcate the holobiont into 'host' and 'symbiont' in the first place. For the doomed scientists of Slmak's story, however, this absurdity does not register—what matters is the loss of the trappings of human subjectivity: "Forget us. We aren't human any more" (35).

The former scientists, now critters may not be "human" anymore, but at least some of their flesh is: the horror of the story is that human meat has been added to the 'walking

menu' that is critter embodiment. Schell (1997) corroborates Plumwood in identifying a deep dread of the fundamental meatiness of the human as a key trope in infection narratives. Disregarding our categories as they jump from species to species — often from animals we exploit for food—infectious agents threaten to strip away the veneer of human subjectivity to reveal the fleshy animal carcass beneath (Schell 1997, 119).

Schell quotes from a popular science book on infectious diseases characterizing an infectious microbe as being able to

break through the lines that separate one species from another. It did not know boundaries. It did not know what humans are; or perhaps you could say that it knew only too well what humans are, it knew that humans are meat (Preston 1995; in Schell 1997, 119).⁷⁹

In popular science discourses, Schell argues, infection makes meat of the human subject, obliterating the boundaries we have erected between ourselves and the animals we have already made into dead flesh. Even without the latent possibilities of bacterial symbiogenesis, the human consumption and incorporation of animal bodies as meat is a site of profound self-other anxiety; meat-eating at once reifies the carnophallogocentric human subject through the sacrifice of the animal other and potentially subverts the notion of that very subject's exceptionalism by demonstrating that human and animal bodies are mutually nutritive. If meat-eating, as Fiddes has argued (1991), is (among other things) an expression of human mastery over nonhuman 'Nature,' Simak's 'Drop Dead' speaks to a deep-seated anxiety within carnophallogocentric discourses concerning the incompleteness of that supposed

⁷⁹ The microbe under discussion is a virus, but the point applies just as well to bacteria

domination. In Simak's story of meaty metamorphosis, an assemblage of lively bacterial actants allow the dead and eaten nonhuman to bite back, infecting the human diner with an alien agenda. 'Drop Dead's' human scientists instrumentalize and devour 'critters' and in a twist of poetic justice are subsequently transformed into 'meat animals' themselves. Lomax (1989, 139) writes that in Simak's SF, bizarre and dramatic human/alien encounters break down taken-for-granted alien and human identity categories, with the gaze of the Other turning an unflattering mirror back on the human subject. 'Drop Dead's' fateful encounter between agricultural economists and meat critters accomplishes just such a breakdown: the boundaries between self-other, human-animal and subject-object are obliterated in the nutritive encounter, in which the Other gazes hungrily back upon the human. The story "exacts the familiar dream vengeance on industrial capitalism" so prominent in Simak's work (Pringle 1980, 67), punishing those who hew to the logic of instrumentalization by giving these ecocolonial plunderers a taste of their own medicine. The encounter with alterity reduces the neo-Darwinist economists of Simak's survey team not just to their supposed substrate of base animality, but to the deadened life of always-already meat to which they themselves would relegate the more-than-human biotic world.

Xeno(symbio)genesis: Octavia E. Butler

Octavia Butler's acclaimed *Xenogenesis* trilogy offers a starkly different vision of the symbiogenic potentials of alimentary encounters than that articulated in Simak's 'Drop Dead.' In Simak's bitterly ironic parable, rampant consumption leads to contagion and subsequently abjection. In Butler's more ambivalent representation of the possibilities of

mutual transformation through eating, interspecies commensality leads to symbiosis and ultimately to an equivocally providential metamorphosis for each partner species. Thomas has argued that SF written by women is more likely to approach corporeal transformation as ambiguous or even empowering, rather than simply debilitating; Schell describes a similar tradition of SF narratives in which racialized 'others' are liberated rather than violated by symbiogenic transformations (Thomas 2000; Schell 1997, 123). A Black feminist writer of SF in the late twentieth century U.S., Butler is renown for her relentless interrogation of the dynamics of domination, acquiescence and resistance (Melzer 2006, 54-6). According to Haraway, "[c]atastrophe, survival and metamorphosis are Butler's constant themes" (1991, 226); her work is deeply "preoccupied with forced reproduction, unequal power, the ownership of self by another, the siblingship of humans with aliens and the failure of siblingship within species" (Haraway 1989, 378). Blackness profoundly informs her challenging and ambiguous stories: "the narratives of slavery and the power relations inherent in those narratives, remain a disturbing feature" of her novels (Wolmark 1994, 3; also Haraway 1991, 228; Dowdall 2017; Tucker 2007; Magedanz 2012). An avowed anti-utopian (Beal 1986, 14),⁸⁰ her ambivalent narratives confound easy ideological pigeonholing, but may be characterized as "centrally concerned with the exploration of transitional states in which the boundaries between self and other become fluid and in which the search for homogeneity is resisted" (Wolmark 1993, 29; Idema 2016). In these respects, Butler is perhaps uniquely well-positioned to critique dominant narratives of bodily transformation

⁸⁰ Although Butler herself did not see her work as utopian (at least as of 1986) critical debate regarding the utopian and dystopian dialectics in her work remains lively. See Stickgold-Sarah (2010)

as a “loss of the human,” a state of abjection akin to that of ‘meat’—which is precisely what she accomplishes with her *Xenogenesis* trilogy.

In *Xenogenesis*, a nuclear holocaust has decimated life on Earth, nearly obliterating the human population and devastating ecosystems and species worldwide. Protagonist Lilith Iyapo (a Black anthropologist from the United States) and other human survivors awaken on an alien spaceship two hundred and fifty years later, cured of their radiation poisoning and are given the chance to return to a restored Earth. The catch? They must submit to a process of genetic hybridization with their alien rescuers/captors, who call themselves the Oankali, a term loosely translating to “gene trader” (Butler 2000, 41). Their children will be human-alien hybrids sharing and exceeding the capacities of both species. The Oankali have sterilized all surviving humans—only through genetic hybridization with Oankali (achieved via interspecies copulation) are humans able to reproduce at all. As Holden (1998) puts it, “according to the terms imposed by the Oankali, humankind as we know it will cease to exist, either through attrition or through genetic intermixing with the Oankali” (231). The aliens—who resemble bipedal “sea slugs with limbs and tentacles” (Michaels 2000, 650)—are the product of exactly the kind of symbiotic evolution that ‘Drop Dead’s’ neo-Darwinist agricultural scientists viewed with such horror and anxiety. Oankali evolution was never a red-in-tooth-and-claw struggle for existence or a ruthless competition for the survival of the fittest. Instead, the Oankali incorporate genetical material from other species they encounter in a process of conscious sympoetic evolution, hybridizing themselves with each successive “trade” of genes, much like the lateral gene transfer of Earthly bacteria,

We're not hierarchical, you see. We never were. But we are powerfully acquisitive. We acquire new life—seek it, investigate it, manipulate it, sort it, use it. We carry the drive to do this in a minuscule cell within a cell—a tiny organelle within every cell of our bodies. (41)

This organelle—“the essence of ourselves, the origin of ourselves,” as the Oankali put it—enable the aliens to “perceive DNA and manipulate it precisely” (41) without resorting to technical mediation. It is not neo-Darwinian competition, but “that organelle’s invasion, acquisition, duplication and symbiosis” with the cytoplasmic and genetic material of so-called “partner species” that has driven Oankali evolution (544). The organelle enables the Oankali to hybridize “with life-forms so completely dissimilar that they were unable to even perceive one another as alive” (ibid.). Across millions of years and multiple “trades” and transformations, the Oankali are “always changing in every way but one—that one organelle” that constitutes the core of their identity and the engine of their evolutionary process (ibid.).

