Animal Studies, Indigenous Spacecraft

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Abstract

With the future of all species on Earth under threat within the Capitalocene, what can Animal Studies learn about struggles for futurity from Indigenous authors and artists? This article proposes that the genre of Indigenous Futurism (IF) can guide Animal Studies to decolonize the art and act of imagining multispecies futures, in part by reviving arts of time-space travel practiced by Indigenous people in relation with both animals and aliens. Contrasting Indigenous Futurisms with the dangerously literal technologies of space and time-travel represented by actors as diverse as the poet Christian Bök and NASA can be instructive for Animal Studies.

The multifarious spacecraft of Indigenous Futurisms hover ambivalently over the field of Animal Studies. Are they waiting to – or even wanting to – dock? Do they promise to beam endangered twenty-first century earthlings up into the enlarged domain of "all our interstellar relations," as Navajo scholar Lou Cornum describes the cosmic reach of interspecies kinship in her reflections on "space NDNs" (space Indians)? Or, do the spacecraft of Indigenous Futurisms guard special wormholes and fugitive passages out of the colonial dead-ends, carceral orders, and assimilationist logics that have specifically constrained Indigenous people on planet Earth, a possibility that futurists like Kwakwaka'wakw artist Sonny Assu provocatively suggest?

In what follows, I ask a host of questions about the space*craft* (rather than space*ships*) which hover over Animal Studies in order to draw attention to an art that Indigenous authors and artists practice in all manner of old and new media, namely, the art of imagining both themselves as well as their animal and alien kin as time- and space-travelers. For instance, in his *Interventions on the Imaginary*, Assu digitally superimposes images of vibrant spaceships (in the form of 3-D ovoids, s-shapes, and u-shapes, all significant shapes within the history of Pacific Northwest Indigenous art) upon paintings of Native villages by canonical Canadian artists like Emily Carr and A.Y. Jackson. While the titles that Assu gives his interventions humorously parody *Star Trek* episodes – one piece is titled "Skeena, Beam Me Up!" and another, "They're Coming! Quick! I have a better hiding place for you. Dorvan V, you'll love it" (See Figure 1) – his work, like that of other Indigenous artists and writers who occupy science and speculative fiction genres that were never designed to host them, generates unsettling effects. It does so by associating Indigeneity with futuristic modes of transport like quantum teleportation, with outer space as a potentially hospitable alternative to settler-invader spaces, and with alien as well as animal relations.

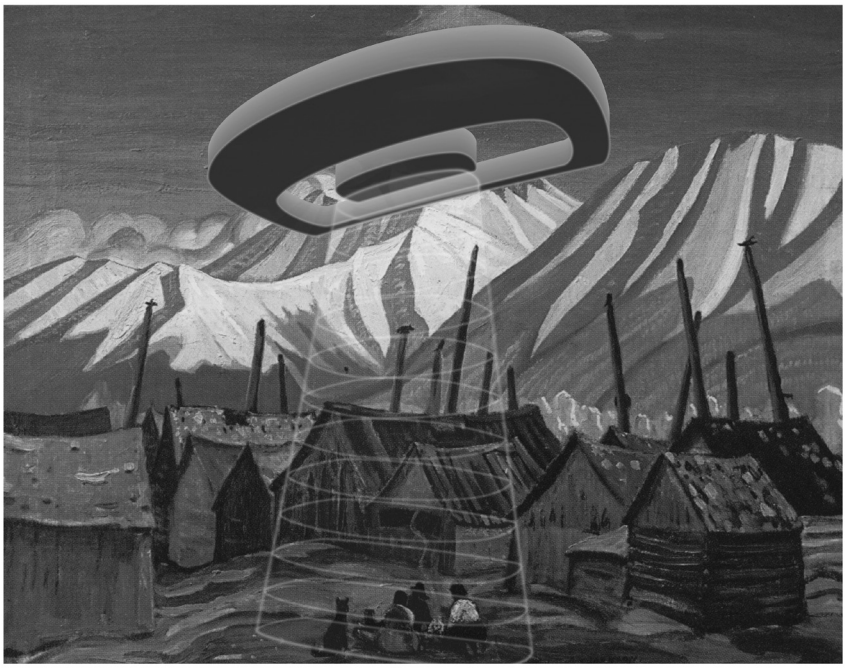

Figure 1. Sonny Assu, "They're Coming! Quick! I have a better hiding place for you. Dorvan V, you'll love it."

