

“Strange Kinship” and Ascidian Life: 13 Repetitions

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How else can one write but of those things which one doesn't know, or knows badly? It is precisely there that we imagine having something to say. We write only at the frontiers of our knowledge, at the border which separates our knowledge from our ignorance and transforms the one into the other.”

–Gilles Deleuze, Preface to the English Edition of *Difference and Repetition*

Part I: Animal Ethics and Affinity, at Sea

What might it mean to engage in ethical relations with other animals? What choreographies or constellations of affect, prohibition, connection, care, incorporation, facilitation, ignorance, conservation, curiosity, or other modes of interbeing might guide me, a distinctly human being, concerned with “living well” with other-than-human animals? Beginning with the whale, but moving to the sea squirt, in this article I suggest that while an animal ethics based on affinity might be an important starting point for cultivating such relations, it is unable to capture the complexity of the ways in which human and other animal bodies intersect. Instead, we might begin taking stock of these “strange kinships” by attending to the ways in which we *repeat one another, but differently*. But such inventories also require adequate ways of repeating these modes of interbeing in textual practice.

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Of Cetaceans and Sea Squirts

About half a century ago, French phenomenologist Maurice Merleau-Ponty argued in his *Nature* lectures that “the relation between the human and animality is not a hierarchical relation, but lateral” (2003: 268). While Merleau-Ponty was most interested in describing what it means to be a human body, his deeply attentive phenomenological work quickly revealed the boundaries of the human as profoundly porous. Turning his attention to research emerging in the biological, and particularly evolutionary sciences, coupled with his own phenomenological research, Merleau-Ponty posited that even though the human animal has its own modes of being and embodiment, our bodies also share modes of living and modes of embodiment with other animals. We echo through one another. He called this an “interanimality” or an “intercorporeity in the biosphere with all animality” (268). Although for Merleau-Ponty there is something “properly human” about human embodiment in the context of animality more generally, this is “an overcoming that does not abolish kinship” (268). There is a *difference*, then, but one that does not amount to human exceptionalism.²

While human exceptionalism was then, and still is, a norm in the Continental philosophical tradition, it is precisely this notion of affinity and recognition between human and other animals—that is, a *kinship*—that has taken hold and now dominates more recent attempts to formulate some sort of animal ethics. Key texts in contemporary critical animal studies (e.g., Tyler and Rossini’s *Animal Encounters* and Haraway’s *Companion Species Manifesto* and *When Species Meet*) stress similarities and contiguities between human and non-human animals, while popular science texts such as Neil Shubin’s *Your Inner Fish* and Carl Zimmer’s *At the Water’s Edge* inform and support such analyses.³ In order to break through the philosophically fortified wall surrounding the human, it seems pertinent to stress the many ways in which we might not be all that special after all.

² Toadvine (2007) makes a strong argument against reading Merleau-Ponty as advocating human exceptionalism.

³ See Great Ape Project; D’Amato and Chopra (1991) and Cavalieri (2011).

In animal activist circles—particularly those concerned with “animal rights”—the idea that (some) animals are “like us” (distant cousins, thrice removed or something like that) is also a common rhetorical strategy: both great apes and cetaceans have been the focus of campaigns to extend the “right to life” beyond human animals, precisely because of the attributes or qualities these animals share with us humans. Positing “kinship” becomes a cornerstone of species protection and conservation programs. Indeed, if we compare whale bodies to our own, we discover that both cetaceans and humans have lungs that breathe air and giant brains. Peel back the blubber of a cetacean’s fin and you will see something not unlike our own human hands: five fingers, a wrist, an elbow, a shoulder. Whales make mammalian babies, and music, just like us. They have red beating hearts, like ours, just as susceptible to being broken.⁴

This affinity, as Merleau-Ponty observed more generally in the terms of interanimality, is in part morphological, but more importantly, it has to do with the ways in which these bodies guide our intentionality in the world. Not only do we have body parts in common, but modes of being in common: brains problem-solve, limbs propel us forward, hearts love. The special place that cetaceans hold in the human imagination could be understood as based on kinship as recognition. We engage with such creatures as we align our own morphologies, our own emotions, our own requisites for pleasure or survival with those of the other animal. In these constellations of engagement, difference-in-degree trumps difference-in-kind, as we might imagine ourselves, too, returning to the warm womb of the oceans, terrestrial life is not all it was cracked up to be. We are responsible to more-than-human creatures because of an affinity, or “fellow-feeling,” that persists, despite social, economic, political—and even philosophical—incentives to deny it.

