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MaddAddam, Biocapitalism, and Affective Things

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Abstract
This essay considers the ethical dimensions of Atwood's recent speculative fiction, the MaddAddam trilogy alongside a framework Nikolas Rose, Sunder Rajan, and others term biocapitalism. The trilogy imagines the social, cultural, affective, and ecological implications of the convergence of capitalism and biotechnology. In the MaddAddam trilogy, the fantasy of human independence and invulnerability central to neoliberalism and biocapitalism is depicted at its devastating endgame in which the unbridled commodification of life has resulted in its near annihilation**.** Atwood's novels suggest that we ignore interdependence, affectivity, and responsibility to our peril, evoking a posthumanist perspective in their dramatization of a catastrophic anthropocentrism that regards organic matter -- the world's flora and fauna, the human body's cellular data -- as marketable, utilitarian objects.

> Literature is an uttering, or outering, of the human imagination. It puts the shadowy forms of thought and feeling— heaven, hell, monsters, angels, and all— out into the light, where we can take a good look at them and perhaps come to a better understanding of who we are and what we want, and what our limits may be. Understanding the imagination is no longer a pastime or even a duty but a necessity, because increasingly, if we can imagine something, we'll be able to do it. (Atwood in *PMLA* 517)

Atwood's Speculations

One year after the first instalment of the MaddAddam trilogy *Oryx and Crake* appeared, Margaret Atwood published the passage cited above as part of an essay outlining her approach to speculative fiction. In this 2004 publication, she describes the distinction she draws between the speculative and science fiction genres, one that has, according to

Atwood, gotten her into "hot water" (513). Indeed, her insistence on categorizing her own work as speculative, rather than science fiction has become a recurring concern in the discussion of her work; as she explains in a 2011 article for the *Guardian*: "scarcely a Q&A session goes by at my public readings without someone asking, usually in injured tones, why I have forsworn the term science fiction" ("Margaret Atwood: The Road to Ustopia").[1] In the *PMLA* essay, she goes on to defend the distinction nonetheless, explaining that unlike science fiction, which "denotes books with things in them we can't yet do or begin to do, talking beings we can never meet, and places we can't go," speculative fiction "employs the means already more or less to hand" (513). In other words, speculative fiction involves a process of extrapolation, as opposed to the pure invention of science fiction. This distinction is particularly important for Atwood because her forays into fantasy, in particular, *The Handmaid's Tale* and the MaddAddam trilogy, are especially invested in projecting possibilities based on contemporary bioscience, and conservative and neoliberal politics. The MaddAddam novels are not flights of fancy, Atwood's distinction implies, but cautionary tales that project the catastrophic outcome of contemporary neoliberal market economies directing and harnessing current developments in biotech, producing a biocapitalist system in which the matter and codes of life become the dominant commodities for exchange. As the epigraph to this essay makes clear, Atwood employs fiction, "an uttering, or outering, of the human imagination," to conjure the dangers of unchecked anthropocentric bioscientific "progress." Atwood establishes fiction, particularly speculative fiction, as a harbinger and an ethical imperative, a warning and an urging.

This essay considers the ethical dimensions of Atwood's recent speculative fiction, the MaddAddam trilogy. These novels imagine the social, cultural, affective, and ecological implications of the convergence of capitalism and biotechnology, what Nikolas Rose, Sunder Rajan, and others term biocapitalism. Stefan Helmreich provides a helpful gloss of the term: "in the age of biotechnology, when the substances and promises of biological materials, particularly stem cells and genomes, are increasingly inserted into projects of product making and profit-seeking, we are witnessing the rise of a novel kind of capital: biocapital" (463-4). I read Atwood's speculations as extrapolations and extensions of the work of Rajan, Rose, Thacker, and others who analyze the ramifications of biocapitalism.[2] Comprised of the novels *Oryx and Crake* (2003), *The Year of the Flood* (2009), and *MaddAddam* (2013), the trilogy depicts the causes and effects of a devastating pandemic, which, in conjunction with environmental collapse caused by climate change, has nearly eliminated the human population. The novels narrate stories of disaster through various perspectives: Jimmy, best friend of the pandemic's mastermind, Crake, in *Oryx and Crake*; survivors Toby and Ren in *The Year of the Flood*; Toby and Zeb in the final instalment, *MaddAddam*. The novels depict a motley crew of human survivors: members of the environmental religious cult, God's Gardeners (Ren, Toby, Adam), the environmentalist guerrilla group, MaddAddam (Zeb, Crozier, Shakleton, Oates, etc.), and a few homicidal criminals whose empathic capacities have been destroyed by their time in gladiator-like "Painball" prison. In addition to these human survivors, there are a plethora of nonhuman creatures still inhabiting Earth, including bioengineered life forms, such as liobams, pigoons, rakunks, and the humanoid "Crakers," a species designed by Crake to exist in harmony with their environment.

In *Oryx and Crake*, the novel's antagonist, the scientist nicknamed Crake, describes humans as "faulty" "hormone robots" (203), a perspective that trivializes human suffering, thereby facilitating his genocidal attempt to save the planet by engineering a pandemic. His attitude toward human life is an uncanny echo of Nobel prize-winning geneticist Herman J. Muller's claim: "Man is a giant robot created by DNA to make more DNA" (qtd. in Holler 88). If humans are simply DNA, or hormonal robots, Atwood's novel speculates, why not replace the "faulty" species with a superior model, such as the carefully engineered Crakers? The Crakers are like organic robots, meticulously constructed, rather than "naturally" evolved. Crake's posthuman fantasy – the replacement of humanity with a superior, engineered life form – is the logical, if homicidal culmination of the biotech obsession that organizes the MaddAddam universe. In these novels, the preoccupation with biology *as* technology marginalizes responsibility, obligation, and the affective and ethical dimensions of human life to the point of obscurity.