The Indigenous art of imagining futurity, which is most recently associated with the genre of Indigenous Futurism (IF) – a term first coined in 2012 by Grace Dillon in her groundbreaking *Walking the Clouds: An Anthology of Indigenous Science Fiction* – carries keen lessons for Animal Studies, particularly in an era in which all multispecies futures have been rendered uncertain by the ecological and social depredations of several centuries of colonial capitalism. Following the lead of scholars who suggest calling our current era the Capitalocence instead of the Anthropocene, I wrestle, along with many others in Animal Studies, with the threats that on-going colonial capitalism poses to the futurity of all

species.[1] When powerful state and private actors twist this general crisis of futurity into an opportunity to accelerate colonial and capitalist enterprises in outer space, rationalizing that future life can no longer be assured on Earth, Animal Studies needs to search high and low for allies in its struggles for just worlds on this planet and beyond.

Striving for shared multispecies worlds by putting human-animal relations at the centre of historical, philosophical, political, and aesthetic inquiry is a crucial but arguably insufficient aim of Animal Studies if it fails to be accompanied by openness to the surprising shapes of Indigenous and decolonial thought. Without self-examining for the settler habits of thought that may persist despite – or worse, under cover of – anthropocentric critique, Animal Studies risks repeating colonial erasures of Indigenous presence from actual and imagined worlds, in this case, from all the possible times and spaces of multispecies coexistence. For this reason, I propose that the field more closely follow Indigenous spacecraft as they intercept exclusive flights of "settler futurity," that is, dominant exercises of the imagination which effectively claim the future for ongoing settler colonialism (Tuck and Yang 3). By telling stories about Indigenous and interspecies futures in genres they have had to imaginatively seize and repurpose, IF artists and writers pilot a decolonial craft that can guide Animal Studies at this critical juncture.

Just as Indigenous Futurisms occupy science and speculative fiction genres that have predominantly brooded upon dystopic threats to Earth's dominant white minority, so Animal Studies similarly occupies humanistic inquiry by ethically and aesthetically replacing its ostensibly "proper" subjects of study with human-animal relations. In other words, the two share a spirit of subversive occupation that bodes well for decolonizing and "humanimalizing" as solidary efforts. Yet ironically, it may be by virtue of some of its fiercest critical principles that Animal Studies can fail to even notice Indigenous spacecraft, not to mention tune into their transmissions. After all, the field has been predominantly shaped

[1] Jason Moore, Donna Haraway and Elizabeth Povinelli, among others, trouble the term "Anthropocene." Povinelli suggests that "when the abstraction of the Human is cast as the protagonist of the Anthropocene," what can be forgotten is that "humans did not create this problem. Rather, a specific mode of human society did, and even there, specific classes and races and regions of humans" (12).

by white, Western thinkers who, in contesting the transcendence of Anthropos and attempting to do justice to creaturely immanence on a multispecies Earth, have often conscientiously avoided looking skywards, in a direction associated with the "god's eye view" of Western Man (Haraway, "Situated" 581). When Animal Studies has searched out Indigenous examples of human-animal coexistence, it has tended to look earthward toward the *terrestrial* knowledges, species kinships, and "chthonic ones" that long precede its own formulations of interspecies relationality or entanglement (Haraway, *Staying* 2). Rarely has Animal Studies looked to Indigenous stories of alien ancestry, time-space travel, and extraterrestrial relations for direction, possibly because this direction is so associated with Western Man as a "sky-gazing Homo" (*Staying* 2).

Yet what if Western Man's monopoly over the heavens and outer space is countered by an Indigenous pluriverse peopled with Sky Women, Star Nations, trickster constellations, virtual animals, and alien ancestors? What if outer space is home to an Indigenous metaphysic that long predates imaginative and actual voyages of discovery by imperial powers? One of the unsettling effects Indigenous Futurisms can have on Animal Studies springs from the challenge they pose to settler assumptions about the place and time of Indigeneity, and by extension, about the *topoi* and temporalities of the inextricably human-animal, terrestrial-extraterrestrial, earthly-interstellar, physical-metaphysical relations composing the multispecies worlds in which Indigeneity moves. Rather than appropriating Indigenous knowledges into the virtuous service of Animal Studies' earthly turn, decolonizing Animal Studies may require being taken up by Indigenous spacecraft that alter our critical commonplaces around multispecies thinking. When Dakota theorist of technoscience Kim TallBear notes that Western interspecies thinking is just beginning to "get on board" an "American Indian metaphysic" (a phrase she borrows from Vine Deloria, Jr.), she invites Animal Studies to approach Indigenous spacecraft in the spirit of a newcomer and guest.

In "Why Interspecies Thinking Needs Indigenous Standpoints," TallBear describes the kind of metaphysic she has in mind. While "interspecies communities" is a resonant term for TallBear, she cautions that "it does not capture all of the beings I see myself as in relation

with" (n. pag.). TallBear notes that this is because, for many Indigenous peoples, "our nonhuman others may not be understood in even critical Western frameworks as living." Elizabeth Povinelli similarly draws attention to the way Western liberal settler societies biopolitically "sort" humans into two camps, those who differentiate between Life and Nonlife and those who do not (13). The latter camp is usually reserved for Indigenous people whose animistic beliefs in the "Nonlife" of rock formations, thunder and lightning, glaciers, fog, et cetera are delegitimized within settler colonial cultures and systems of governance that regulate the distinction between Life and Nonlife. TallBear effectively suggests that this kind of distinction between Life and Nonlife also operates within Animal Studies, a field with an obvious biocentric bias, as it equates Life with "things that are more or less organismically defined" (TallBear). This settler habit of thinking is one that many in Animal Studies may find difficult to relinquish given that *animal life* has broadly named the ethical commitment tying together a transdisciplinary field teeming with differences.