But this sort of affinity has limits, too. While “fellow feeling” suggests a sort of empathy, it might actually be little more than human exceptionalism in whales’ clothing, so to speak. As Patrick Moore, formerly of Canada’s Greenpeace, once said, “To get [the general public] to save the whales you have to get them to believe the

⁴ See Zimmer (1998), Shubin (2008), and Lingis (2000).

whales are good”(quoted in Einarsson 80)—except that “good” often means “special”—that is, *special, like us*. Many of us believe whales should be neither eaten, nor slaughtered, nor held in captivity, but this belief is likely an extension of our repugnance towards the human as food, mass murder victim, and slave. So perhaps we have not overcome human exceptionalism, but rather extended its reach to include those enough like us to be “family.”

And, even if we do empathize with the whale *as whale*, how far can that empathy take us? On my last whale watch in the Bay of Fundy, while the thrill of spotting an endangered North Atlantic right whale was undeniable, so too was the eventual boredom I felt, waiting for another blow. The wind was cold, and the water looked even colder. I knew I should be elated—I *was witnessing one of our planet’s most vulnerable life forms, thriving in its natural habitat*—but my fingers were frozen, my neck stiff and my patience struggling. And, despite the longstanding romance attached to “swimming with cetaceans,” as I looked out into the choppy, freezing sea, I knew that just about the last place I wanted to be was in that water, with those whales. While they might be an awful lot like me, at that moment I did not feel an awful lot like them. I dropped the binoculars from my eyes, and the whales disappeared below the waves—back to a home that becomes for us humans increasingly unrecognizable and decreasingly hospitable, the deeper the whales dive. The grey streaks of cetacean back disappeared beneath the breaking waves, swallowed up by an oceanic habitat that is at once of me and within me, but always also beyond me, reaching depths *my* body cannot fathom. Such experiences point to more than restlessness on a cold starboard deck. Despite the many ways in which we do share affinities, in moments like this we are reminded that whale-being (and any other non-human animal being) will always remain, to some extent, beyond us. We can meet at certain (often exhilarating, sometimes uncomfortable) thresholds, but these “borders of the liveable”⁵ cannot be crossed. Probably not that day, but sometime shortly thereafter, the whales I spotted in the Basin would make their way out of the bay, hugging the U.S. Eastern seaboard as they travelled south to their winter calving grounds. And, just as they passed Cape Cod, these whales probably travelled directly over a benthic

⁵ Deleuze (1996: 118). These are thresholds “beyond which it would entail the death of any well-constituted subject.”

zone called Georges Bank—an elevated area of sea floor, known primarily for its productive fishery, but also, since the late 1970's, as a potentially fecund site for oil and gas drilling.⁶

And, as they glided over Georges Bank, these whales might have had an encounter of their own. “Killer Blobs threaten Canada’s Waters” read the headline in one of Canada’s national newspapers, *The Globe and Mail*.⁷ In 2005, Canada’s Maritime aquaculture and fisheries industries were put on high alert due to the aggressive and spreading colonization of the sea floor in Georges Bank by a blanket of fauna, described by scientists as a (collective) “slimy creature” with an “icky texture” resembling “porridge-like goop” (Auld, 2005b). “The Blob” had been steadily creeping across Georges Bank for several years, creating a thick barrier between fish and what fish feed on. This aquatic creep meant trouble, not only for the fish, but also for the human fishers, who rely on the Georges Bank fish stocks for their livelihood. “The Blob”—still there to this day—is in fact a colony of invasive decidedly non-human ascidiacea, otherwise known as tunicates, or sea squirts. Sea squirts are ubiquitous, vastly diverse, and under no threat of extinction. While at a stretch, we humans might feel “whale-like,” could this “fellow-feeling” ever extend to “The Blob”? What kind of kinships are these?

Somewhere in the benthos of the northwest Atlantic, then, various questions about ethics and affinity collide, and rise to the surface: what does it mean to say we share kinship with other creatures, and in what ways does this affinity obligate us to them? Must kinship begin with recognition—that is, with a recognition of my human heart, or flippers, in an animal other? What are the limits of affinity, and what are we to do when it slips from our grasp—like the right whale flukes beneath the breaking waves? While we may be able to follow this “fellow-feeling” for a distance, it eventually outswims it. And, if the bonds of “fellow-feeling” toward a creature whose cognitive, emotional, and social intelligence so closely reflects our own can be

⁶ The area has been protected from oil and gas development since the 1980s by moratoria by both the U.S. and Canada, although such moratoria are always precarious. The politics of oil engages in its own cycles of repetition...