Butler acknowledges her debt to the theory of symbiogenesis within the text, “describing mitochondria’s incorporation with human cells in an overt reference to the then-speculative endosymbiotic theory” (Bollinger 2010, 42).⁸¹ Nikanj, an Oankali character,

⁸¹ Bollinger argues that the action of the *Xenogenesis* trilogy “depends upon symbiosis, not symbiogenesis, with the novels centring on the power dynamics between humans and the more-advanced Oankali rather than on the act of incorporating the organelle as a separate lifeform” (2010,42). While the narrative does not centre on the act of incorporating the intracellular organelle and the first novel indeed focuses on humans and Oankali as discrete entities, the following two thirds of the trilogy tell the story of the hybrid offspring of the first’s main characters. That the bulk of *Xenogenesis’* narrative is related by hybrid characters who are the first generation of a new species born of symbiogenesis to me suggests that symbiogenesis does in fact play a significant role in the trilogy.

recounts how “mitochondria, a previously independent form of life, have found a haven and trade for their ability to synthesize proteins and metabolize fats for room to live and reproduce” inside human cells (427). Referring to a human character who has been genetically altered to receive the Oankali organelle, Nikanj points out that

We’re in his cells too now and the cells have accepted us. One Oankali organelle within each cell, dividing with each cell, extending life and resisting disease.... I think we’re as much symbionts as their mitochondria were originally. They could not have evolved into what they are without mitochondria. (427)

in a similar vein, Butler makes explicit reference to the ubiquity of symbiosis in sustaining human life, giving the example of bacteria living in human intestines. “They could not exist without symbiotic relationships with other creatures,” Nikanj muses. “Yet such relationships frighten them” (427). Part of Butler’s project in *Xenogenesis* is contesting this fear of symbiosis and the narratives of human exceptionalism and organismal atomism that inform and enable it. By acknowledging the symbiogenic origins of human life and crafting a speculative narrative of consciously-orchestrated xeno-symbiogenesis between humans and an alien species of consummate symbionts, Butler’s trilogy “recast[s] the usual origin story of the evolutionary rise to dominance of the heroic individual (that first organelle floating in the primeval soup) through ruthless competition and survival of the fittest” (Peppers 1995, 54). Put another way, Butler’s Oankali are the symbolic embodiment of diversity (Roberts 2000, 135),

descendants neither of a Garden of Eden nor of some prototypical ‘first’ Oankali whose purity they have preserved in their lineage. On the contrary,

they are totally mixed or hybridized beings who are driven to strive for further hybridization. (Grewe-Volpp 2003, 161)

Whereas Simak's scientists are horrified by the boundary pollution of symbiogenesis and disoriented by the loss of the hegemonic evolutionary narrative of the heroic individual, the characters of Butler's *Xenogenesis* survive by embracing these somatic hybridizations and narrative subversions.

Vegan ecofeminists from outer space?

As stressed previously, symbiosis is not a synonym for "mutually beneficial" (Haraway 2016, 60); rather, it is a value-neutral term describing a relationship of close and protracted physical intimacy between different species. Symbionts can be parasites, enemies, or profoundly unequal partners (Margulis 2007). Perhaps this explains why *Xenogenesis*' Oankali aliens provoke such varied and discordant readings, from nonviolent vegans (Harper 2011) embodying an ecofeminist ethic of antihierarchical interrelationality (Alaimo 2000) to anthropophagic (Hammer, 1996; Sands 2003) slavemasters (Grewe-Volpp 2003) and interstellar biopirates executing a eugenic pogrom of forced miscegenation (Stein, 2004; Slonczewski, 2000) to effect the genocide of the human species (Canavan 2016b). The following pages critically examine the case for understanding the Oankali as anti-hierarchical vegans, before broaching an as-yet undertheorized element of the trilogy (and the author's entire oeuvre): namely, Butler's enduring penchant for narratives of anthropophagy.

A sophisticated and challenging text, *Xenogenesis* has generated a wealth of critical literature. Feminist thinkers from cyborg, posthumanist, science studies and critical race studies perspectives have found in the trilogy a rich repository of thematic material for analysis. Ecofeminists have found *Xenogenesis* and Butler's work more generally, particularly generative: "by focusing on race, gender and nature, analytical categories central to ecofeminist discourse, Butler's novels promise a rewarding ecofeminist reading' (Grewe-Volpp 2003, 153; see also Alaimo 1998; 2000; 2010; Alonzo 2013; Agraso 2016; Harper 2011; Vargas 2009; Campbell 2010; Merrick, 2008). However, even within the broadly defined field of feminist ecocriticism, radically incommensurate readings of the trilogy coexist in uneasy proximity. For Harper, the Oankali are vegan saviours from the stars, come to show the surviving humans the error of their hierarchal, carnist and ecocidal ways. It is not insignificant, she argues, that "the Oankali, who 'save' human beings, believe that a plant-centred diet is crucial for humans not to perpetuate violence or destroy their planet" (2011, 111). The Oankali aversion to violence and refusal to eat meat is one facet of the species' uniquely embodied form of empathy wherein they share the sensations of the organisms around them (Alaimo 2000, 405). Violence is "against their flesh and bone, every cell of them... To kill was not simply wasteful to the Oankali. It was an unacceptable as slicing off their own healthy limbs" (Butler 2000, 564). Dietary vegans who encourage humans to similarly adhere to a plant-based diet, the Oankali make clear that "they would neither kill animals for [Lilith] nor allow her to kill them while she lived with them" (Butler 2000, 90). As Harper points out, only the most violent and deplorable male characters in the trilogy crave or procure meat: one man even waxes nostalgic for hamburgers and rails against the Oankali

enforcement of a vegan diet shortly before attempting to rape Lilith (2011, 121), a scene that is perhaps the most pointed of Butler's many literary mediations on the interdependency of violent ideologies and carnal urges (Sands 2003, 2; Hammer 1996). For Harper, the Oankali are ecofeminists par excellence, beings who pursue "no relationships based on domination" and for whom interpersonal violence or hierarchy is all but unthinkable (2011, 115).

Perhaps the most arrestingly alien aspect of the Oankali is their haptic epistemology—their "body knowledge," as Alaimo puts it (2000, 145). For the Oankali, to know is to taste—they "read" genetic material with their tongues and tentacles, which constitute their main sensory organs. The Oankali "literally consume genetic material, reading it as books" as well as depending on it "as an essential food" (Sands 2003, 8). Nutrition and epistemology are inseparable to the hungry gene traders, for whom "eating is a legitimate mode of intellectual, emotional knowledge" (Paresocli 2008, 81).⁸² Alaimo characterizes this aspect of the Oankali's uniquely embodied mode of perception—"not through vision, which implies distance and abstraction, but through their sensory organs, which touch and taste genetic information"—as a form of knowing "inhospitable to hierarchies" (Alaimo 2000, 145). The Oankali thus "embody natureculture: they do not see the realms as discrete" (Alaimo 2000, 145). Alaimo argues that Butler's depiction of

⁸² Paraescoli is not referring to Butler's work here, but is discussing Samuel Delany's *Stars in My Pocket Like Grains of Sand* (1984), another SF text written by a Black author and published just prior to *Xenogenesis*; however, the insight is just as salient to Butler's Oankali as it is to Delany's many-tongued Evelmi. Taste-based epistemologies crop up in several different species in Delany's *Stars*: in another scene a being resembling a giant sentient jellyfish offers some of "its" own flesh to the novel's human protagonist, "if you're hungry, I'd be highly complemented if you'd eat some of me. Indeed, if there's any of you you can spare, body, hair, nail parings, dried skin..?" (1984, 69). For Parasecoli, Delany's narrative understands "cannibalism as a sort of gift exchange between races" (2008, 81).

the Oankali “provides a paradigm for feminism and anti-racism” and “confirms an ecological worldview of situated connectedness and constitutive interrelations” (2000, 147).