Paradoxically, again, for Animal Studies to ally with Indigenous know-how in joint struggles for futurity, it may need to follow human-animal relations beyond the Life and Nonlife distinction that has functioned to discredit Indigenous epistemologies and ontologies within Western liberal settler societies. When Indigenous people claim to have descended from aliens or to have had contact with extraterrestrials, Western liberal reason acts supremely justified in dismissing or disproving such seemingly fantastic claims, most recently with the aid of genetic science.[2] For Animal Studies to break with settler habits of determining which parts of Indigenous knowledges are reasonable versus which are fantastic, the field may itself need to be alienated from certain strains of Western liberal common sense. Animal Studies has been willing to grant kinship relations and treaties with animal nations to Indigenous people, but what about Indigenous claims to intercourse with alien nations?

[2] For instance, in a 2017 article in *The Guardian*, Jennifer Raff writes: "All genetics research to date has affirmed the shared ancestry of all ancient and contemporary indigenous people of the Americas, and refuted stories about the presence of 'lost tribes', ancient Europeans, and (I can't believe that I actually have to say this) ancient aliens."

Alienation signifies in multiple ways, negatively and positively, for Indigenous people who have been dislocated from their ancestral territories, subsistence lifeways, and languages. As German/Cherokee writer Thomas King shows in his short story *Coyote and the Enemy Aliens*, Indigenous people have also been deemed enemy aliens by the Canadian state through the rhetorical trick of conflating the continent's original inhabitants with illegal or unwanted immigrants. Yet many Indigenous cultures protect stories of positive relations with alien beings and alien nations. Just as colonial discourses have relied upon speciesist logics to animalize Indigenous people, so the power to alienize Indigenous people requires making the alien into a violently othered ontology and othering device. The signs of the animal and the alien have in supplementary ways been deployed to dehumanize Indigenous people and diminish their capacious terrestrial and extraterrestrial relations.

Not only have Animal Studies practitioners strenuously deconstructed human-animal hierarchies, some have also, following the lead of scholars like Glenn Elder, Jennifer Wolch, and Jody Emel, further rejected "dehumanization as a basis for cultural critique, given its role in perpetuating racialization and violence toward both human and non–human animals" (88). Yet few challenges have been brought against critiques of *alienation,* though they similarly risk reinscribing "the alien" as a form of Life or Nonlife which can be justifiably eliminated. By intervening in well-worn cultural tropes of the alien that have been used against various species of earthlings, IF artists like Sonny Assu show Animal Studies that decolonial thinking and living with animals is inextricable from thinking and living with aliens.

Nonetheless, there understandably remain concerns within Animal Studies that futuristic imaginations will serve as accomplices in the crime of irresponsible flight from a disposable planet. Haraway has prominently eschewed "abstract futurisms" in favour of a creative series of alternate "SF" figures that she believes better support struggles for livable futures on Earth (*Staying* 10). If searching for humanity's origins in the Garden of Eden is, in Haraway's view, "one half of the system of desire mediated by modern science and technology," searching for humanity's future in space is the other half (*Primate* 137). "Space is

not about man's *origins* on earth but about 'his' *future*," writes Haraway, "the two key allochronic times of salvation history" (137). Many futurisms are, for Haraway, overdetermined by a Western Man-story about "escape from the bounded globe into an anti-ecosystem called, simply, space" (137). Against the increased traction this story risks gaining in the era of the Capitalocene, she conjures instead the Chthulucene, a "timeplace for learning to stay with the trouble of living and dying on a damaged earth" (*Staying* 2).

Yet for Indigenous people who have been consistently defined by and confined to histories of colonial damage, the ability to imaginatively travel between alternate origins and futures is a crucial refusal of victim positions and act of survivance. Survivance, a concept elaborated by Anishinaabe theorist Gerald Vizenor, suggestively fuses "survival" and "endurance," or alternatively, "survival" and "resistance." Vizenor's contention that native survivance stories constitute "renunciations of dominance, tragedy and victimry" inspires many expressions of Indigenous Futurism (vii).[3]

Haraway is certainly aware that not all futuristic imaginations are the same. The futurist aesthetics of twentieth-century fascisms and neocolonial fantasies of Mars settlements excited by technocapitalists like Elon Musk are worlds apart from Indigenous and Afrofuturisms which, as Cornum notes, "explore spaces and times outside the control of colonial powers and white supremacy." More, just as the "Garden" was never the uninhabited space portrayed by Western imperial and colonial powers, these alternate futurisms teach us that neither is outer space a vacuum into which Western Man is free to project his fantasies of the future. Such an extension of the colonial doctrine of *terra nullius* is resisted by Indigenous people who counter their erasure from future worlds and outer space by asserting presence in ways which are no less real for being virtual, that is, realized through ancestral-advanced craft and modes of travel (as I will later elaborate).