In the MaddAddam trilogy, the fantasy of human independence and invulnerability central to neoliberalism and biocapitalism is depicted at its devastating endgame in which the unbridled commodification of life has resulted in its near annihilation. Atwood's novels suggest that we ignore interdependence, affectivity, and responsibility to our peril, evoking a posthumanist perspective in their dramatization of a catastrophic anthropocentrism that regards organic matter -- the world's flora and fauna, the human body's cellular data -- as marketable, utilitarian objects. Rosi Braidotti regards this form of biocapitalism as ironically *post* anthropocentric: "In substance, advanced capitalism both invests and profits from the scientific and economic control and the commodification of all that lives. This context produces a paradoxical and rather opportunistic form of post-

anthropocentrism on the part of market forces which happily trade on Life itself" (59). The prioritization of market forces that marginalize human lives is indeed ironically post-anthropocentric, appearing to undermine, rather than engage posthumanist critique. However, the commodification of life is inevitably profitable for certain human populations; advanced capitalism, or biocapitalism, remains an anthropocentric prioritization of *human* needs, gains, wants. This essay grapples with the MaddAddam trilogy's depiction of human engineered disasters (massive climate change; a bioengineered pandemic) as an exploration of the capitalist technoscience Braidotti describes: an instrumentalizing commodification of life that disavows affectivity and responsibility. The trilogy's central disaster reflects the perilous ramifications of transhumanist biotechnology, that is, biotechnology employed in the pursuit of human perfection, control, and transcendence of ecological interdependence. Such developments, Atwood's novels imply, impede ethical relations, and at the same time evoke post-disaster cross-species collaboration that suggest the possibility of posthumanist regeneration.

MaddAddam and Posthumanism

Literary critics have been divided in their responses to the novels that make up the MaddAddam trilogy, particularly *Oryx and Crake*. On the one hand are critics such as Veronica Hollinger and J. Brooks Bouson, who treat the novel as an expression of Atwood's scepticism, even dread, towards biotechnology, posthumanism, and hybridity. Hollinger describes *Oryx and Crake* as an "old-fashioned dystopian warning about the potentially catastrophic effects of unbridled biogenetic engineering and unstoppable environmental collapse" (455) that is "anything but celebratory in its constructions of

hybridity . . . [as a representation of] the unnatural, the transgressive, the grotesque and monstrous results of technoscientific stupidity and greed" (456). Similarly, Bouson interprets the novel as an expression of Atwood's "fears that in our new age of genetic manipulation and biological control, we may be blindly entering a catastrophic posthuman future as our scientific mavens sit in judgment on the world and play God with the building blocks of life" (149). Grayson Cooke and Ralph Pordzik, on the other hand, both treat the first novel as a critique of the artificial boundary between the human and non-human that removes "humanity from any particularly privileged position in relation to matters of engineered evolution, perfectibility, and environmental change (or disaster)" (Pordzik 156; see Cooke 124). Though these critics all regard Atwood's novels as satirical critiques that expose the risks of anthropocentric bioscience, they imply very different relationships between the novels and posthumanism. Indeed, analyses like Hollinger's and Bouson's suggest Atwood's speculations affirm humanist principles, despite the trilogy's derision of anthropocentrism. They regard the novel as a straightforward cautionary tale about "transgressive" hybridity and a "catastrophic posthuman future" that implies a reification of the human and the humanities as valuable ontologies and epistemologies at risk of annihilation by inhuman, and inhumane, biotechnology. My own reading of *Oryx and Crake* and the subsequent MaddAddam novels is closer to Cooke's and Pordzik's, which veer toward a posthumanist perspective in their attention to the human as mechanical, as animal, as posthuman. My investigation expands upon J. Narkunas's essay on the trilogy, particularly its treatment of Atwood's canny "critique of instrumentality—the rendering thing of the human, the human's thingification" (3). However, my own analysis shifts Narkunas's treatment of

"thingification," appealing to Bill Brown's thing theory to differentiate between instrumental objectification and sensual "thingification" in order to consider the affective and ethical implications of Atwood's biotechnological speculations. Whereas Narkunas regards the trilogy as a "profound critique of humanism, posthumanism, and transhumanism" (3), I argue that the novels' speculations in fact echo many of the critiques offered by critical posthumanists.

Defining posthumanism is a tricky business since different groups employ the term to signify differing, often opposing perspectives: while some posthumanists are committed to critiquing and dismantling humanist ontologies, others seek to reify and enhance these ontologies through technological innovation – and both under the name of posthumanism. For the sake of clarity, the former are often called "critical posthumanists" and the latter "transhumanists." But even within critical posthumanism, there is debate around what constitutes *true*, or *legitimate* posthumanist critique. For example, in her carefully parsed distinction, Ursula Heise argues that science fictional depictions of posthuman others do not necessarily problematize humanist perspectives based on a privileged account of "human uniqueness" (506). According to Heise, because *Oryx and Crake* remains "committed to a conventional humanism that values high culture as the true indicator of human achievement" (507), it cannot be posthumanist. Heise acknowledges the novel's preoccupation with the intermingling of human and non-human biology, but argues that despite this biologically posthuman context, the novel affirms "that authentic humanness can be identified through culture" (509). While I find Heise's distinction between fiction that merely adopts posthuman contexts and that which is *truly* posthumanist helpful in distinguishing between representations of "varying forms of

technological and biological consciousness" and texts that "ultimately distance themselves from an affirmation of human uniqueness" (Heise 505-06), I am wary of the "either/or" logical fallacy that can result from such curt distinctions. I agree that Atwood's trilogy, particularly its first instalment, reifies cultural expression in ways that privilege the uniqueness of human consciousness. However, I argue that this affirmation of human uniqueness is concomitant with powerful posthumanist critique. The "transgressive," "monstrous" hybrids Hollinger identifies as evidence of Atwood's anti-postmodernist humanism are also powerfully destabilizing reminders of human consciousness as one form among many, embodying a challenge to the kind of human exceptionalism necessary for the liberal humanist's treatment of the earth as simply a store house of available material.