However, as Haraway points out of the Oankali in *Primate Visions*, “hierarchy is not power's only shape” (1989, 380): the gene-traders’ claim to have avoided hierarchies does not necessarily mean “they have eschewed power” (Bonner 1990, n.p.). Butler’s complex narrative suggests a much darker and more coercive side to these supposed vegan ecofeminists from outer space. While they inflict no physical violence upon other motile species, the Oankali have no qualms about genetically “assembling” other creatures to serve their needs willingly, toiling happily as a beasts of burden aboard their masters’ starships (Butler 2000, 446). As one character observes, “humans put animals in cages or tried to keep them from straying. Oankali simply bred animals who did not want to stray and who enjoyed doing what they were intended to do” (Butler 2000, 446). In biopolitical terms, the Oankali spurn clumsy and violent sovereign power in favour of a more coercive deployment of biopower (Foucault 1976). Empaths who feel the pain they inflict on other animals, the Oankali never kill, never ‘make die’—but they constantly ‘make live,’ and they are careful to ensure that the lives they bring forth are conducive to Oankali instrumentalization. This is as true for Oankali-human relations as it is for Oankali-other animal relations. Towards the end of second novel, a hybrid character makes the chilling observation that “[y]ou controlled both animals and people by controlling their reproduction—controlling it absolutely” (447). The Oankali achieve this by sterilizing all humans who refuse to submit to genetic hybridization and ensuring

that the only way cooperative humans can reproduce—or even experience sexual pleasure—is through Oankali mediation.⁸³ And reproduce they must: Oankali sex with humans is depicted as “super-procreative” (Slonczewski 2000, np). “Oankali-human families are expected to produce children upon children,” hybrid offspring of the gene trade whose human genetic heritage will invigorate the next generation of Oankali explorers (ibid.). Lilith is not exaggerating when she describes herself as “part of a captive breeding program” (60), like a creature in a zoo: “we used to treat animals that way,” she observes bitterly. The Oankali’s reproductive colonization (Stein 2004, 214) recalls not only modernity’s practices of human-animal relations, but also the sexual power dynamics of American chattel slavery (Martini 2009, 63); like so much of Butler’s oeuvre, *Xenogenesis* is haunted by “the spectre of coerced miscegenation” (Peppers 1995, 50). Grewe-Volpp argues that despite their egalitarian social structure and preference for coercion rather than violence, the Oankali are not as anti-hierarchical as they would have the humans believe; they relate to humans “like slave-masters [...] exercis[ing] power over them [and] forc[ing] them to submit to their own needs and desires“ (Grewe-Volpp 2003, 163). While the Oankali’s haptic epistemology might indeed be antithetical to dualisms (Alaimo, 2000) it certainly does not stop the aliens

⁸³ Haraway argues that “Octavia Butler is a very frustrating writer in some ways, because she constantly reproduces heterosexuality even in her poly-gendered species” (Penly and Ross 1990, 16, in Grebowicz and Merrick 2013, 171 n8). Like all of Butler’s novels, *Xenogenesis* presents a relentlessly heterosexual future. As Haraway points out, “heterosexuality remains unquestioned, if more complexly mediated. The different social subjects, the different genders that could emerge from another embodiment of resistance to compulsory heterosexual reproductive politics, do not inhabit this *Dawn*” (1991, 229). Slonczewski elaborates, “Nowhere is there a role for non-procreative forms of sexuality, such as gay or lesbian relationships. While Butler’s characters occasionally take a critical view of homophobia, it is interesting that the Oankali “third sex,” the ooloi, always takes a male form to seduce a female human, but a female form to seduce a male human” (Slonczewski 2000, np). The utter lack of LGBT characters in *Xenogenesis* might even be understood as a kind of queer genocide: perhaps the Oankali have simply opted not to resuscitate any gay, lesbian or trans humans as part of their project of erasing any kind of sexual partnership that is not at least potentially reproductive.

from operating in domineering ways. They employ a strategy of “erotic colonization” (Stein 2004, 214) whereby they manipulate other creatures into serving their needs by neurally stimulating intensely gratifying sensations; the Oankali thus coerce humans into “forms of interspecies sex that brutally, yet pleasurable, incorporate humanity into an interspecies future” (Ahuja 2015, 380). Their ‘tasting’ genetic material from unsuspecting bodies raises uncomfortable questions of consent: in the case of Lilith, the Oankali “expropriat[e] her genetic/reproductive materials without consent and ... combin[e] them into a mix that suits their needs for the “trade”” (Stein 2004, 215). The Oankali consume Lilith’s tissue, remix it with DNA from her dead lover and genetic material from three other Oankali ‘parents,’ and reimplant it in her body without her knowledge; rather inauspiciously, this “coerced pregnancy” is first occurrence of xeno-symbiogenesis between the two species (ibid.).

Acquisitive cannibalism?

The Oankali’s taste-based epistemology, intuitive from birth, also raises the uncomfortable possibility that these supposedly nonviolent vegan explorers from outer space might in fact be considered people-eaters. Hybrid character Akin recounts how, while being breastfed by his human mother, he begins to sample and analyze—to “taste,” in the Oankali sense—“her flesh as well as her milk” (Butler 2000, 256).

Consider the following exchange between Lilith and the Oankali Nikanj,

“It’s a good thing your people don’t eat meat. If you did, the way you talk about us, our flavours and your hunger and your need to taste us, I think you would eat us instead of fiddling with our genes.” And after a moment of

silence, “That might even be better. It would be something we could understand and fight against.”

Nikanj had not said a word. It might have been feeding on her even then— sharing bits of her most recent meal, taking in dead or malformed cells from her flesh, even harvesting a ripe egg before it could begin its journey down her fallopian tubes. It stored some eggs and consumed the rest... (2000, 689)

According to Hammer, this “revelation” that the Oankali actually eat the humans they come into contact with “constitutes the true climax of the story” (1995, 93). The Oankali “need human mates because they literally consume their cellular structures whenever they touch them” (Hammer 1995, 93)—it is through this alimentary encounter, this near-parasitic relation of commensality, that the xeno-symbiogenesis of Butler’s trilogy is enacted. By tasting and consuming other creatures’ bodily tissues in order to know and understand them in the “certainty of the flesh” (Butler 2000, 476), the Oankali literalize St Clair’s assertion that “[i]ncorporation is the ultimate intimacy”; the Oankali would surely agree with her sentiment that “[t]here is no form of carnal knowledge so complete as that of knowing how someone tastes” (St Clair 1976, 1).

The Oankali predilection for surreptitiously nibbling on human flesh is but part of a wider pattern of anthropophagic tropes in Butler’s work. From the Clayarks’s ravenous hunger for human meat in *Clay’s Ark* (1996), to Doro’s hunger for fresh bodies to wear and discard in *Wild Seed* (1980) and *Mind of My Mind* (1978), to the vampires of *Fledgling* (2005) and the Oankali themselves, anthropophagy occupies a position of “prominence

and narrative significance in her major fiction” (Sands 2003, 2; Hammer 1996). Butler consistently deploys these “cannibal tropes in the service of narratives that emphasise the permeability of the skin boundary and the mutability of the self” (Sands 2003, 11)—narratives that emphasize the transcorporeality of bodies, the incessant exchange of matter that sustains and characterizes embodied life (Alaimo 2010). This Oankali predilection to hybridize with rather than repudiate the Other needs to be approached critically; while it is true that concerns of purity and self-other hyperseparation are alien to them, this anti-dualism does not sanction their unfettered drive to “collect” (Butler, 2000, 239) biomaterial from other lifeforms. When Butler describes the Oankali as an ‘acquisitive’ rather than competitive species, she is surely not deaf to the term’s more mundane meaning of ‘greedy’ or ‘rapacious.’ The Oankali seek and consume difference because “they need it to keep themselves from stagnation and overspecialization” (Butler 2000, 239) and, crucially, because they have the power to do so with relative impunity. As Stein (2003) points out, “the Oankali’s biotechnological superiority serves as their mandate to colonize other species for their own needs and to appropriate genetic characteristics that will improve their own evolutionary needs” (213). The Oankali reap the biodiversity of each planet they encounter “to fuel new iterations of themselves” (Dowdall 2017, 512) in a colonial enterprise of interplanetary biopiracy (Shiva 1997). Slonczewski argues for understanding the Oankali as “consummate genetic engineers who sample the genes of all different organisms for their ‘interesting taste,’ rather as Americans choose to dine at ethnic restaurants” (2000, n.p.). This sort of “genetic consumerism,” wherein tissue is coerced or outright stolen from powerless creatures in order to serve Oankali needs and desires, for Slonczewski demonstrates