Below, I explore what Animal Studies might learn from Indigenous spacecraft that refuse to cede the art of futurity to powerful prospectors

[3] Derrida conceptualizes "survivance" differently, as signifying a spectral existence which exceeds the binary oppositions of life and death. The term marks a potentially rich intersection between Animal Studies and Critical Indigenous Studies.

who not only intensify forces of human exceptionalism by continuing to render other species instrumental to human species survival, but aggressively override the human-animal-alien relations protected in Indigenous ontologies and epistemologies.

I. Indigenes and Animals Out of Place and Time

Many Indigenous Futurists explain their attraction to the dystopic genres of science and speculative fiction by way of a historical lesson: the apocalypse which many non-Indigenous people fear is truly nigh is one that Indigenous people have already experienced, having survived the genocidal and ecocidal assaults of colonialism. Indigenous people have already experienced the future shock. Their survivance of the past future challenges both despairing settler responses to the crisis of futurity on Earth *and* delirious ones that would accelerate enterprises of colonial capitalism off-Earth. For those who are curious in Animal Studies, however, an even more pointed history lesson is cached in IF, one which better explains why Indigenous occupations of futuristic imaginations can constitute singular acts of decolonial defiance.

Fredric Jameson has famously identified one of the key imaginative impasses of our times when he comments that "[s]omeone once said that it is easier to imagine the end of the world than the end of capitalism" (76). But the present is marked by another imaginative impasse, as well: it is easier to imagine animals in outer space than it is to imagine Indigenous people there. *This* failure of the imagination and its underlying conditions in the colonial biopolitics and chronopolitics of race and species is what IF most specifically defies. Assu and other Indigenous artists and writers implicate a particular turn-of-the-twentieth-century colonial discourse in this present-day failure of imagination: salvage ethnography. The discourse and practice of salvage ethnography in North America pivoted, after all, upon the trope of the vanishing Native, popularizing the belief that authentic Indigenous cultures were destined to disappear upon contact with technological modernity (through either extinction or assimilation). Under the seemingly sympathetic "rubric of

'rescue'," settler-colonial society justified its rush to collect, record, preserve, and museumize authentic remnants of Indigenous cultures before they vanished (Wakeham, *Taxidermic* 21).

Significantly, the trope of the vanishing Native in salvage discourses was paralleled by the trope of vanishing wildlife in turn-of-the-century discourses of nature conservation. As Pauline Wakeham notes, "the nature conservation movement and the mission of salvage ethnography rose to prominence during the early 1900s as articulated projects designed to preserve the so-called endangered species of wildlife and natives respectively" (*Taxidermic* 21). She observes that just as prominent American sportsmen "bemoaned the decline of animal populations […] white colonists similarly mourned what they believed was the pending extinction of Native peoples" (20). Famous sportsmen like President Theodore Roosevelt justified collecting and preserving trophy animals under a similar rubric of rescue. Haraway traces Roosevelt's ironic legacy of "saving" African animals for dioramic display in the American Museum of Natural History in "Teddy Bear Patriarchy: Taxidermy in the Garden of Eden, New York, 1908-1936."

The "articulated projects" of salvage ethnography and wildlife conservation not only surreptitiously continued colonial assaults on Indigenous people and animals under the logic of preserving them as museum pieces for future settlers; the interacting tropes of the vanishing Native and vanishing wildlife also functioned to temporally consign Indigenous people and wild animals to pastness, associating authentic Indigeneity and animality with nontechnological premodernity. Those animals and Indigenous people who defied expectations by continuing to exist within technological modernity were perceived as mere remainders of the originals who, as anthropologists like Franz Boas and photographers like Edward S. Curtis believed, only exist in the past. Real Indigenes and animals could not, by dominant accounts, survive within modern, technological contexts, and certainly not into the advanced technological future of space exploration and travel.

Assu thus contends that by imagining "Indians in space" he specifically counters the legacy of salvage ethnography. According to Assu's reading of pop cultural examples, the only instances in which Indige-

nous people are *not* deemed out of time and place in outer space is when they are discovered by white space travellers as primitive inhabitants of other planets, as they are in the *Star Trek* episode "The Paradise Syndrome." In the episode, writes Assu, "the USS *Enterprise* crew lands on a planet that is seemingly inhabited by Native Americans." They learn that "a group of well-meaning aliens—known as the Preservers—removed these Native Americans from Earth, transporting them […] to a planet halfway across the galaxy. There, these people were able to flourish, never having known the effects of colonization ("Indians"). In other words, aliens act like twentieth-century salvage ethnographers by preserving precontact Indigeneity on a planet that effectively constitutes a museum in outer space.