My interpretation of posthumanism stems from the work of critics and philosophers like Braidotti, N. Katherine Hayles, Donna Haraway, Carey Wolfe, and others,[3] which critiques the anthropocentric exceptionalism inherent to humanist philosophical perspectives. This strand of critical posthumanism involves a "decentering of the human in relation to either evolutionary, ecological, or technological coordinates" (Wolfe xvi). From a critical posthumanist perspective, human corporeality makes us irrevocably dependent and interdependent, embedded within ecological and technological systems, rather than independent of them. Critical posthumanists regard the dissolution of human distinction as a positive dismantling of a destructive illusion since the belief in human exceptionality results in dangerous hierarchies of being that deny human animality, obscuring our ecological embeddedness and our embodied vulnerability (Braidotti 13-16). Critical posthumanism seeks to expose and reverse this

denial. It does not promote the crossing of boundaries between human and non-human elements, but rather exposes how the human is always *already* implicated in the nonhuman, and vice versa. In other words, as Hayles asserts, "we have always been posthuman" (291). Critical posthumanists, taking their cues from poststructuralist theory, explain that the human is dependent on the nonhuman for its categorical existence. We erect structural boundaries and distinctions to shore up the illusion of human exceptionalism; critical posthumanism seeks to interrogate and dismantle these boundaries. "Posthumanism," Wolfe writes, "isn't posthuman at all—in the sense of being 'after' our embodiment has been transcended—but is only posthuman*ist*, in the sense that it opposes the fantasies of disembodiment and autonomy inherited from humanism itself" (xv).

Atwood's trilogy evokes a dawning posthumanism in its depiction of a world destroyed by anthropocentric instrumentalism. In Atwood's dystopic vision the liberal humanist reification of the individual leads to a society and culture in which dependency and vulnerability have been denigrated and denied. As I discuss below, the novels depict the repercussions of a transhuman, biotechnological epistemology that understands life forms as biological matter, as intelligible data. This "instrumentalization" and "datafication" of life leads to insularity, restricting or omitting opportunities for affective relations, that is, emotional relations in which bodies affect and are affected by the world around them. The situation is an exaggeration of trends identified by Kathleen Woodward in her study of the cultural politics of emotions, *Statistical Panic*. Woodward highlights the cultural devaluation of strong emotions in mid-century United States, which led to anxiety about the supposed lack of psychological emotions in the new millennium (8, 18)..

Atwood reiterates this concern in her depiction of the pre-disaster MaddAddam world of corporations, compounds and sinister CorpSeCorps security. In this society, a lack of affect is valued, while communication and emotionality are dismissed or derided, producing a hierarchical distinction between so-called numbers people and word people. This cultural derision towards feelings produces a paucity of sensation that Crake exploits with the development of his deadly BlyssPluss pill, which promises extreme, pleasurable embodied affects, but in fact obliterates the bodies that consume it. Crake's bioform is a gruesome reminder of subjects as vulnerable, affective bodies. In the transhuman world before the disaster, biology is treated as available material for human manipulation and consumption. In the pandemic disaster the God's Gardeners call the "Waterless Flood," disavowed vulnerability returns with a vengeance as Crake's engineered haemorrhagic virus invades the human population, reducing human bodies to a kind of primordial goo.

Biotech, Biomedia, Biocapitalism

Atwood's speculative fiction cannily reflects and projects the uneasy relationship between contemporary biotechnology and bioethics in a biocapitalist economy. Biotechnology is, according to the UN *Convention on Biological Diversity*, "any technological application that uses biological systems, living organisms or derivatives thereof, to make or modify products or processes for specific use" (United Nations 2). Since its inception, "biotechnology" has been synonymous with the instrumentalization of life, premised on the conceit that "biology is itself a technology," and therefore is decipherable and modifiable (Thacker, "Data" 94). In his analysis of the discipline, Eugene Thacker draws on the work of science historian Robert Bud, which demonstrates how the term

"biotechnology" "has, at least since the nineteenth century, indicated the industrial uses of naturally occurring processes (such as fermentation, agriculture, livestock breeding)" ("Data" 94). As the title of Bud's 1993 book on the subject indicates, biotechnology has, since its inception, been invested in "The Uses of Life," an instrumental focus that brings together the impulses of biology and economics. This instrumentalization of life, refined by molecularization and genetics, has given rise to the datafication of bodies, life, and the human (Rose 13-14)**.** Nikolas Rose explains how the discovery of DNA and the development of gene therapy have blurred ontological distinctions, raising difficult questions about the vitality of biological data. For example, he asks, "Are DNA fragments replicated, engineered and manipulated *in vitro* by recombinant techniques 'life' – let alone 'human life'?" (15). He outlines an ontological shift from the nineteenth-century "eugenic body," from the body as "a vital living system, or a system of systems" that interacts with the social body, to the twentieth-century "genetic body" understood in terms of submicroscopic components and processes. Biology is now understood in the terms of language: life is "imagined as sub-cellular processes and events, controlled by a genome which is neither diagram nor blueprint but a digital code written on the molecular structure of the chromosome" (Rose 14). The instrumental codification of life introduces new possibilities for biocapitalism, including new ways to commodify, trade, and profit by life itself.[4]