that “the closer one looks, the Oankali are not our opposites, but rather an extension of some of humanity’s most extreme tendencies” (2000, n.p.; Hammer 1996). There is ample textual evidence within the narrative of *Xenogenesis* to support my argument that the xeno-symbiogenesis effected by Oankali is not innocent, but coerced and profoundly unequal; the Oankali cannot be beatified as epitomizing ecofeminist ideals of embracing difference and living ecologically and nonhierarchically. Like Travis’s Wess’har and the discourses of deep ecology they evoke, the Oankali spectacularly fail to meaningfully engage with alterity: “The Oankali acceptance of difference is more accurately an absorption of difference” (Holden 1998, 5). Even though human genetic material is present in the hybrid children of the two species, “it will be an Oankali species” (Butler 2000, 433),

“It will grow and divide as Oankali always have and it will call itself Oankali.... and the Humans will be extinct, just as they believe [...] They will only be... something we consumed” (Butler 2000, 422-3, original ellipses)

Oankali remain Oankali, even when utterly transfigured—so-called “trade partner” species are devoured. As Holden argues, “The Oankali consumption of difference turns out to be not much better than the human repudiation of difference; both result in a domination and/or erasure of the ‘other’” (1998, 51).

Oankali estrangements

Chapter three argued (following Plumwood 1994, 71) that the incorporation of the other is a problematic way to deal with difference because it fails to take alterity on its own terms, instead “subsuming difference within a totalizing vision” that is articulated solely

on the terms of the self (Cheney 1994, 164). Unity or holism is achieved only at price of difference and difference is “indispensable” for any ecologically situated “self-in-relationship” with a web of distinct others (Plumwood 1993, 20; Grewe-Volpp 2003, 156). Rather than embodying ecofeminist ideals, perhaps we might better understand the Oankali as literalizing ecofeminist critiques; namely, of the logic of incorporation and the ecological devastation such an ideology vindicates. Not only do the aliens physically incorporate difference by tasting and consuming other species, but they also forcibly repudiate the ecofeminist aim of cultivating an ecological network of distinct and intra-acting agencies of alterity. Unlike even the flawed Wess’har, who at least attempt to promote ecological flourishing for all Earthly creatures, the Oankali’s end goal is the total obliteration of life on Earth. They are in fact slowly cannibalizing not just humanity but the entire planet to build another living starship, at which point (some three hundred years in the trilogy’s future) they will leave Earth a lifeless debris field as they set off in search of new ‘trade partners’:

It was not only the descendants of humans and Oankali who would eventually travel through space, in newly mature ships. It was also much of the substance of Earth. And what was left behind would be less than the corpse of a world. It would be small, cold and as lifeless as the moon.....The salvaged Earth would finally die. (Butler 2000, 365)

As Slonczewski points out, “the fact that all of Earth’s species will ultimately vanish as the Oankali consume the planet does not disturb them” (2000, np). The next generation of Oankali will no doubt tote a well-stocked gene bank of Earth species with them on their journey and their own bodies will carry human genetic material to the stars, but

they will ultimately remain Oankali, remain self, remain one. Slonczewski is surely correct in her assessment that the Oankali do not oppose but rather intensify humanity's most extreme "acquisitive" behaviours: "Humans disturb and pollute our ecosystem; the Oankali will literally consume every organic molecule of it" (Slonczewski 2000, np).

The Oankali do not just extend humanity's rapacious appetites to monstrous proportions: they also intensify to the point of estrangement "the very qualities that have at various times been held up as the basis for human identity and superiority," namely language, knowledge, emotion and reason (Martini 2009, 55),

Among the many ways in which the Oankali destabilize human subjectivity, then, one of the most powerful is that they are too human; they exceed us in the very ways that are supposed to make us special and set us apart. (Martini 2009, 56)

This is the brilliance of Butler's trilogy—the Oankali "other" is at once radically different from and uncomfortably similar to, hegemonic cultural notions of the human subject. Fluctuating between difference and similitude, alien and human, villain and benefactor, the Oankali elude taxonomic capture. When a hybrid character articulates this apparent contradiction by asking, "What are we that we can do this to whole peoples! Not predators? Not symbionts? What then?" (Butler 2000, 443), the answer must surely be that the Oankali are both, neither and much else besides. Captors, saviours, vegans, cannibals, ecofeminists, ecophages, peaceniks, slavemasters: the Oankali occupy multiple and conflicting positions, resisting easy interpolation into any schemata of moral absolutism.

While my analysis skews towards a negative appraisal of the Oankali, I do not wish to suggest they be understood as monstrous (at least, not in a negative sense). As Hammer persuasively argues,

Butler ultimately challenges us to think beyond the concept of monstrosity if we can; consequently, to think beyond the dichotomy of eating or being eaten and further still, to contemplate new, heretofore unimaginable kinds of pleasure and fulfilment. (1996, 95)

The bargain that the Oankali make with humans—hybridize or become extinct—may not be such a bad exchange after all (Hammer 1996, 94). As Martini points out, “[h]aving assimilated all the useful adaptive strategies they have ever encountered through their whole phylogenic history, the Oankali are essentially invulnerable to physical threats,” in addition to possessing unparalleled intellectual and sensory capacities and a generally peaceful social structure (Martini 2009, 54). Humans who agree to reproduce with Oankali enjoy total freedom from disease and injury, radically extended lifespans and (as Slonczewski puts it) easy access to “super-orgasmic” tentacle sex (2000, np). Of course, these boons come at the cost not only of relinquishing any claim (however illusory) to a distinctly human subjectivity, but ultimately of extinguishing all planetary life. That the devoured Earth “would live on as single-celled animals lived on after dividing” might do little to mitigate the loss of untold billions of extinguished Earthly lives, but at least it offers the possibility of multispecies reworlding (Butler 2000, 365). While the Oankali’s consummately symbiogenic evolutionary trajectory offers a pointed critique of neo-Darwinist fantasies of ‘man’ pulling ‘himself’ up by the evolutionary

bootstraps through competition and vertical inheritance, Butler refrains from idealizing either the phenomena of symbiosis/symbiogenesis or the Oankali themselves.

Xenogenesis essentially mounts a posthumanist critique “of the individual as a rationally self-determining, self-defining being and of individual identity as the source of agency” (Jacobs 2003, 91), simultaneously exploring the pleasures and possibilities of deconstructing boundaries between subjects (Vint 2007, 66) and insisting that subjectivities emerges in relations of response-ability through which worlds are constituted (Haraway, 2008a; van Dooren and Bird Rose 2017, 264-5): “tendencies towards subject boundary dissolution are never symmetrical and therefore cannot be innocent” (Pedersen 2011, 72). In *Xenogenesis*, human and Oankali subjects are differentially co-constructed through their response-abilities towards one another and the rest of the biotic world; Butler’s ambivalent narrative thus demonstrates her commitment to the Harawayan exhortation to “stay with the trouble” (2016) in ever-negotiated relations of multispecies contingency.