While many IF artists and writers explore solidarities among those earthlings that are typed as alien rather than native (Indigenous people, immigrants, invasive species, extraterrestrials), in Assu's digital interventions aliens often double as invader figures under the guise of "well-meaning" rescuers. This is also the case with some other IF artists and writers, as Lyndsay Nixon shows in her study of Inuit artworks in "Visual Cultures of Indigenous Futurism" (*GUTS*). In the work of Inuk artist Pudlo Pudlat, Nixon reads an incipient example of IF's ability to turn a futurist imaginary back upon settler colonial cultures by likening the State's forced removal of Inuit people and their animal kin in the 1950s to alien abductions. "In Pudlat's lithograph *Imposed Migration* (1986)," writes Nixon,

> he depicts an otherworldly flying object: a UFO, if you will. The UFO is cabled to a variety of northern animals: a walrus, a bear, and a buffalo, and is lifting them off the ground, transplanting them to new territories […] Here Pudlat is openly denouncing the colonial project of forced removal and migration inflicted on Inuit communities in the North. (See Figure 2)

For the Inuit, forcible removal of animals constituted an assault on interspecies relations driven by the devastating assumption that Indige-

nous and animal bodies could be relocated to remote destinations in the far North and instantly be "at home."

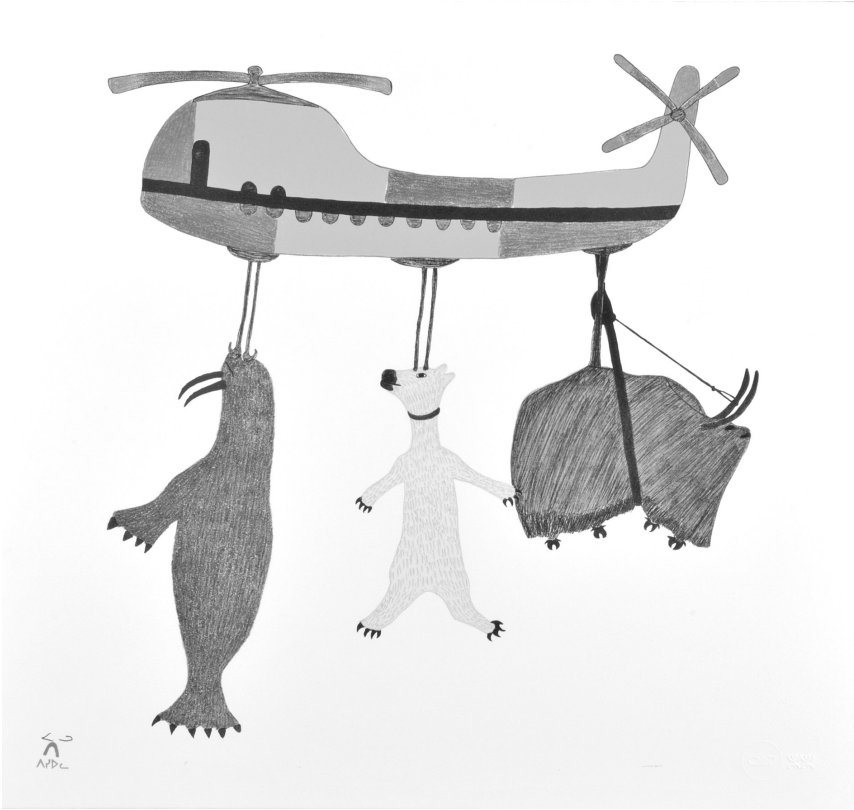

Figure 2. Pudlo Pudlat, *Imposed Migration* (lithograph, 1986). Reproduced with the permission of Dorset Fine Arts.

As Wakeham notes, the Inuit were treated by colonial authorities in Canada as "test subjects for establishing settlements in the remote High Arctic" ("Intersection" 84). In being moved and "deserted in an alien environment more than 1,500 kilometers" north of their homelands, they served as pawns in a sovereign game of Arctic colonization (85). The Inuit were effectively treated as a form of extremophile life capable of surviving in hostile environments.