As Thacker explains, the linguistic coding of biology is not metaphorical or symbolic, but profoundly literal. Biology, the body, *is* "first and foremost" a medium ("What" 57). The double status of genetic material as information and biology give rise to what Thacker terms "biomedia," which he defines as "the informatic recontextualization

of biological components and processes" ("What" 58). For Thacker, biotechnology epitomizes biomedia: as the portmanteau suggests, "biotechnology" involves the transformative *convergence* of biology and technology, as opposed to the application of technological mechanisms or devices to biological matter. Biotechnology refers to the processes integral to an understanding of bodies as "biomedia," as simultaneously biological *and* technological. Biotechnology understands biology *as* technology, as, according to Thacker, "in fact, a better technology than any we can build ("What" 47). As such, biotechnology is an instrumental epistemology at the crux of Atwood's dystopic speculations. As the MaddAddam trilogy demonstrates, if biology is understood as technology, as information, life can be understood as informatic, and therefore, quantifiable, modifiable, marketable.

Understandably, biomedia's hyper-attention to molecular biological data risks eschewing a holistic view of organisms: their integral interactions, interrelations, interdependence, their participation in vast, complex biological networks. When biology is understood *primarily* or *exclusively* as biomedia, the body's affective sensuality, its interactions with other bodies and environments, its capacity for, and dependence on affects, connections, and relationships, appear secondary, even irrelevant. This is the process of attrition MaddAddam conjures in its dystopic vision of biomedia and biocapitalism.

Atwood's trilogy sounds a series of alarms about the consequences of assuming "some fundamental equivalency between genetic 'codes' and computer 'codes,' or between the biological and informatic domains, such that they can be rendered interchangeable in terms of materials and functions" (Thacker, "What" 51). Treating

biology, and, by implication, bodies, as information threatens to institute hierarchies that privilege the quantifiable, and devalue the incalculable. If biology is understood as technology, as informational codes, an easy slippage can produce life as *exclusively* informatic. Teresa Heffernan explains the risks posed by a molecular ontology that regards life as code that can be written, read, and revised. Heffernan's critique employs Hayles's description of the "'Platonic backhand and forehand,' where the multiplicity of the world is first simplified and abstracted, and then, perversely, the abstract form is made to stand in as the originary point; the multiplicity and complexity of the world is hence understood, as Hayles puts it, as 'a "fuzzing up" of an essential reality'" (128). In the MaddAddam trilogy, those "word people" who "fuzz up" the essential, quantifiable reality of life are a liability. When biotech reigns supreme as the most profitable and powerful industry, the distinctions between biology and life or identity blur, and non-informatic existence appears worthless. In Atwood's trilogy, global markets based on the augmentation and perfectibility of human technology have made biotech the planet's most profitable and powerful industry.

Hence the distinct preference for so-called "numbers people" in the corporate community in which *Oryx and Crake*'s protagonist, Jimmy, was reared, and the patronizing tolerance displayed toward those without strong mathematical inclinations (31). "Word people," whose aptitude for the outdated medium of language with its irritating imprecisions and ambiguities are superfluous, if not outright liabilities in a society where prosperity depends on using mathematical modelling and algorithms to incessantly "improve" biomedia. Jimmy recalls his bioengineer father coming home with champagne to celebrate the success of his "neuro-regeneration project," which has produced "genuine

human neocortex tissue growing in the pigoon" (66), a bioengineered pig species created to grow and house human organs for xenotransplantation. His mother refers to the operation as a “moral cesspool” and castigates his father for immoral and sacrilegious interference with "the building blocks of life” (67). Jimmy’s father is indignant, regarding his work as fundamentally a matter of engineering: “it’s just proteins,” he exclaims, “there's nothing sacred about cells and tissues” (67). Throughout the MaddAddam novels, the reader finds similarly zealous biotech engineers and architects like Jimmy’s father, and later Crake, treating biology as functional material, modifying, engineering, and manufacturing life forms without any concern for the ethical or ontological consequences. This instrumental, informatic ontology abnegates relationality, affectivity, and care in its overattention to the codified, algorithmic matter of life.

Biotechnology’s convergence of bioscience and computer science, which depends on the molecular compartmentalization of life, introduces new market opportunities. “The calibration of living entities as code, enrolling them within bio-informatic economies of value which converge with capital economies” produces what Catherine Waldby terms “biovalue” (33); the instrumentalization of life for profitable exchange. As Waldby explains, biovalue

> specifies ways in which technics can intensify and multiply force and forms of vitality by ordering it as an economy, a calculable and hierarchical system of value. Biovalue is generated wherever the generative and transformative productivity of living entities can be instrumentalised along lines which make them useful for human projects--science, industry, medicine, agriculture or other arenas of technical culture (33).

The emergence of "the genetic body," "biomedia" and "biovalue" blur boundaries between subjects and objects: "The classical distinction made in moral philosophy between that which is not human – ownable, tradeable, commodifiable – and that which is human – not legitimate material for such commodification – no longer seems so stable" (Rose 15). In the MaddAddam world, "biovalue" is powerful to the point of domination, producing a biocapitalist economy in which biotech corporations like OrganInc Farms, NooSkins, and RejoovenEssense trade in genetic material and modifications, in viruses, vaccines, tissues and organs.