Conclusion: Contact zones

Simak and Butler’s SF narratives of eating and transformation articulate divergent responses to the implications of symbiogenesis for the human subject. A powerful counter-epistemological origin story (Pepper 1995), the theory of symbiogenesis stresses that evolution can be driven by uneasy cross-species alliances, rather than being propelled (solely, primarily) by random mutation and natural selection—in other words, “successively enriched packets of ourselves” (Thomas, cited in Hird 2009, 83). This is heretical stuff, not only undermining heterocentric notions of reproduction

(Griffith, 2015) but striking at the very heart of neo-Darwinian biological orthodoxy (Hird, 2009, 65). 'Drop Dead' foregrounds the economic underpinnings of evolutionary ideology by pitting a team of neo-Darwinist scientist-economists against a hungry species of symbiotic bacteria. For Simak's scientists, the notion of subjectivity as an emergent multispecies assemblage is horrific and debasing, dissolving the outline of the subject and reducing the human to the abject status of 'meat.' Butler's more ambivalent response to the symbiogenic subject makes clear that "the perfection of the fully defended, 'victorious' self is a chilling fantasy" (Haraway 1991, 224); her depiction of "Oankali sexuality, epistemology, communication and politics all suggest that the fluidity and openness of the posthuman body might enable new forms of subjectivity and of agency, grounded in relation rather than separation" (Jacobs 2003, 92). By attending to Oankali-human relations in all their coercive specificity her narrative refuses to efface the subject as an ethico-onto-epistemological entity that provokes specific modes (and failures) of response-ability. *Xenogenesis* emphasizes instead that subjects emerge intra-actively within the non-innocent space of the contact zone, where species entangle and "redo one another molecule by molecule" (Haraway 2008a, 217). These contact zones, as Haraway reminds us, "are difficult places of violence, injustice and power differentials and it is precisely for the reason that sociality and responsibility are inextricably linked to them" (Grebowicz & Merrick 2013, 107). *Xenogenesis*' human and more-than-human subjects emerge in just such a zone; as Haraway argues, Lilith "fights for survival, agency and choice on the shifting boundaries that shape the possibility of meaning" (1989, 379), enmeshed in a zone of "abject disempowerment, rape and an overall lack of consent in establishing the terms of the interspecies encounter" (Martini

2009, 58). In this way Butler's narrative "forces us to face the subject—that overdetermined and ever-changing entity, structured by cultural inscription—while it refuses to allow us the solace of belief in a stable self" defined in juxtaposition to the other (Vint 2007, 76; Dowdall 2017, 517). Butler tempers her "critique of humanism and its foundation of human exceptionalism with her insistence on respectful consideration of the construct of humanity"—a generative tension that needs no critical reconciliation (Martini 2009, 62). *Xenogenesis*' ambivalent narrative of interspecies entanglement concretizes Haraway's insight that "[t]he more one looks, the more the name of the game of living and dying on earth is a convoluted multi-species affair that goes by the name of symbiosis, the yoking together of companion species, at the table together" (Haraway 2013, 145). *Xenogenesis* and material feminisms alike articulate a subject that is as always-already multiple, always-already in flux, emerging not autopoetically but only ever in sympoesis with a host of other lives and materialities (Haraway 2016). Ethics emerges in this interaction with alterity: by refusing to either erase the subject as an ethico-political entity or romanticize symbiogenesis as a synonym for the good, Butler's narrative materializes Haraway's argument that symbiogenesis and subjectivities alike are about "becoming with each other in response-ability" (Haraway 2016, 145). It is this commitment to the complexity of ecological embodiment that ecofeminist apparatuses are so well-equipped to parse. From the hungry perspectives of SImak's symbiotic critter-bacteria and Butler's acquisitive Oankali, earthly (hum)animals have always been meat, one way or another; the task is to negotiate, in shared corporeal vulnerability, our response-abilities towards

various, differentially entangled and excluded subjects as we move towards more sustainable and ethical relationships with Earth others (Plumwood, 1993, 2002).

6. Conclusion: Imagining Otherwise

Dualistic configurations of subjectivity are hostile to other animals in multiple registers. The anthropological machine produces always-already human subjectivity by disavowing any characteristics deemed animalistic, while the biopolitical apparatuses of advanced capitalism discursively and materially ensnare other animals within economic relations of property and designate them 'bare life,' raw material for human instrumentalization. Not only does this ontology of subject-object dualism facilitate an interlocking respect-use dichotomy that excludes so-called 'food' animals from any possibility of political life, it actively mandates their perpetual sacrifice and consumption as integral to the performative enactment of the properly carnophallogocentric human subject. Extending subjectivity to encompass certain kinds of nonhuman others based on perceived similarities to valued human characteristics does little to challenge the sacrificial structure of subjectivity itself, which feeds upon on its subordinate others in a kind of perpetual "metaphysical cannibalism" that relies upon that which it disavows (Braidotti 1991). No wonder critics such as Haraway declare that "[t]he last thing [other animals] 'need' is human subject status, in whatever cultural-historical form" (2008b, 176). Including (some) other animals in dominant constructions of subjectivity is hardly unproblematic: "The best animals could get out of that approach is the 'right' to be permanently represented, as lesser humans, in human discourse" (Haraway 2008b, 176). Indeed, it has become axiomatic within animal studies discourses that moral extensionist approaches to more-than-human ethics risk reifying anthroponormative hierarchies or scales of worth, as the criteria by which we judge others as worthy of

inclusion in the moral community are inevitably skewed towards human capacities (Noske, 1989, xi). After all,

there is no obvious reason for us to take mammals or fish or even bees as the bright line at which we make an agential ethical cut, bringing them into the fold of our moral regard. Why should we accord the cow more moral standing than the worm? (Shotwell 2016, 120).

Or the worm more moral standing than the vegetable? Why should we accord the organism (if such a thing can even be said to exist) more moral standing than the cell? As Hird points out, “our current concern with human-animal relations obscure[s] bacterial intra-actions that have nothing to do with humans and are beyond human recognition” (Hird 2009, 28). In attempting to mitigate the effects of violent anthropocentrism on other vertebrates, Hird suggests, critical animal theorists end up reinforcing zoocentric assumptions by extending moral regard to a small selection of other animals while leaving the rest of the biotic world out in the cold of moral dismissal.

Entangled ethics

Unlike some critical animal theorists (Weisberg 2014), I have no interest in foreclosing the possibilities of ethical alliances with bacteria, or semi-living tissue forms, or aliens, or plants or garbage dumps or ecosystems or any other agential assemblages—such an indiscriminately exclusionary agential cut would be incompatible with ecofeminist values and theory (Gaard 2016; Plumwood 2002). But attending to response-able entanglements with non-animal actants in no way requires backgrounding the exclusions enacted by particular agential cuts, as materialized within particular

sociotechnic apparatuses (Hollin, Forsyth, Giraud & Potts 2017); nor does it demand the withholding of ethical and political subjectivity from those creatures who need it most. I suspect that some posthumanist/neomaterialist critics underestimate how profoundly the prospect of nonhuman animal subjectivity challenges the metaphysics of anthropocentrism, which has for so long kept ethical and political subjectivity bulwarked behind a wall of human exceptionalism (Wise 2000). The assertion of subject-status for certain kinds of nonhumans at the very least destabilizes human supremacist ideologies that reserve moral considerability for (qualifying) members of the human species alone and render everyone and everything else at least potentially killable, on the far side of a respect-use dichotomy. As Pedersen asks,

if not only subjectivities, but also power relations are understood as organic, dynamic, genuinely unstable ecologies, why not use the open-ended indeterminacy of posthumanism to radically transform our consumption referents, theories and practices? (Pedersen 2011, 75)

The value of including of animals within dominant configurations of subjectivity, as a strategic intervention within neoliberal capitalist regimes of instrumentalization, should not be lightly dismissed. For the billions of animals perpetually, generationally incarcerated in the animal industrial complex (and other animal use industries), legal-political subject-status—however flawed—surely offers more opportunity to develop relations of multispecies flourishing than the current status quo of human moral exceptionalism. Acknowledging subjectivity as an onto-epistemologically contingent performance and embodied life as an ongoing entanglement of heterogeneous materialities “does not preclude an ethical consideration of the nonhuman animals who

will become food in a carnophallogocentric economy of sacrifice” (Struthers-Montford & Taylor 2018, 32).