⁷ See Auld (2005a) and (2005b).

so easily ruptured (out of boredom and discomfort, no less), should this signal to us that building a more extensive platform of animal ethics upon such a fickle foundation might be risky? That is, if kinship as affinity is the basis of animal ethics—and a shaky basis at that—how am I to respond to those creatures, such as that “slew of goopy and gross sea creatures” (Auld, 2005a)⁸ with whom I presumably feel no affinity at all? What constellations of relation might guide my engagement *then*?

What Repeats?

While an ethics of affinity may indeed be an important starting point for cultivating care and concern for non-human animals, it can only bring us so far. Recognition, as an operator of relation, is too limited and, to put it bluntly, too self-referential (and self-preserving?) to serve as an adequate basis for interaction with bodies of alterity. I therefore propose that repetition, in the sense elaborated by Continental thinker Gilles Deleuze, is a more encompassing operator of relation, which allows for a more complex choreography of relations with our animal kin.⁹ I am not suggesting that such repetitions are “ethics,” or that to repeat is to be ethical. As we shall see, a careful inventory of the ways in which animal bodies and ways of being repeat in, through and as our own reveals such repetitions to be complex and multiple: hidden and obvious; ironic and necessary; contradictory and complementary; dangerous and life-affirming; self-serving and self-effacing. From such an inventory, no easy ethical formulations can follow. But perhaps the work of problematizing our own human subjectivity within any formulation of animal ethics is an on-going project, and one more complex than gives us comfort. To undertake these inventories of repetitions, I suggest, can be a key element of this difficult self-reflexive work.

⁸ The rhetoric of this “objective journalism”—describing this particular fauna in entirely horror-genre oriented malevolent terms such as “menacing,” “fouling,” “threatening,” “icky” and “gross”—is worth a study unto itself.

⁹ I am indebted to my lively and extended conversations with Mielle Chandler for this proposition. It was through the intersection of her thinking about gestationality, developmental systems and the more-than-human, with my interest in Deleuzian difference and repetition in relation to water and the more-than-human, that this idea that other animals might “repeat, but differently” in us and as us, arose. While I take responsibility for the ways I have developed this idea in this paper, the inspiration was a joint endeavour.

Moreover, I do not wish to suggest that these repetitions are *not* a form of kinship. Merleau-Ponty did not necessarily get it wrong: our ways of being in the world do echo those of our animal kin and indeed all of the other life forms with whom we share a planetary intercorporeity. These echoes, however, are not always readily recognized by us. As they refract through our own bodies, experiences and contexts, these reverberations are distorted and made strange. We might not recognize them as affinity at all, and in some instances, we may even deliberately disavow them, refuse to see the connection. To call this mode of relation a repetition rather than a bare “affinity,” then, helps us escape the demand for straightforward resemblance upon which it is so tempting to build an animal ethics. More importantly, to focus on “what repeats” means that we—the *human*—are no longer the reference point, the ground zero, the control case, the original, against which all other modes of being and relating can be measured. We are but another complex node in a congeries of iterations—repeating and repeated, among other multitudinous forms of life. These repetitions *are*, in fact, kinships, but as Merleau-Ponty might say, humans and other animals are “strange kin” (2003: 271); these repetitions are uncanny, disturbing, unfamiliar—but also intimately recognizable. While Merleau-Ponty’s analysis heads in a different direction than my own (indeed, for Merleau-Ponty, the human body—“my body,” in fact—remains “the measurant of all” (2000: 249)), I would like to borrow his phrase “strange kinship” as an apt way of describing these relations of repetition in which we are imbricated—these cross-body choreographies that embed us in one another’s contexts of materiality, meaning and being, yet pose no demand for recognition of a self as a measure of relation.¹⁰

Deleuze and Repetition

Deleuze’s best-known pronouncements on the relation between human and other animals are connected to the concept of “becoming-animal,” which he develops (with Felix Guattari) in *A Thousand Plateaus*. According to this mode of engagement,

¹⁰ Kelly Oliver (2007) provides a helpful explication of Merleau-Ponty’s concept of interanimality and his term “strange kinship” (between humans and other animals).