Affective Things

In the early chapters of *Oryx and Crake* the reader meets Jimmy, the solitary human survivor of the apocalyptic annihilation of the human race. Jimmy is understandably distraught, his thoughts a jumble of anxious fears and painful memories. He appears alienated from his own affects, his tears experienced as "salt water . . . running down his face again. He never knows when it will happen and he can never stop it" (11). His helpless dissociation from his body's emotional outbursts is, readers soon learn, a legacy of the pre-disaster world in which he was raised. Jimmy's alienation from affect continues throughout the novel: "He feels like weeping. Then he hears a voice – his own! – saying *boohoo*; he sees it, as if it's a printed word in a comic-strip balloon. Water leaks down his face" (161). His own affective physiological responses appear cartoonish, unexpected, and disconnected from his consciousness. The noise of his suffering seems to him like the "exaggerated howling of a clown – like misery performed for applause" (162). Jimmy's

alienation from embodied affects is the legacy of a cultural preference for impervious rational subjects unhampered by irrational emotionality.

Affect studies demonstrates the implausibility of cultural distinctions between cognition and emotion, confirming of the relationality of human life, foregrounding the unavoidable impacts, traces, and effects of interactions between bodies and the world. In Ben Anderson's succinct formulation, which builds on Baruch Spinoza, "Affect is a body's 'capacity to affect and be affected', where a body can in principle be anything" (9). As Anderson explains, "There are two important features of this general definition" (9): firstly, "affect is two-sided. It consists of bodily capacities to affect and to be affected that emerge and develop in concert"; and secondly, "affect pertains to capacities rather than existing properties of the body. Affects are about what a body may be able to do in any given situation, in addition to what it currently is doing and has done. Because capacities are dependent on other bodies, they can never be exhaustively specified in advance" (9). This emphasis on unknown, unpredictable capacities for engagement and response is at odds with the drive for predictability, manageability, and the elimination of risk central to MaddAddam's biocapitalist system premised on modifiable biomedia.

As Patricia Clough insists, the turn to affect points "to a dynamism immanent to bodily matter and matter generally – matter's capacity for self-organization in being informational" (1). This dynamism and unpredictability, which many critics link to Baruch Spinoza's famous declaration, 'No one has yet determined what the body can do' (qtd. in Gregg and Seigworth 3), are central to theorizing affect. The emphasis on indeterminacy is at odds with the goals of bioscience and biocapitalism, which seek to quantify – in effect, to "determine" – what bodies are and what they can do. The assumption that we can

determine what a body *is*, that we can quantify "life itself," has serious ramifications for the open-endedness of affects, the body's unpredictable capacity for affecting and being affected others. In Atwood's cautionary tales, the obsessive focus on the body's informatic materiality stifles the affective, relational, and ethical dimensions of life, diminishing the body's capacities for care. Ironically, the very bioscience that accentuates the transformative potential of bodily matter, its malleability via genetic engineering, cloning, etc., impedes the "open-ended in-between-ness" of bodily affects (Gregg and Seigworth 3). The preoccupation with the body's instrumentality, with animals as biomedia and the productive potential of the genetic "encounter" (the interaction of DNA) abbreviates, even eliminates the formative affective encounter. Biotechnology presumes to know what the body is (at the level of DNA) and, therefore, ignores or dismisses the central indeterminancy of bodily identity composed through "the forces of encounter" (Gregg and Seigworth 3). In other words, biotechnology focuses exclusively on the technological body, to the detriment of affective life, relational identity, care.

Like affect studies, ethics of care philosophy draws attention to embodied interactions and their unpredictable emotional effects. According to the philosophies of obligation and care developed by feminist philosophers like Eva Kittay, Kelly Oliver, and Virginia Held, affective response, is at the crux of development and subjectivity. These philosophers highlight vulnerability and interdependence as fundamental, and regard persons as always "embedded and encumbered" (Held 15) within and by social environments and relations. Our capacity to affect and be affected produces an ethical imperative, according to feminist philosophers who prioritize care as "*the* basic moral value" (emphasis added,

Held 71). Our *ability* to respond produces an *obligation* to respond, according to Oliver, who theorizes subjectivity as a combination of response-ability and responsibility:

> The possibility of any perception or sensation associated with subjectivity is the result of our *responsivity* to the energy in our environment. Because our dependence on the energy in our environment brings with it ethical obligations, insofar as we *are* by virtue of our environment and by virtue of relationships with other people, we have ethical requirements rooted in the very possibility of subjectivity itself. We are obligated to respond to our environment and other people in ways that open up rather than close off the possibility of response. This obligation is an obligation to life itself. (15)

Denying the "response-ability" side of the equation – the body's ability to affect and be affected – is, in effect, a denial of ethical relations. So it is no surprise in *Oryx and Crake* that Jimmy fails to identify his own tears as such after the disaster, disassociating himself from this affective residue. Raised in a corporate compound whose residents are paid to manipulate biomedia in pursuit of human invulnerability, Jimmy's early experiences of care are meagre. Jimmy's sole satisfying childhood experience of (seemingly) mutually beneficial care involves a nonhuman animal, a hybrid creature who, like Jimmy, is the product of recreational creation. "The rakunks had begun as an after-hours hobby"; they are scraps of biomedia constructed for entertainment rather than profit (51). The two have a certain kinship in their marginalized status as sensual, comfort-seeking animals who provide one another with reassuring haptic contact. The rakunk sleeps at the bottom of Jimmy's bed because "she like[s] it there" where she can "[lick] his feet to get the salt off" (58). However, this mutually-comforting connection is short lived since "Killer," as

Jimmy names his hybrid friend, is liberat[ed]" (61) by his mother, whose depression and moral outrage towards the biotech corporation drive her to flee the compound with "Killer", effecting a double abandonment for Jimmy who loses both his mother and "best friend" (60) in one stroke. These absent figures of care and attachment -- his depressive, remote mother and his hybrid creature friend -- haunt him throughout the trilogy. However measly the care they offered, it was rare enough to be precious. Without them Jimmy becomes increasingly suspicious of and alienated from affects, both his own and others'.