Yet, all too frequently, new materialist theory has been “utilized to undermine normative claims about our ethical relationships toward other animals” (Stanescu 2015 n.p.; Weisberg 2014)—as Hird does when she declares that the prospect of “eating well with bacteria complicates animal rights discourse, vegetarianism and veganism” (Hird 2009, 38; see Weisberg 2014, 103). An explanation of precisely how the recognition of bacteria as lively agents complicates the recognition of animals as subjects who unmistakably communicate their disinclination to be incarcerated, mutilated and murdered, is not forthcoming. Nor does Hird explain why it is only animal and not *human* rights discourses that are undermined by ethically attending to our bacterial companion species, whatever that might mean. This strategy of delegitimizing critical animal theory as myopic and parochial in its insistent focus on creatures who are in some ways ‘like us’ is nothing new. Decades ago, Davis (1995) diagnosed a similar derision towards farmed animals (and their advocates) within dominant discourses of environmental philosophy. Situating environmental ethicist Aldo Leopold’s (1949[1966]) influential exhortation to “think like a mountain” (rather than make a fuss about farmed animal suffering) within a long history of hierarchically dualistic and masculinist philosophizing, Davis shows how certain environmental philosophy discourses (eg. Knox 1991) have caricatured “animal rights” (CAS) approaches to ethics as “a one-note samba” concerned only with “little things” (Knox 1991, 31-32), like individuals and beings with feelings. An environmentalist sensibility, by contrast, in this account purports

to “listen to the entire fugue of rocks and trees, amoebas and heavy metals, dodos and rivers and styrofoam” (Knox 1991, 32). In this grand onto-epistemology, Davis argues, “the small tones of life are drowned out by the regal harmonies of the mountain and their ersatz echoes in the groves of the academe”: how could the soft voices of ‘meat’ animals ever hope to be heard over such “trumpet blasts and iron oratory”? (1995, 204)

While many environmental thinkers have found that “it feels good to think like a mountain,” few have been similarly inclined “to think like a battery hen and view oneself and one’s species through her eyes” (205). The contemporary iteration of this strategy is to declare bacteria, or viruses, or organelles, or multispecies agential assemblages “good to think with” and contrast this sophisticated perspective with the blinkered perspective of critical animal theory: in *When Species Meet* (2008), for example, Haraway shrugs off “the demands individual animals might make as *ventriloquized* in rights idioms” (28, italics added; see also Hird 2009). Agitating for the extension of subjectivity to other animals is mere “humanist posthumanism,” not the cutting-edge “posthumanist posthumanism” of visionaries like Haraway and Wolfe (Wolfe 2010, 125; Fraiman 2012).⁸⁴ Viewed in this light, the neomaterialist/posthumanist propensity to sneer at critical animal theory’s demand for a more expansive conception of ethical subjectivity takes on a distinct air of theoretical purism. Thinking like or with a farmed animal, it seems, feels no better to many of the posthumanists and new materialists of today than it did to the environmental philosophers of thirty years ago.⁸⁵

⁸⁴ Although Wolfe identifies Haraway as one of a handful of figures representing “posthumanist posthumanism” (Wolfe 2010, 125), Haraway herself rejects the term, insisting “I am not a posthumanist” (2008, 19)

⁸⁵ Haraway’s chapter “Chicken” in *When Species Meet* (2008), written from the ironic perspective of “species chicken” rather than any individual bird, does not (in my opinion) fall within the feminist tradition of theorizing in solidarity with the subaltern that Davis is advocating.

CAS and new materialism are not mutually exclusive ethical paradigms, as ecofeminists are well aware: recognizing the agency of non-animal entities and assemblages need not foreclose the acknowledgement of other animals as ethical subjects. Subjectivities coalesce as material-semiotic narrative nodes within motley agential assemblages of stuff. There is “no single causal factor determining the subject; the elements of subjectivity intra-act in a complex web,” emerging only ever in the encounter with alterity (Hekman 2010, 101). The material feminist insight that agency is an ongoing unfolding of worldly potentialities does not mean that the temporally and corporeally legible nodes that emerge within this dynamic entanglement do not provoke specific modes of response-ability. As Davis asks, are we to suppose “that creatures whose lives we humans have wrecked do not have paramount moral claims on us?” (1995, 202). In answering Davis’ query with a resounding “no,” I do not refute but rather reaffirm a Baradian/Harawayan ethics of entanglement wherein ‘the subject’ emerges not as an ontic entity but as a narrative heuristic aimed at a specific configuration of alterity, a ‘thou’ to whom the ‘I’ enters into specific relations of response-ability — even if both ‘I’ and ‘thou’ turn out to be contingent fictions within a field of various composed and recomposing agential assemblages (Buber 1923; Kepner 1992; Donovan 2016, 79; Haraway 2008a, 1-3). To be clear: I am not arguing that we need to specify our subject of care before we begin to care (a stance rightly critiqued by Schrader [2015]) but rather that being open to relations of care beyond the animal need not negate the specific response-abilities prompted by those creatures who yearn and suffer in ways contiguous to our own and who do so *en mass* at human hands. Identifying and

responding to the ethical obligations posed by particular relations demands “an altogether more fleshly consideration than references to non-innocence and ‘staying with the trouble’” (Giraud, Hollin, Potts & Forsyth 2018, 75). Anti-anthropocentric configurations of subjectivity, I have argued, stimulate ethical responses to alterity and subsequently intervene against the thanopolitical and ecocidal apparatuses of late capitalism. By diffractively engaging SF narratives about meat-eating, I have attempted to articulate a relational subjectivity grounded in response-ability rather than domination that does not cleave the human from *the rest* but recognizes that we are all becoming-with one other in this mangle of worldly matter. Following Braidotti (2014) in “redefining contemporary subjects-in-process as accountable entities” (8) with whom to engage in mutually negotiated relations of response-abilities, I stress the urgency of materializing antidualist configurations of subjectivity as dynamic, performative and always-already relational. The sovereign, autonomous and skin-encapsulated human subject, coherent only through the symbolic and material sacrifice of the animal other, is not the only kind of subject-form possible.

The kind of ethical more-than-human subjectivity I have tried to articulate rejects the philosophical legacy of hyperseparation that chops the world into subjects and objects as not only ontologically untenable, but epistemologically violent. Such intense emphasis on boundary-drawing between what counts and what does not risks rejecting the ecological embodiment and inherent edibility of Earthly agents, all of whom, as Plumwood reminds us, are ultimately meat for one another (2008). If the world is comprised of subjects and objects and we must never consume the former, by default

anything we do consume must fall into the latter category—a pernicious double bind in which any body we consume (creaturely or otherwise) must therefore be an object, to be used ruthlessly and without compunction. Avoiding this respect-use dualism means that simply choosing to eat from the ‘object’ side of this false split, as if that solved the dilemma, is ethically untenable. Haraway is surely correct when she writes that “eating and killing cannot be hygienically separated,” that there is “no way to eat and not to become with other mortal beings to whom we are accountable, no way to pretend innocence or transcendence or a final peace” (2008, 295).