which operates according to the logic of contagion, human and other animal bodies are continuously contacting and “co-mingling” with one another, and through such “transfections,” our bodies are always participating in the becoming of other animal bodies (Deleuze and Guattari 1987: 232-309). The becoming of bodies is thus always in a relational mode, and we are literally invested in one another.¹¹ My suggestion in this paper, however, is that Deleuze’s concept of *repetition* offers us a differently nuanced mode of relation for understanding these imbrications with other animals. In putting forth a concept of repetition that radically challenges our commonsensical understanding thereof, Deleuze’s thought provides the impetus for charting our “strange kinships” with other animals. Most importantly for Deleuze, repetition unfolds as difference—to repeat is to reiterate, but differently. This focus on difference, I propose, opens the possibility to understand human-other animal relations simultaneously in terms of connection and relation (those modes that are so strongly highlighted in the notion of becoming-animal), but also in terms of an uncanny strangeness, which the notion of becoming may cover-up or elide. If “becoming-animal” emphasizes our contiguity with animals, “difference and repetition” emphasizes our strange reiterations across a *rupture*.

Deleuze’s (1994) concept of repetition is developed primarily in his book *Difference and Repetition*. One of his principal claims here is that repetition does not belong to generality. Repetition is not resemblance: to repeat is not simply to exchange some replaceable aspect of the original for something else, such that the copy is of the same general kind. “If repetition exists,” writes Deleuze, “it expresses at once a singularity opposed to the general...a distinctive opposed to the ordinary, an instantaneity opposed to variation” (2-3). What repeats, in other words, is pure difference. All that can truly repeat is difference—a force, a compulsion, a desire to differ from oneself. One repeats when one can throw off the shackles of identity, reject the need to reproduce the self-same, and return, instead, as difference. Repetition is not representation, but rather an affirmation and a selection: select from the potentiality that is, and reiterate across a *rupture*.

¹¹ See Neimanis (2007) for further description of becoming-animal as a mode of being not unrelated to Merleau-Ponty’s idea of intercorporeity.

Such repetitions have nothing, therefore, to do with teleology, whereby each repetition would be an “improvement” upon the previous instantiation. Deleuze explicitly denies such a view of progress (1994: 248-250). Repetitions rather work in complex and multiple cycles: circling back, gathering up, rhizomatically following always new lines of flight...There is no predetermined course of their expression. Yet, even while what repeats is difference, it is misleading to assume that a repetition could be entirely open-ended. A repetition can only select from a given field of potentiality. This means that an important relation nonetheless exists between iterations—just not one of resemblance. Perhaps the best way of describing this relation is as *haunted*: a body, an idea, an entity that carries the ghosts of both past and future iterations enfolded within. *Repeated, but differently*. If we do catch a glimpse of resemblance, it is uncanny—an ephemeral ghost that, rather than affirming resemblance, asks a question about the strange pathways of relation that sustain us.

So, although for Merleau-Ponty our kinships—no matter how strange—are still triangulated using one’s own body as “measurant,” I suggest that Deleuze’s repetition allows us to ply and productively disturb this foundation. Of course, as long as we remain embodied human subjects embarking upon the project of writing philosophy, this foundation will never be completely disrupted (nor should it be). We could never fully divest ourselves of a grounding in our own subjectivity, and our human subjectivity is what facilitates many of our very human projects. Yet, there is still much we can do to decentre this self-referentiality. Thinking through repetition, I suggest, is one such means.

If we return to the sea, then: what kinds of relations are inaugurated by thinking in terms of repetition? What kinds of engagement become possible? What if my “kinship” with the whale were not conditioned by a representation of my generality in her, recognizable to me as some variation of me, but rather a realization that I am a repetition of this “strange kin?” While I too may be nostalgic for a warm watery home, I know my life is dependent upon the open air and solid ground. As the whale slips beneath the waves, this might not be a failure to connect, but rather an acknowledgement of my existence as an iteration of hers: the whale, repeated differently. She left the sea, but then returned again. She is my could-have-been, my might-still-become.

But again, while I might readily understand myself as a repetition of cetacean life, what might it mean to understand myself as a repetition of ascidian life, too? How might my responsivity to the sea squirt be shaped by the ways that its body, its ways of being, repeat—but differently—as me? How do I in turn re-circulate these repetitions back to ascidian life—asking that it repeat my ways of being, living, becoming? What might the movements, the contours, the qualities of these repetitions teach me about my animal others, about myself, and about the always complex ways in which we relate? In the currents of these repetitions, the past is never really past, but always swept up into eddies of our present: present thought, present action, present bodies, present philosophy. And within these presents, ripples of the future are always circulating, too.