In *Oryx and Crake*, the image of Jimmy's baffled, wet face is followed by a series of chapters that depict his earliest boyhood memories as the son of biotechnologists in a corporate compound. His first memory is of a bonfire, which, readers soon learn, is fuelled by the bodies of infected and at risk animals, victims of biological corporate sabotage. Jimmy's father is a geographer and architect on a biotech project transforming pigs into xenotransplantation technology: living incubators that house multiple human organs.[5] The organ-growing entities, nicknamed pigoons – pigs inflated like balloons to make room for extra organs – are described in economic terms, in language connoting investment, profit and waste. Their contents, and consequently, their beings, are valuable commodities that, just like any other corporate commodity, must be protected from theft and sabotage (26-7). However, contrary to Jimmy's father's view, pigoons are *not* like any other corporate commodity, they are uncanny convergences of biology and technology, human and animal, market object and living thing, an uncanny hybridity that produces uneasiness in young Jimmy. The pigoons are "bigger and fatter than ordinary pigs," reflects Jimmy, "to leave room for all of the extra organs. They were kept in special

buildings, heavily secured: the kidnapping of a pigoon and its finely honed genetic material by a rival outfit would have been a disaster" (25-26). He finds the adults "slightly frightening, with their running noses and tiny, white-lashed pink eyes. They glanced up at him as if they saw him, really saw him, and might have plans for him later" (26). The unsettling convergence of bio-informatics, of "finely-honed genetic material," and the living, breathing animal subject who fixes Jimmy in its enigmatic stare, clings to Jimmy; both Jimmy and the pigoon are vulnerable, dependent, affective subjects whose survival, contentment, and pleasure depend on the whims of unreliable adults. In other words, there is a moment of reluctant recognition in the scene of the Jimmy/pigoon gaze, a trespassing of the artificial lines demarcating humans from animals (26), boundaries that deny the continuity of human/animal vulnerability and affectivity.

The confusion and discomfit Jimmy experiences under the pigoon's gaze exposes, momentarily, the artificiality of the structures and divisions that organize the corporate Compound world: "He was confused about who should be allowed to eat what. He didn't want to eat a pigoon, because he thought of the big ones as creatures much like himself. Neither he nor they had a lot of say in what was going on" (29). Jimmy's anxious insights echo Heffernan's analysis of human reactions to actual biotechnological manipulations. Heffernan describes the 1998 production of a cow/human embryo, which she argues,

> is disturbing because it taps into a deep anxiety about capitalism's production of nature since modernity—the cow is a perfect example of 'nature' as a product to be used, controlled, and sold. Fleshy, docile, domesticated, enslaved, injected with growth hormones and antibiotics, the cow is "us," and it is only through a strict policing of the imagined boundaries between nature and humanity that we can

> return to our abstract dreams of the perfection of humanity in the laboratory and, more aptly, away from our own troubling creation – not the cow/human embryo – but nature as product and us, increasingly even if resistantly, as that nature. (129)

In Atwood's trilogy, the pigoons eventually escape the confines of the lab, ceasing to be fleshy incubators for human organs to be harvested and used. Pigoons beyond the lab dissolve the "imagined boundaries between nature and humanity" Heffernan describes, reminding characters, and, by implication, readers, of their and our "nature," our animal embodiment, "wildness," and unpredictability. Outside of the lab, pigoons are no longer bioscientific objects, their meaning determined by their medical usefulness, but rather inscrutable living, feeling things. I use "thing" here with purpose, not to emphasize their object status, but to undermine it. Following Brown, I understand "thingification" as a process that removes objects from circuits of use, producing a new awareness of their aesthetics, materiality, and sensuality (Brown, "Secret Life" 2-3). "Thingness" is "what is excessive in objects, as what exceeds their mere materialization as objects or their mere utilization as objects—their force as a sensuous presence or as a metaphysical presence" (Brown, "Thing" 5). According to Brown, we don't actually *see* objects, "we look *through* objects (to see what they disclose about history, society, nature, or culture—above all, what they disclose about *us*), . . . We look through objects because there are codes by which our interpretive attention makes them meaningful, because there is a discourse of objectivity that allows us to use them as facts" ("Thing" 4). Hence pigoons are a kind of transparent container housing valuable organs, parts of *us*, which makes them both incredibly valuable, and entirely expendable. They are designed to be discarded once they have served their instrumental purpose. In other words, they are trash: "the commodity

and trash are as closely linked as production and consumption. It may even be that we can think of commodities as deferred trash" (Stallabrass 407). Looking *at* pigoons, rather than *through* them is transgressive, challenging their status as commodities, as "deferred trash", since "trash as such tends to be left unregarded, edited out of vision (and generally of photographs), ignored except as a practical problem, and deplored from an 'aesthetic' point of view, which repudiates it so as not to see it" (Stallabrass 406). The pigoon that makes eye contact, or runs free amid the post-disaster wasteland, no longer functions as a living incubator, a commodified, transparent object. Unlike an object, "A *thing*," explains Brown, "can hardly function as a window. We begin to confront the thingness of objects when they stop working for us: . . . when their flow within the circuits of production and distribution, consumption and exhibition, has been arrested, however momentarily" (Brown, "Thing" 4). In MaddAddam, pigoons become their own "things," mysterious and dangerous. This perspective tweaks Narkunas's astute attention to the processes of "thingification" in *Oryx and Crake* as a dangerous over-attention to the utilitarian function of organic matter. Following Brown, there is an important distinction between what Narkunas terms the "instrumentalization of life" and the processes of "thingification" I outline above. Though Brown attends exclusively to inorganic, non-living things, I believe his distinction helps illuminate the radical processes of reversion and destructive liberation produced by the central disaster in Atwood's trilogy. In these novels, corporations have sought to eliminate risk through extreme regulation and apartheid-like zoning. They have attempted to eliminate the vulnerability of the embodied and embedded subject by treating living matter as mechanistic material, treating organs as replacement parts, organisms as fungible instruments, data. However, these policies

effectively deny the networked, systemic, affective quality of all life forms, eliminating opportunities for connection and care. As living creatures are transformed into instrumental objects, the "sensuous, aesthetic, semiotic," and, I would add, affective, dimensions of living "things" is repressed (Brown, "Secret Life" 3), a repressed capacity that returns in the post-disaster chaos.