Vegan Subjectivities in D’Lacey’s Meat and LePan’s Animals

Following Quinn and Westwood (2018) in conceiving of vegan practices as subject positions from which to think (2), I would like to return to the human cattle dystopias of chapter two. *Meat* (D’Lacey 2009) provides an example of exactly the kind of subjectivity predicated upon delusions of transcendence and innocence against which Plumwood and Haraway caution. The novel’s sunlight-eating, ascetic insurrectionists, who eschew not only animal flesh but all earthly nutritive matter, vividly bring the figure of the purity-driven, ecologically alienated vegan subject to life. “I want my purity back,” protagonist Shanti declares on *Meat’s* very first page, as he embarks on one of his excruciating daily runs loaded down by a backpack filled with rocks. This “corporeal mortification” (8) is “his only salvation” (2) from the sin accrued through his role as the most efficient bolt-gun stunner on the disassembly line of the Magnus Meat Processing Company—a clearer demonstration of a food ontology predicated upon Haraway’s salvational logic of penance could hardly be imagined. However, it is the novel’s

description of a quasi-religious cadre of meat-eschewing rebels that most conspicuously articulates Plumwood's critique of the ecologically alienated eater. In the novel, Prophet John Collins and his "followers of the light" mount an insurrection against the carnist status quo, fighting with superhuman grace and strength to defeat the sluggish cannibal henchmen of the evil meat baron Magnus. "Unlike the meat-eating folk in the town," Collins is "prepared to think about things differently," and is ultimately able to find a way "to survive without causing harm to any other living thing" (138). He discovers "that refraining not only from eating meat, but from eating anything at all, changed the workings of his mind and gave him access to different levels of consciousness" (134). Collins and the most "advanced" (200) of his followers forsake eating altogether, instead finding nourishment through sunlight and breath with the eventual goal of transcending even these concessions to physical metabolism. "When enough wisdom and love had been acquired, even the need to breathe would become a thing of the past. People would understand they were immortal, that they had always possessed the potential without realizing it" (294). Aspiring "followers of the light" need not despair at the apparent unattainability of this level of absolute inedia: Shanti reassures himself (and the reader) that "[a]s a vegetarian he was halfway there already" (218). Clearly, veganism in *Meat* is understood as a matter of purity, a step on the path towards the ultimate goal of transcendence from physical embodiment altogether. This understanding of the "essentially or authentically human part of the self...as at best accidentally connected to nature and at worst in opposition to it" (Plumwood 1993, 71) is a corollary of hierarchical dualism's denial of dependency upon its subordinate others, which come to be seen "as a source of anxiety and threat" (2002: 108). The

authentically human subject is thus positioned as outside nature, as a disembodied spirit only accidentally mired in mortal animal flesh; promises of salvation from death and bodily limitation are made possible by denying human continuity with and interdependency upon the rest of planetary life (49). One result of this denial is that humans are seen as “the only real subjectivities and actors in world” (19): this is literally the case in *Meat*, in which no animals other than humans appear in the entire story. Steeped in a dualistic conception of spirit vs. matter and articulated via a thoroughly Christian logic of sin and salvation, the vegan revolutionaries of *Meat* discursively corporealize in remarkable detail the figure of the ecologically alienated vegan pretending innocence of killing and dreaming of freedom from the shackles of the food chain.

However, vegan subjectivities are not monolithic (Quinn & Westwood, 2018):

The vegan is not a stable subject secured by a fixed discourse. To be vegan means drawing lines by being committed to animal wellbeing, but also troubling the drawing of lines by querying the need for stable identities, definitive categories of selfhood and sovereign actions that rebuff all critique. (Schuster 2017, 210)

The ecologically alienated vegan subject with delusions of innocence and purity, so prominent in *Meat*, is nowhere to be found in *Animals* (LePan, 2010). Instead, LePan’s novel deploys a bifurcated narrative structure in respectively emotional and rationalist registers to bring vegan and carnist ideologies into dialogue, historicizing the spatial and temporal contexts in which meat-eating operates and refusing to fully condemn or

condone any dietary praxis. *Animals* endorses neither veganism nor carnism, forcing the reader to confront the task of finding how “to live responsibly within the multiplicitous necessity and labor of killing” (Haraway 2008a, 8, in Vint 2010, 37); its depiction of fields of vegetable picked and tended by ‘mongrel’ slaves actively works to dispel the delusion that vegetable foods can a priori be assumed to be nonviolent. *Animals* emphasizes that any food needs to be understood a “loci of relations” as well as a corporeality (Heldke 2012, 82),⁸⁶ “hustle and flow as well as sediment and substance” (Bennet 2007, 135); readers are pushed to make up their own minds regarding how to ethically navigate the murky foodways of industrial capitalism.

Against purity: critical intersectional veganism

As LePan’s *Animals* demonstrates, vegan subjectivities encompass a diversity of positions (Quinn & Westwood, 2018, 3) and need not entail a rejection of ecological embodiment or trade in dreams of purity, salvation and innocence.⁸⁷ To suggest otherwise can only be seen as strategy of delegitimization (Adams, forthcoming): after all, many vegans themselves reject the rhetoric of veganism as an ethical endpoint or “manifesto for purity,” as Giraud has amply demonstrated in her analysis of radical grassroots activist discourses (2013b; see also Torres & Torres, 2010, 10; Deckha 2012; Twine 2013, 139; Salih 2014, 65; Cole 2013, 218; Philips 2010, 11; Koletnik 2014;

⁸⁶ Heldke finds the ‘silo-ing’ of animal/human/environmental concerns as separate domains problematic, but her own analysis of meat’s ‘loci-of-relations’ consistently invisibilizes animals. “Heldke’s “witness” at most asks us to recognize the various [human] labour relations and environmental resources that we used in the making of the steak. The animal whose flesh became this steak, is never attributed subjectivity or recognized as a subject of these relations” (Struthers-Montford 2017, 65-66).

⁸⁷ “Just because vegans do not eat animal products does not mean that everything else they eat does not somehow embed the (vegan) human in the rest of nature” (Twine 2014, 203)

Wright 2015; Quinn & Westwood, 2018). Giraud points out that animal advocacy pamphlets and other activist literature demonstrate an acute awareness of food's embeddedness in systems of exploitation that may exceed animal abuse (2013b, 111).

Consider the following passage from a UK animal advocacy zine:

When we purchase a food product at the grocery store, we can read the ingredients list and usually tell whether animals are murdered and/or tortured in the production process. But what do we learn of the people who made that product? Were the women paid less than the men? Were blacks subjugated by whites on the factory floor? Was a union or collectivization effort among employees crushed? Were a hundred slaughtered on a picket line for demanding minimum wage? (Dominick 2008, 13; in Giraud 2013b,111).

Blanket allegations that veganism espouses purity, as Adams (forthcoming) argues, are an example of a “truncated narrative” that “wrenches an ethical problem out of its embedded context” (Kheel 1993, 19). Purity accusations—when levelled against veganism as a monolithic whole rather than specific instances of ecologically disembodied eating ideologies, vegan or otherwise—distort and decontextualize the issue at hand. “Since we cannot live purely in this world,” Adams points out, “labelling veganism as purist offers a way to justify maintaining the violent and destructive status quo” (forthcoming). One need only look to how Haraway has been taken up in food activism to see how her arguments against purity-based food ontologies have been deployed to delegitimize plant-based diets as one end of an untenable ‘extreme,’ with the unfettered atrocities of animal industrial complex on the other (Giraud 2013a). “How much safer it is,” Adams reflects, to dismiss veganism as a form of purity or extremism

“than to get into the muck of what it means to care” (Adams, forthcoming). For those with means and access in developed countries, “veganism is a part of our resistance” to systemic hierarchical dualisms sanctioning violence and inequality, “and to use accusations that prevent a discussion about the real issues is dangerous” (Adams, forthcoming).