And, perhaps such an inventory demands a method, a practice, a way of writing these repetitions that can be attentive to their contradictions and complexity. This would be a writing that describes without fully knowing, a writing that cannot impose an ethics, but can clear space for ethical moments to emerge. In an article concerning the complexity of negotiating human and more-than-human intertwinings, actor-network theorist Stephen Muecke (2009) reminds us that such negotiation must begin with a “*description* of what is happening” (196). Muecke elaborates that in such endeavours, entrenched divisions between the sciences and the humanities must be overcome, so that we might “describe the interplay of real things in a situation” (200). (We might even be tempted to note the repetition here—a strange kinship between actor-network theory and Merleau-Ponty’s phenomenology that “tries to give a direct description of our experience as it is” (2000: vii)?). But even if we concede, as Muecke does,¹² that description is never neutral, is such concession enough? How might we make ourselves even more alive to the power of textual containment, to the ways in which word and world, text and context, too, are always repeating differently, across time, space and rupture? How might we expose the fact that as critic, one can no longer claim to be the omniscient “hero,”¹³ but is instead always a scavenger fish, combing

¹² As Muecke (2009) explains, “arguments and values do not come after the fact; they are there at the birth of facts, and of perception” (197).

the seafloor of matter and meaning? Just as water makes parasites of us all, this writing might only survive by living off of (through, with, alongside) what we have already said and what we already claim to know, even as it pushes at the borders of what we do not. Description, yes. But also: para-citation.

We are bodies (words, water, flesh) necessarily bound up in each other: memory, potentiality, gift, debt. *Repeated, but differently.*

Part II: 13 Repetitions

Repetition 1: Larvae

A notable fact about sea squirts: they are chordates. In other words, despite our failures of affinity, ascidians share many characteristics with other chordates, such as humans. To be chordate means that at some point in your development, you will show off a hollow dorsal nerve chord, pharyngeal gill slits, a flexible notochord, a tail, a ventral heart. In most chordates, the notochord will eventually form a bony or cartilaginous spine—that is to say, one grows a backbone. These are the vertebrates.

In Deleuze's discussions of embryogenesis and evolutionary biology, the larva hovers on the precipice between the virtual and the actual. As Deleuze expounds, the larva, or egg, holds an unknown latency, a potentiality for expression that may never be expressed. The larval subject, for Deleuze, is the potential subject, or subject-to-come, the subject who is yet to be differentiated (1994: 78, 119, 219). Deleuze suggests this notion of larval subjectivity as an implicit challenge to biologist Ernst Haeckel's 1866 claims that "ontogeny recapitulates phylogeny."¹⁴ In this theory, which remained

¹³ As Muecke writes, one of the key ways in which cultural studies must change in order to take on the question of the more-than-human, is to agree to "No more critic as hero. The critic may find himself [sic] less able to denounce others' positions based on access to a transcendental philosophy. This should come as an immense relief to all concerned!" (200).

popular in evolutionary circles for decades, Haeckel asserted that in the growth of a human embryo, one could see a miniaturized mirroring of phylogeny, or the evolutionary history of species. Haeckel's theory thus posited a teleological version of evolution, whereby development from amoeba, to invertebrate, eventually to tetrapod human was the destined course of progress, just as any embryo was destined to progress from a less-developed larva into a more complex, more "evolved" adult. But for Deleuze, evolution unfolds from virtuality—the larval subject, teeming with latent potentiality—to actuality. The embryo "lives the unliveable" (1994: 250) in Deleuze's words, and "only the involuted evolve" (1994: 118). The larva, the embryo, holds all the potentiality that would rip an adult apart (1994: 215, 250; Deleuze and Guattari 1987: 47).

Unlike humans, ascidians are invertebrate chordates. They begin their lives as tadpole-like larva, with heads and tails, hearts and stomachs, and eyes. Their motile larvae freely swim about in search of a suitable place to settle down. At this point they reabsorb their spines, their tails, their eyes. (*An involution?*) They grow gonads, their siphons become more pronounced, and they spend the rest of their zooid, sessile existence, taking in water and squirting it out again.