Affective Gardeners and Other Critters

Unlike the powerful biotech corporations, the environmentalist religious cult, the God's Gardeners, seek to work with vulnerability, to acknowledge and embrace interdependency. When readers meet the Gardeners in *The Year of the Flood*, the group's founder, "Adam One," outlines his own evolution from anthropocentric man of science, to posthumanist prophet: "My dear Friends," he preaches,

> My name is Adam One. . . . Like you, I thought Man was the measure of all things . . . In fact, dear Friends, I thought measurement was the measure of all things! Yes – I was a scientist. I studied epidemics, I counted diseased and dying animals, and people too, as if they were so many pebbles. I thought that only numbers could give a true description. But then – . . . I saw a great Light. I heard a great Voice. . . . Spare your fellow Creatures!" (40)

Throughout *The Year of the Flood*, Adam One's sermons warn against the pride of human exceptionalism, stressing the human animal as one "critter" among many, to borrow Harraway's term for interdependent living creatures. As Marianne DeKoven and Michael Lundblad explain, "critter," is a "crucial concept" for Haraway, "which refers to all living beings in a deliberately colloquial, characteristically comic way, defying expert,

standardized, affectless official jargons and all terminologies of singularity and exclusivity. She sees critters as existing, surviving, developing, changing, and dying in mutual interaction with other, co-dependent living beings." (8). The colloquial, comic term is an apt one for Atwood's posthumanist perspective, echoing her wry humour and satirical disdain for those, like Jimmy's father and his corporate employers, who assume humanistic taxonomies and anthropocentric hierarchies, denying co-dependence and vulnerability. As Haraway explains, echoing ethics of care philosophers, but in a posthumanist register, "Through their reaching into each other, through their 'prehensions' or graspings, beings constitute each other and themselves. Beings do not preexist their relatings. 'Prehensions' have consequences. The world is a knot in motion . . . There are no pre-constituted subjects and objects, and no single sources, unitary actors, or final ends" (*Companion* 6). "Prehension" is a particularly useful concept for the posthumanist return of affect and care that is at the heart of my analysis of Atwood's trilogy, stressing as it does, perception and sensation over comprehension and cognition. Haraway's analysis follows Alfred North Whitehead's description of "the concrete" as "a concrescence of prehensions" (7), a characterization of affected presence that nicely sums up the central tenets of affect studies. Atwood conjures a society in which beings are not only assumed to pre-exist their relatings, but these relatings have been completely subsumed by a biocapitalist economy in which "life itself" is engineered and commodified. To transform life into instrumental matter is to risk alienating prehension, an apprehension (though not comprehension) of the unknowable thingness of life. In other words, ironically**,** the same system that violates life by over-attending to its instrumental

materiality and overlooking intangible, often incomprehensible affects and relations, actually leads to a "re-thingification" of objects.

In *The Year of the Flood* Adam takes exception to "the Specist view that we Humans are smarter than Fish," concocting a theology that recognizes the humble foolishness of human animals, embracing absurdity "and our own silliness" (196). However, this silliness belies the credibility of his perspective as an ethical alternative to destructive biocapitalism. Indeed, it is possible to read the God's Gardeners and the Corporations as two sides of the same coin, ideological extremes that parody the slavish adherence to a restrictive, potentially alienating worldview. It is hard not to regard the God's Gardeners as ridiculous with their pedantic restrictions and doggerel hymnbook, as, in Gardener recruit Toby's words, "sweet but delusional eccentrics" (103). Adam One is well aware of the group's ridiculousness, explaining that the Corporations "view us as twisted fanatics who combine food extremism with bad fashion sense and a puritanical attitude toward shopping" (48), an expedient view that inspires condescension, rather than censure. The Gardeners' aversion to shopping coincides with a refusal to discard objects, a radical rejection of commercialism and disposability. Indeed, for the Gardeners, "There [is] no such thing as garbage, trash, or dirt, only matter that hadn't been put to a proper use" (69). Their dogma is a direct affront to capitalism generally since the refusal to regard things as rubbish is a refusal to participate in the processes of commodification that determine value and worth. The Gardeners reanimate abandoned objects, drawing attention to the "West's profligacy in consumption . . . the extraordinary engines of waste that are our economies" (Stallabrass 419). And yet, the Gardeners' zealotry is distinctly silly. Toby, a focalizer in both *The Year of the Flood* and *MaddAddam*, is a reluctant