Inuit Futurisms thus throw several lesser-known colonial histories into critical visibility. Consider the calculated slaughter of Inuit sled dogs by members of the Royal Canadian Mounted Police around the same time period. As Susan McHugh notes, this assault on the interspecies fabric of Inuit culture sought to settle "a historically nomadic people" by splitting apart their human-animal (specifically, musher-dog) means of travel, with the aim of fixing the Inuit in place (153). If salvage ethnography effects a temporal foreclosure of Indigenous and animal futures through inured tropes of vanishing, the history of Inuit and Indigenous removals and constraints on their nomadic movement persists in various spatial assumptions around the fixed place of Indigeneity and animality. In her reflections on IF, Cornum writes that "the need to defend our rights to live on our lands without harassment has created the political necessity of claiming our land-based political and cultural identities." Yet she also insists that "land-based does not have to mean landlocked," as it has come to mean within settler colonial societies. Indigenous futurisms seize what has been historically denied them when they imaginatively exercise the power to travel with their human and nonhuman kin in time and space.

It is also in the genres devoted to space travel and futurity that Indigenous people are often deemed to be out of place and time. As David Gaertner notes in "What's a Story Like You Doing in a Place Like This?: Cyberspace and Indigenous Futurism," Indigenous science fiction is perceived as an "oxymoron" by many readers; if they "balk at the thought of an Indigenous person in outer space," suggests Gaertner, it is because they have been culturally wired to believe that "indigeneity and techne" are antithetical terms (n. pag.). Cornum builds on Philip Deloria's insights in *Indians in Unexpected Places* (2004) when she similarly observes that "settlers can be upset and confused when the seemingly contrasting symbolic systems of Indigeneity and high-tech modernity are put in dialogue." Indigenous futurists can also get cast as belated arrivals who are finally catching up with the final frontiers first opened by white pioneers of speculative and science fiction. In the next section, I counter this misperception by suggesting that Indigenous people have been space travelers long before modern settler cultures, taking flight on

ancestral-advanced technological craft that many non-Indigenous people can have a hard time seeing.

So why is it easier to imaginatively project animals into outer space when many species have also been mourned as "vanishing," subjected to colonial experiments in relocation, and seen as epitomizing the terrestrial? I will return to this question in the final section.

II. Toward A Metaphysics of Indigenous and Animal Travel

Although many Indigenous futurists in Canada today work in filmic and digital media (Mohawk artist Skawennati's machinima series *TimeTraveller*™ or Cree/Métis filmmaker Danis Goulet's *The Hunt* are two examples), Tomson Highway's 1998 novel *Kiss of the Fur Queen* gives an earlier illustration of the way that Indigenous literature, particularly when telling creation stories, also mediates the interstellar relations and time-space travel that are at stake in the art of Indigenous futurity. Highway's novel offers several scenes of magical intercourse between the starry skies and a snow–covered earth. One scene describes the birth of Ooneemeetoo Okimasis, one of the Cree brothers who features in the novel. Ooneemeetoo first appears as a "spirit baby" hurtling down through Earth's orbit and landing in a deep snowbank (20). Scrambling out, the star baby begins racing across a wintry northern landscape towards a tent where a mother is about to give birth. *En route*,

> the child bumped into a rabbit, who took pity on him, for, by this time, the naked child was shivering. The rabbit slipped off his coat and wrapped it around the child's shivering, plump midsection. The as-yet-unborn infant made his gratitude clear to the rabbit […] the travelling baby and the now naked, shivering animal would be friends for life. (20)

Aided by the rabbit's sacrifice, the spirit baby dives into the mother's belly in the final throes of her labour, and Ooneemeetoo is physically

born. Spirit baby and fur-bearing animal act in concert to impregnate woman in this creational drama.

If Indigenous people have long engaged in time-space travel and had a presence in outer space – a claim that challenges the colonial doctrine of *terra nullius* which repeats itself in current-day space programs – then what kind of travel are we talking about, exactly, and by means of what type of craft? Cornum provides a clue when she states that "the creation story is a spaceship." According to Cornum, the Indigenous futurist inhabits "a long tradition of NDN interstellar exploration, using technologies such as creation stories and ceremony as her means of travel." Indigenous futurists imaginatively lift the colonial bans placed on Indigenous movement by reviving practices of metaphysical or virtual time-space travel. Like Highway, Leanne Betasamosake Simpson gives a glimpse into the kinds of metaphysical travel mediated by Indigenous storytelling when she relays "a Nishnaabeg sacred story of a little boy who is taken to the skyworld to learn from seven Elders and then returned to the earth to share his new knowledge with the Nishnaabeg" (12).

Settler responses to stories like these may involve a reflex literalism, in the form of "sure, but Indigenous people have never *actually* engaged in interstellar travel, and aren't *really* prior presences in outer space." The problem with settler common sense is the epistemological right it asserts to properly "sort" fact from fiction, literal from figurative truth, physical from metaphysical orders. As Kim TallBear suggests, decolonizing Animal Studies may involve learning from an Indigenous metaphysic that, among other things, holds that virtual travel through storytelling and ceremony is real, which is very different from claiming that it is *literal*. What arguably makes ancestral Indigenous technologies so advanced in comparison with modern space programs which today routinely launch rockets carrying "biological payloads" is precisely their resistance to equating the real with just one half of the literal-figurative, physical-metaphysical, or life-nonlife relations that compose complex ontologies.