Deleuze: To grow from larva to adult, the adult simply selects what it can withstand.

In a context of *fastercheapermore*, what might the sea squirt teach us about "progress?"

¹⁴ In *Difference and Repetition*, Deleuze makes this allusion in reference to von Baer's discovery that "an embryo does not reproduce ancestral adult forms belonging to other species, but rather experiences or undergoes states and undertakes movements which are not viable for the species but go beyond the limits of the species, genus, order or class, and can be sustained only by the embryo itself, under the conditions of embryonic life" (Deleuze 1994: 249). In *A Thousand Plateaus* the reference is more direct ("You can never draw conclusions about phylogenesis on the basis of embryogenesis" (Deleuze and Guattari 1987: 47)).

Repetition 2: Globalization

“The Blob” on Georges Bank is not a solitary phenomenon. Ascidians are ubiquitous, and rather promiscuous. They populate major bodies of water in all regions of the globe. And, “[r]ecent surveys of invertebrates in many coastal areas demonstrate ever-increasing populations of non-indigenous ascidians” (Lambert, 2001: 250).

Invasive species are non-native species that disrupt and adversely affect, economically, environmentally, and/or ecologically, a particular habitat through domination and colonization.

***Herdmania spp:** Several species of *Herdmania* were described from the Pacific, then lumped under *H. Momus* with numerous records worldwide in the tropics. It is now apparent that there are several distinct species (Lambert, 2001: 252).*

***Microcosmus exasperatus:** This large stolidobranch is common in the Mediterranean, Hawaii, Guam, Australia and throughout the Indo-Pacific. Its origin will probably never be known. (253).*

***Symplegma brakenhielmi:** Known worldwide under its former name of *S. Oceania*, it was long recognized as a successful invader in many parts of the world. It is probable, however, that the many records for this species really refer to several species; they are difficult to distinguish (254).*

(“There are so many bad guys coming across—bandits and smugglers,” said one concerned citizen. So, the Arizona legislature is about to pass the toughest law against illegal immigrants in the country” (Whitaker, 2010: n.p.).)

Ascidians are also known as “marine pests,” “foulers,” and more recently, as a “biosecurity challenge” (Hodge, 2010).

(“(The law’s) intended to be the toughest,” said Arizona State Senator Russell Pearce. “They’re illegal,” Pearce said. “This is not harsh” (Whitaker, 2010: n.p.).)

“There are now numerous documented instances of successful and apparently permanent establishment.” (Lambert, 2001: 250)

“Many of the most significant factors leading to invasive-species settlement are anthropogenic. Aquaculture, that is, the artificial substrates that hold huge monocultures of mussels and other bivalves with their vast amount of shell surface are ideal habitats for ascidian settlement.” (Lambert, 2001: 250)

Repetition, not only of bodies, but ways of being.

Repetition 3: Biomagnification

Ascidiacea are exceptional filter feeders: a single zooid may be capable of filtering up to 100 gallons of water each day (Hanley, 2010). As such, adult sea squirts accumulate [pollutants](#) and toxins that can be harmful to their larvae and impede enzyme function in adult tissues. “This property has made some species sensitive indicators of pollution” (Wikipedia, “Ascidiacea”).

Evolutionary biologists call it matrotropy: eating one's mother. As Derrida says, “*Il faut bien manger.*”¹⁵ But the ingredients of human breast milk would go something like this: fat, vitamins A, C, E and K, lactose, essential minerals, growth hormones, proteins, enzymes and antibodies, DDT, PCB's, dioxin, trichloroethylene, perchlorate, mercury, lead, benzene, arsenic, paint thinner, dry-cleaning fluid, toilet deodorizers, Teflon, rocket fuel, termite poison, fungicides and flame retardant (Williams, 2005). Indeed, nursing one's young may be the ultimate detox: “Scientists believe that mothers siphon off to their baby a significant amount of their lifelong store of chemicals in the course of breast-feeding” (Williams, 2005: n.p.).

¹⁵This is the French title of an interview with Derrida known in English as “Eating Well, or the Calculation of the Subject” (1995). In this interview, Derrida contends that whether or not we eat animals is not the ethical question, but rather: how do we eat them.

Thanks to cold temperatures and little sunlight, toxins break down slowly in the Arctic. A thumb-sized piece of maktaaq, a staple in the Inuit diet, contains more than Health Canada's maximum recommended intake of PCBs for an entire week (Duffy). "This property has made some species sensitive indicators of pollution" (Wikipedia, "Ascidiacea").