convert, wary of these "friendly though bizarre people, with their wacky religion" (*Flood* 44). It is tempting to dismiss the sanctimonious sermonizing of these eccentric environmentalists, to share the corporate perspective on these "twisted fanatics." Certainly the parodic extremism of their views – they "relocate," rather than kill the slugs that destroy their gardens; view the consumption of meat as despicable; wear sack-like garments; are wary of writing and computers – seems designed for comic effect. And yet, the Gardener theology turns out to be shrewd and practical (qualities particularly prized in Atwood's oeuvre), emphasizing survival skills that become essential in the post-disaster world. The Gardeners' rejection of capitalist individualism and biomedical commercialism in favour of an eco-philosophy of interdependence and care turns out, finally, to be a savvy choice. A worldview based on gleaning, collaboration and care may be easily mocked, but once biocapitalism has self-destructed, the importance of vulnerability and interdependence becomes impossible to deny. As always, Atwood's wry narrative style exposes the delusions and blind spots of *all* the perspectives it portrays, pre-empting easy scapegoating or hero worship. Nonetheless, for all their "wacky" tenets and bad poetry, the Gardener philosophy may provide the only hope for (sustainable) existence at the trilogy's conclusion. In the end, most of the trilogy's major characters have died or disappeared: Jimmy, Crake, Oryx, Toby, Zeb, Adam One. However, the few humans that remain are joined by a plethora of animal species that evoke the possibility of a survival based on scavenging, interdependency, and responsibility. The novels cannot guarantee *human* survival, but they imply that some form of hybrid animal, one that eschews familiar taxonomies, will carry on. These living things might survive and evolve,

sounding the death knell of the anthropocentric exceptionalism that was the foundation of the pre-disaster, biocapitalist world.

MaddAddam Morality: Summing Up

Though by no means a moralistic writer, Atwood's work has always been concerned with the moral dimensions of human behaviour and relationships. From her early depictions of the destructive rigidity of gender and sexuality in late twentieth-century Western culture (*The Edible Woman*, *Surfacing*, *The Robber Bride*, *Lady Oracle*), to her engagement with legacies of colonialism in *Bodily Harm*, to her more recent speculations on the consequences of anthropocentric neoliberalism and biotechnology, Atwood's fiction demonstrates her preoccupation with the ethical dimensions and consequences of everyday life. Atwood herself has described "fiction writing" as "the guardian of the moral and ethical sense of the community," a form "through which we can see ourselves and the ways in which we behave towards each other, through which we can see others and judge ourselves" (*Second Words* 346). Many critics have drawn attention to the ethical dimensions of Atwood's works that grapple with conflicts between witnessing and participation (Staines; Hollis), "engagement and escape" (McWilliams 130), art and life (Grace; York), and silence and storytelling (Merivale; Stein). My own investigation treats her fictionalization of contemporary biotechnological innovation and neoliberal politics as a valuable index of how this interaction of politics and science could, and perhaps already does impact the meaning and value of life forms, human or otherwise.

The Waterless Flood achieves, in a terrifying way, the kind of radical "decentering of the human in relation to either evolutionary, ecological, or technological coordinates" that Wolfe describes as part of the posthumanist project. As such, Atwood's novels serve as a kind of satirical cautionary tale about the dangers of extreme anthropocentrism, the transhumanist fantasy of human perfectibility that disassociates the human animal from its social, ethical and ecological coordinates. In other words, Atwood's novels evoke a posthumanist perspective in their dramatization of the consequences of rampant anthropocentrism that regards organic matter, the world's flora and fauna, even the human body's cellular data, as marketable, utilitarian objects to be used in the service of commodifying human perfectibility. In the MaddAddam universe, the disavowal of human animals as socially and ecologically embedded and embodied subjects produces a dystopic chaos, genocide and ecological devastation. The corporatized biotech economy that structures Atwood's dystopic future privileges the internal systems, structures, and networks that constitute the human organism, undermining the human animal's affective and ethical ontology. The exclusive focus on internal networks and systems ignores external networks and systems, dependencies and responsibilities, diminishes opportunities, perhaps even the capacity for, the processes of care, the "address-ability" and "response-ability" that Oliver identifies as the "roots of subjectivity" (7). In MaddAddam's harrowing vision of the future, biotechnology, global capitalism, and corporate culture have all but eliminated possibilities for an ethic of care. And yet, in the world after the Waterless Flood, the planet's remaining human survivors adjust to a new subsistence economy based on scavenging, and eventually, collaborate, even procreate with the Crakers. Atwood's trilogy concludes with this glimmer of possible renewal.

Perhaps despite the rampant and destructive transhumanist endeavour, a new critters can be reintegrated into ecological, affective, and ethical networks and systems that can sustain and be sustained by them. Atwood's final vision conjures a future of what Haraway terms "significant otherness": "vulnerable, on-the-ground work that cobbles together non-harmonious agencies and ways of living that are accountable both to their disparate inherited histories and to their barely possible but absolutely necessary joint futures" (*Companion Species* 7). Pigoons, Crakers, humans and the hybrid species that will populate the future (if they haven't been born already), share an interdependent vulnerability that does not facilitate a simplistic unification, but demands an acknowledgment of affective agencies, however "non-harmonious," for future survival.

Notes

[1] For a fuller discussion of her controversial insistence on the term "speculative fiction," see Atwood's collection of essays, *In Other Worlds: SF and the Human Imagination* (2011).

[2] For more on biocapitalism and bioeconomics, see, Melinda Cooper; Nikolas Rose; Eugene Thacker, *The Global Genome*; Michael Peters and Priya Venkatesan.

[3] See also Badmington; Gane; Halberstam and Livingstone; Mazis; Nayar; Pepperell.

[4] The very term "life itself" is contestable since it assumes life to be identifiable, quantifiable. For example, Eugene Thacker adopts scare quotes to indicate "the slipperiness of any claim to have discovered an essence – mechanistic or vitalist—of biological life" (*The Global Genome* 61).

[5] The creation of pigoons as living incubators recalls Atwood's earlier foray into speculative fiction, *The Handmaid's Tale*, which imagines human beings treated as reproductive technology. Female members of the political underclass are forced to function as surrogates for the political elite. The novel is narrated by one such "handmaid," Offred, who remarks on her status as a "two-legged womb" (171), recognizing that her reproductive corporeality obliterates her subject status in the eyes of the regime.

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