I often bump up against the epistemological limits of settler understanding when I teach another work of Indigenous speculative fiction, Eden Robinson's short story "Terminal Avenue." Robinson's text is

pedagogically rich for both teaching and learning about IF's refusal of the trope of the vanishing Native, since the title alludes to the colonial discourse of salvage ethnography as well as to various pieces of "terminal" or assimilationist legislation governing Indigenous people in North America. Set in a dystopic, futurized Vancouver speckled with urban reserves and underground sex clubs, Robinson's story plays to settler assumptions that there is no future for certain people or animals. For instance, the protagonist of her story, Wil, states that he will likely "go the way of the dodo bird," conjuring the interlinked tropes of the vanishing Native and vanishing wildlife (98). At the story's terminus, when Wil is physically clubbed to the floor of a skytrain station by Peace Officers intent on "solving the Indian problem once and for all," readers may easily assume that his dodo bird prediction has been realized (101). Yet into the final scene of his beating, Robinson inserts a scene of metaphysical travel in which Wil "chooses" to return to his family's ancestral homeland in the Pacific Northwest (103). Many non-Indigenous students, culturally conditioned to assume that Indigeneity ends in tragedy rather than survivance, nostalgically grant that at the moment of his death Wil travels back in his "memories" to his family and homeland. The epistemological limits of settler reading appear right there, with the assumption that the travel described by Wil under the severe duress of a beating is but a flash of memory at the moment of dying. He is not *really* travelling back to his ancestral territory.

Yet Robinson's story is littered with clues that suggest the story is one of survivance rather than extinguishment, particularly when we learn to read for advanced–ancestral techniques of travel that are real without being literal. Earlier in the story, Robinson reveals that Wil works at an S/M club, "Terminal Avenue," and is lovers with its white owner. Through the ritualized acts of S/M they practice in their secret playroom, Wil arguably trains himself to use pain as a vehicle that moves or transports him to "that moment when reality shifts and he is free" (99). Robinson hints that far from simply being sexually used by the club, her character uses this underground space to keep banned Indigenous ceremonies alive (the future depicted by Robinson resembles the colonial past in which the Canadian and U.S. governments banned potlatch cer-

emonies of Pacific Northwest people, as well as Plains ceremonies like the sun dance, which uses pain as a means of spiritual transport). In other words, Wil revives "ceremony as a means of travel" (Cornum, n. pag.).

Just as Robinson's character turns a sex club into a space and technology of Indigenous ceremony, so Robinson herself turns a futuristic story into a spacecraft that advances a metaphysics of Indigenous travel as one mode of survivance. Moreover, when an Indigenous character like Wil travels, it is not as a discrete human subject; a complex relational assemblage of living and dead family members, dodo birds, ancestral mountains, playroom equipment, and black holes travel, too.

III. Beware Extremophiles

I end with a cautionary conclusion, one in which Indigenous spacecraft help to warn Animal Studies away from a growing fascination with ultra-resilient, extremophile life in the Capitalocene. The very different resilience, or rather, survivance, represented by Indigenous Futurisms is vulnerable in an era in which massive government and private ventures speculate in exclusive futures, often with the resources of the other species that are deployed on their space missions. The valorization of extremophiles, organisms capable of surviving within environments inhospitable to most life forms, is visible in the affection that space agencies like NASA and rival national space programs express for the creatures that survive their space flights, an affection arguably excited by sacrificial animals with a high chance of *not* surviving the extreme tests to which they are put in the lab of outer space. But an extremophile fetish is also visible in at least one recent work of bioart, one that responds to the crisis of futurity posed by the Capitalocene with a literalism that is hard to find in works of Indigenous Futurism. I am alluding to the biopoetics of Christian Bök, a Canadian poet who has encoded lines of lyric verse into the DNA of an "unkillable" bacterium (Bök, "Xenotext"). *The Xenotext* or "alien words" project, described by Bök as a writing collaboration with the extremophile *D. Radiodurans*, forges a mutating yet indestructible biological message to the future which is at odds with the

messages carried by Indigenous craft. Bök's work offers a cautionary reminder that "poetic" experiments in human-animal relationship do not necessarily pose objections to the expansionist dreams of colonial capitalism, but can get caught up their delirium.