"*Signs of Danger*," writes Peter van Wyck: "The point is that threat—as threat—has the status of paradoxical event. On one hand, it is something that is in advance of the accident, something in advance of that which befalls. But on the other, to be under threat is for something to already have taken place" (Van Wyck, 2004: xix)

What has already taken place? What bodies of ascidian life, what bodily fluids, are repeating? Belugas were known to whalers as "sea canaries" because of the bird-like chirps, whistles and squeals they emit. But there are other canaries of the sea now, too: the coal mine is flooding, and sea squirts are swimming for their lives.

Repetition 4: Sociality

Sea mammals and sea squirts are colliding in the coastal waters of North Florida, too. The endangered Florida manatee spends six to eight hours a day feeding on sea grasses. Watercraft collisions are responsible for most manatee deaths, but anthropogenic habitat destruction is another leading factor (Van Meter, 1989).

Periodic red tide blooms have also been associated with a number of manatee deaths. Sea squirts, those exceptional filter-feeders, accumulate brevetoxins from red tide phytoplankton. While the brevetoxin-concentrated sea squirts adhere to the sea grasses, these grasses are also the manatee's primary source of food.

"It is unclear what causes red tides, but the frequency and severity of algal blooms in many parts of the world have been linked to increased nutrient loading from human activities" as in agricultural run-off. Moreover, "[c]oastal water pollution produced by humans and systematic increase in sea water temperature have also been implicated... in red tides" (Florida Red Tide Solutions, 2011: n.p.). And still, as listed

in one comprehensive information booklet on the manatee, for the manatee to die from “red tide” is to die from “natural causes” (Van Meter, 1989).

But “biology is relentlessly historical, all the way down.” Donna Haraway has noted, “There is no border where... culture rules and nature submits, or vice versa... Every being that matters is a congeries of its formative histories” (2004: 3).

The repetition of another’s body in and as one’s own holds no guarantees.

Donna Haraway also asks: “Who cleans up the shit in a companion species relation?” (2004: 317)

Repetition 5: Sex

Almost all ascidians are hermaphrodites, where each animal has one testis and one ovary, and produces both ova and sperm. But in ascidian sex life, there really is no “norm.” In some colony-forming species, fertilization takes place inside an individual squirt, but development takes place in the chamber the system shares. In other colonial ascidians, reproduction is asexual: buds develop and grow to full size on an adult, then break off as new individuals (“Sea Squirts: Ascidiacea-Behavior And Reproduction”).

Joan Roughgarden (2004), in her work on animal sexuality, notes that according to common biology, “male” dolphins and whales are described as having no external genitals, no scrotum, but rather a pair of testes located within their body cavity. The penis is found in a “genital slit” and (unless erect) is covered by flaps (40). Biologists are quick to point out the good reasons behind this bodily architecture, namely hydrodynamic streamlining (Zimmer, 1998: 123). Roughgarden notes, however, that this genital architecture, although “normal” in unambiguously male dolphins, would be considered a very exceptional intersex morphology in humans. She wonders if “perhaps cetaceans are on their evolutionary way to the state that hermaphroditic fish have already attained” (2004: 41).

Charles Darwin in a letter to Thomas Huxley: “Our ancestor was an animal which breathed water, had a swim bladder, a great swimming tail, an imperfect skull, and undoubtedly was an hermaphrodite! Here is a pleasant genealogy for mankind” (quoted in Zimmer, 1998: n.p.).

Repetition 6: Food for thought

As I nibble at your ear, or lick the salt from your skin, I wonder: isn’t sex a mostly gustatory pleasure?

Sea squirt bibimbap is a specialty of Geojae-do island, not far from Masan, in Korea, while in Greece sea squirts are eaten raw with lemon, olive oil and parsley. Sometimes known as sea pork, the French call certain ascidians as *les figues de mer* (Wikipedia, “Ascidiacea”).

Gustatory incorporation; a Derridean “eating well.”

As one environmental blogger notes, “saving our lakes and oceans from their apparently inexorable slide back to the Archean Eon” may well depend on developing a taste for invasive species (Grescoe, 2008: n.p.).

Bottom-dwelling fish, skates, and sharks like to eat living Sea Pork (Mitchell, 2008).

“Il faut bien manger.”