Hierarchically dualistic configurations of vegan subjectivity stressing purity, innocence and transcendence of earthly response-abilities certainly exist—D’Lacey’s *Meat* did not magically appear out of nowhere—but they cannot be taken as indicative of vegan subjectivities as a whole. Haraway may not have had veganism in mind when she argued that “we must cast our lot for some ways of life (and death) and not others” (Haraway, 1997, 36), but this is precisely what vegans do by attempting to minimize harm within presently capitalistic and consumerist modes and means of production and consumption (Twine 2013, 139-40; Struthers-Montford 2017, 75). Rather than a capitulation to a hyperseparated logic of respect-use dualism or some top-down universal injunction against zoophagy, veganism can be understood as an socio-historically embedded intervention against the machinations of an ecocidal carnocapitalist system that designates certain creaturely bodies—human and otherwise—as legitimately exploitable (Kheel 2009, 235; Adams, forthcoming; Giraud 2013a, 2013b; Pedersen 2011; Greenebaum 2017). As Giraud puts it, intersectional veganism is “a critical-theoretical tool with the power to both unsettle material forms of exploitation and the epistemologies that provide ethical legitimation for these practices” (Giraud 2013a, 49; Pedersen 2011, 75; Kheel 2009, 235). “An entanglement of identity, practice

and ethics that refuses to sanction the carnivorous human subject” (Quinn & Westwood 2018, 3), the embodied ethical praxis of veganism can be understood as counter hegemonic subject-position that disrupts carnophallogocentric norms by “contesting the dominance of animal-product consumption narrative[s]” in Western nation-states in an “ongoing struggle to produce socio-spatial epistemologies of consumption that lead to cultural and spatial change” (Harper 2010, 5-6). Neither naïve nor utopian, critical intersectional veganism constitutes a “worldly mode of engagement that acknowledges the realities of violence” and the insufficiency of individual consumer response-ability without letting such insufficiencies preclude action (Pick 2012a, 68).

Conclusion: New stories, new directions

The preceding chapters have deployed a diffractive approach to attend to the performative enactment of subjectivity through the intra-action of differentially-constituted agential assemblages and material-discursive apparatuses. In arguing for the ethical urgency of moral extensionist approaches to nonhuman subjectivity, I also acknowledge the exclusionary boundaries that are inevitably enacted by such an agential cut. However, I maintain that these agential cuts need not dichotomize subjects and objects, bios and zoë; as I have argued throughout, cleaving the morally considerable from that which is available for use constitutes an ecologically incoherent and epistemologically violent paradigm born of denial-of-dependency and other machinations of hierarchical dualism. I have drawn upon SF about meat-eating to articulate the transcorporeality of material bodies and the pleasures and possibilities of deconstructing boundaries between subjects in ways that do not seek to assimilate

differences, but proliferate and transform them. This material feminist approach to the agential enactment of subjectivities complements rather than contradicts the normative commitments of critical theories aimed at promoting animal flourishing. Following a plethora of feminist animal scholars, I argue that critical, contextual vegan practices, rather than espousing an ideology of transcendence or purity, encourage ecological embodiment by “commingling with and responding to the symbolic and biological agency of encountered, ingested matter” (Pick 2012a, 82) in an ongoing “labor of love and justice that works hard to see clearly not only the webs of interspecies relations as they are but *as they could be*” (Pick 2012b, n.p., emphasis mine). This subjunctive frisson between what *is* and what *could be* is a prime example of estrangement, identified by Braidotti as “a method to free subject formation from the normative vision of the self,” in this case the carnophallogocentric subject (Braidotti 2009, 527). Perhaps this is why SF has always offered such rich material for critical-theoretical engagements with more-than-human subjectivities. A literature of cognitive and affective estrangement, SF imagines worlds as they could be and brings them into dialogue with our own (Delany 1984a, 117); “it is a discourse that allows us to concretely imagine bodies and selves otherwise, a discourse defined by its ability to estrange our commonplace perceptions of reality” (Vint 2007, 19). In this way, both SF as a genre as veganism as a material-discursive praxis push the subjects of advanced capitalism to respond to each other, in Haraway’s words, “in relentless historical, nonteleological, multispecies contingency” (2008a, 8) and participate in the ongoing work of imagining and enacting our shared worlds differently.

The narratives engaged in this dissertation deploy the estranging techniques of SF to complicate and contest human/animal and other hierarchical dualisms that have long undergirded configurations of ethico-political subjectivity. Through literary representations of creaturely hierarchy reversals and slippages, alliances with semi-living materialities, weird intimacies across species and scales and ethically ambiguous more-than-human metamorphoses these science fictional meat stories “challenge the notion that humans are in the story all by themselves” (Fawcett 2000, 145), a belief that is “not just ordinary human bias [but] a cultural agenda tied to dreams of progress and modernization” (Tsing 2015, 155). However, this does not mean that any of these narratives are faultless examples of intersectional storytelling. Each contains serious shortcomings: *The Wess’har Wars* (Traviss 2004-8) espouses retrograde gender politics while *The Space Merchants* (Pohl & Kornbluth 1953) and “Drop Dead” (Simak 1956) exclude women from narrative agency altogether. *Meat* (D’Lacey 2009) is quite simply a misogynist nightmare. *The In Vitro Meat Cookbook* (van Mensvoort & Grievink 2014) entrenches the centrality of animal flesh in culinary culture, “Season of the Babies” (DeFord 1959) and “Morality Meat” (Sheldon 1985) deploy the figure of the farmed animal with little accountability to real farmed animals themselves and *Oryx and Crake* (Atwood 2003) is palpably hostile to animal advocacy. *Bone World’s* (O’Guilín 2007-14) racial dynamics are fraught at best, *Animals* (LePan 2010) ambivalently reinscribes gendered and ableist dualisms and the otherwise excellent *Xenogenesis* (Butler 1987-9) is marred by its relentless heterocentrism. New stories are needed, notably from queer, feminist, Indigenous, racialized and/or non-Anglophone storytellers; ecocritical feminist engagements with SF must continue to strive to provide space in

which the voices of the subaltern can be heard on their own terms (Gaard 2017, xv).

This dissertation is no exception; only one of my main SF authors is a person of colour, only one (that we know of) is queer and none are Indigenous or writing in a language other than English or from a perspective other than Western (post)industrial.

Methodologically, my analysis has largely elided queer theory and sexuality studies perspectives; certainly, queer theory has considerable sympathetic resonances with material feminism and has much to offer critical engagements with literary subjectivities and agencies beyond the human (Merrick 2008; Mortimer-Sandilands & Erikson 2011; Barad 2011; Chen 2012; Ahuja 2015; Griffiths 2015; Quinn, 2018). While this dissertation has been largely concerned with critiquing the Western tradition from within, this strategy has its shortcomings (Belcourt 2014); Indigenous perspectives are invaluable in figuring out affirmative alternatives to settler ontologies of hierarchical dualism, as Indigenous scholars such as TallBear (2011; 2013; 2015; 2017), Belcourt (2014) and Robinson (2013; 2014; 2017) have argued. Indigenous ontologies have also in important ways prefigured CAS, material feminist and science studies theoretical preoccupations (such as more-than-human subjectivities, agential realism and symbiogenesis) (Deloria 2001; TallBear 2011; Watts 2013; Todd 2014; Struthers-Montford 2017). Despite these limitations, what I hope this dissertation *does* offer is a sustained exploration of the generative overlap between critical animal and new materialist theories and an articulation of the ways in which ecofeminism is well-positioned to effect such an exploration. Following Giraud (2013a; 2013b), Gaard (2017), Struthers-Montford & Taylor (2018) and others, I argue that these orientations need not be positioned at loggerheads. Animal advocates need not reject kinetic

ontologies of transcorporeal, multispecies becoming-with and posthumanist/multispecies/neomaterialist thinkers need not dismiss critical animal theorists as sentimental simpletons marching to the beat of a one note samba. Diffraction as critical methodology is about reading differences through differences, about discerning patterns of differences that matter; “there is nothing to be gained by artificially magnifying the differences” between CAS and posthumanist neomaterialism’s overlapping political positions (Nimmo 2015: 193). Future research at the intersection of critical material ecofeminism, critical animal studies and science fiction studies has ample opportunities to collaboratively bring forth an “on-going apparatus that seeks to produce research that is attentive, plural, partial and politically ambitious” (Hollin, Forsyth, Giraud & Potts 2017, 24) in its mandate to understand and imagine “what kinds of care, regard and responsiveness might be possible for us in relationship to the natural world” (Plumwood 2002, 165). In doing so, subjectivities must be re-imagined ecologically and enacted “in terms of concrete practices of restraint and humility” (2008, 325), with humans firmly situated as embodied animal beings, enmeshed with and accountable to a much larger community of actants on a finite planet.

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