The NASA History Office offers a snapshot of the countless animals deployed in national space programs, from the rhesus monkeys sent on U.S. rockets in the late 1940s to the watershed moment in 1998 in which a "biological payload record was set […] when over two thousand creatures joined the seven–member crew of the shuttle Columbia for a sixteen–day mission of intensive neurological testing" ("Animals," n. pag.). As NASA notes, Soviet space scientists favoured dogs, often stray, female mongrels such as Laika, the first animal to travel out of earth's orbit in 1957. Stray dogs can be read as quasi-extremophiles, selected for space travel because of their ability to survive unforgiving Russian winters on the street. NASA's snapshot also shows that the first cat was launched into space in 1963 by French scientists, and that everything from mice, insects, frog eggs, plant species of many kinds, and even "two common Cross spiders" have travelled to space, and if lucky, back again ("Animals," n. pag.). NASA casts animal instrumentalization as a heroic, quasi–military sacrifice by concluding its history with the following: "These animals performed a service to their respective countries that no human could or would have performed. They gave their lives and/or their service in the name of technological advancement, paving the way for humanity's many forays into space." Affectionate narratives spun around animals enlisted in national space programs not only manage perceptions around their disposability as test subjects, they also return me to the question I posed above: why is it easier to imagine animals than Indigenous people in outer space? The answer may have something to do with the fact that in these missions and the stories spun around them, animals remain tightly within the orbit of Western Man. Even in space they are kept in their place, strapped into obedient and sacrificial service to the same old Anthropos.

Animal space travel in this story of Western human progress is instrumental and literal to a degree that does not seem possible within the spacecraft of Indigenous metaphysics and relational ontologies.

More critically, the animal astronauts and biological payload on Western spaceships serve colonial space missions that Melinda Cooper implicates in the "psychotic delirium" of a neoliberal bioeconomy seeking to expand beyond Earth's limits (20). Cooper traces the co-emergence of neoliberalism and biotechnology around the time that NASA started sending animals into space, and she contends that they co-emerged in response to dire pronouncements, in the 1972 Club of Rome report *The Limits of Growth* and elsewhere, that capitalism was metastasizing beyond the ecological limits of a finite earth. According to Cooper, neoliberal political philosophies coupled with the commercialized life sciences to birth a bioeconomy that promises to escape the limitations that a finite earth places upon capitalist growth (20). As she argues, "the delirium of contemporary capitalism […] is intimately and essentially concerned with the limits of life on earth and the regeneration of living futures – beyond the limits" (20).

Tellingly, Cooper draws attention to a fascination with extremophiles in the capitalist delirium excited by NASA's space biology program, "right-wing futurologists," and others interested in capitalist growth without limit (20). After all, extremophiles spark imaginative and economic speculation in the possibility of future life beyond a ruined Earth. The fascination with extremophile life in Bök's *Xenotext* is a first clue that his biopoetics may be more aligned with forms of neoliberal speculation than with the resistant occupation of speculative and science fiction genres that Indigenous Futurisms represent. "I hope to engineer a microbe," Bök says, "so that it becomes not only an archive for storing a poem, but also a machine for writing a poem" ("Xenotext," n. pag). He chose the bacterium *D. Radiodurans* as the host both because it is "a benign life-form (with the lowest rating on the index of biohazards)" and because it can "withstand 1000 times the dosage of gamma rays needed to kill a human being instantly" ("Xenotext," n. pag). Bök remarks:

> [A]n organism with this kind of radioresistance can survive nuclear warfare – and biologists have even suggested that an ancestor of this organism might have evolved in outer space. By storing my poem in a durable archive, able to withstand

> even the most inhospitable environments […] I might create an artwork able to testify to our cultural presence upon the planet until the very hour when, at last, the sun itself explodes. ("Xenotext," n. pag)

Although Bök flirts with an idea that is seductive for Animal Studies, namely, that a poem may be a collaborative exchange between a human and another animal or life-form that is capable of responding, the above words suggest that *D. Radiodurans* serves a near-maniacal desire for a bullet-proof, biological time-capsule capable of guaranteeing that the "cultural presence" of Man will survive not only the destruction of Earth, but the solar system as well.

For Derrida, the madness of poetry springs from the fact that poets write from a position of "having been seen seen" by an animal, sensitive to the fact that they write under the gaze of another that precedes and exceeds the auto-affection of any being (381). Yet far from exemplifying the madness that Derrida attributes to poetry, Bök's work raises the danger that poetry may fall prey to delirious fantasies of total destruction, tasking other life-forms with keeping the human "lyric" interminably alive.

Thankfully, Indigenous Futurisms generate alternatives to the speculative futures hatched within the dominant cultural imaginaries fueled by NASA, Elon Musk, or Christian Bök. Rather than securing a future for more human exceptionalism, settler colonialism, and capital, Indigenous spacecraft strive to decolonize the future by imagining it as a hospitable time-place capable of fostering ongoing relations between Indigenous people, animals and aliens. If I am right in suggesting that one of the most important roles of Animal Studies in our current era is to contest how futurity becomes imaginable for a privileged few while becoming almost unimaginable for so many other earthlings, then a good place to begin is in the company of Indigenous spacecraft.

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Biography

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