Repetition 7: Indigestion

But tell that to the manatee.

Repetition 8: Ontogeny Recapitulates Phylogeny, or This Watery Womb

We know now that Ernst Haeckl was wrong—ontogeny does not, as a rule, recapitulate phylogeny. The humble sea squirt, whose vertebrate larva misplaced its rocky spine somewhere along the path to maturity, is the best disclaimer of that once-held truism.

Yet what expectant human mother has not at some point imagined her fetus as a tadpole, all fish eyes and fins, pre-amphibious, somersaulting its way through her amniotic seas? Our bodies: the archives of our evolutions. Her pasts literally well up inside her, time a crumpled up tissue, now responding to the swell. Something is remembered... a tail reabsorbed, an aorta hooked. This is not “memory,” if memory, as Deleuze says, is the active synthesis of moments required to create a subject (1994: 70-128).

But if there is no teleological tending towards subjectivity, who, or what, remembers? Sandor Ferenczi, student and pen pal of Sigmund Freud, suggested that dreams of water recall not only the trauma of birth, as we are expelled from our mothers’ wombs, but also the phylogenetic “catastrophe of the recession of oceans” (Ferenczi, 2005: 102), a loss we tetrapods have shouldered for millennia. Our traumas are personal, but they are geological as well, Ferenczi says. Desire, loss and relationality are biological phenomena, as much as they are cultural. Our organs—that is “mere biological matter” thinks, problem-solves, remembers. Ferenczi (perhaps also remembering a future still-to-come) called this a matter of the biological unconscious. Freud, apparently, was not impressed.

Sea squirts, I repeat, are widely manifest as invasive species.

My body was invaded, recolonized three times.

But while the gestational body remembers (thinks, problem-solves), how are we to understand the sea squirt’s forgetting—the forgetting of a vertebrate future that for this creature quickly slips away as a morphogenetic past, the brain and the tail

consumed, eaten by the developing self? Autotrophy? In a manner of speaking. Chordate futurity digesting in the body, waiting to be selected.

Past and future, collide and switch. Like those rarest of rivers, repetition flows both ways.

Repetition 9: Reproduction

Lately, ascidians have garnered particular attention: they harbour an antigen-producing microbe that can treat cancer. Far more potent than traditional chemotherapy, “a mere 11 pounds of the drug would satisfy world demand for a year” (Cromie, 2002: n.p.).

Sea squirt derived antigens were initially tested on patients with breast, ovarian and connective tissue tumors. It is unclear why certain highly gendered cancers are particularly responsive to sea-squirt derivatives. I wonder: What assemblages are forming that specifically link oceanic life to the repair of organic communication¹⁶ breakdown within women’s gestational zones? The rhythm of a sea creature, echoing through the womb.

But if there is no original, no point, no body, no beginning of beginnings from which it all started, then womb, too, is already a repetition, a becoming, an unfolding. Womb and water; water and womb. Watery life gestating possibilities for other watery life yet-to-come, for life that might-not-have-been.¹⁷

Repetition 10: Water/Milieu

“Evolution,” Deleuze reminds us, “does not take place in the open air” (1994: 118).

¹⁶ See Elizabeth A. Wilson (2008) on organic communication.

¹⁷ See Chandler and Neimanis (forthcoming).

As researcher Matthew Fletcher notes, "The marine environment is a realm of biological and chemical diversity, and marine organisms... are a rich source of intriguing and unusual molecules with the potential to become powerful drugs" (BBC, 2005).

Musing again on hermaphroditic fish, Roughgarden wonders why it is that oceanic environments, unlike life on land, that seem to be so accommodating—and even facilitative of—diverse sexuality (31). What repeats?

An exterior milieu, now folded inside. Not only the sea, but a congeries of bodies, of species, each the evolutionary gestational milieu for an other. We are all watery bodies, constantly selecting, reinventing, repeating one another, from precipitation to primordial soup.

Repetition 11: Oikos

The anti-cancer drugs derived from sea squirt compounds inaugurate flows of power between ascidian life, specific bodies in pain, and multinational pharmaceutical companies. To whose advantage are sea squirt bodies being commandeered?

"*Oikos* is Greek for "dwelling" and becomes the prefix "eco" that is common to both ecology (the logic of dwelling) and economy (the management of dwelling)" (Chen, 2010). So why is it, asks Cecilia Chen, that we treat these as separate considerations?

The sea-squirt derived antigens were synthesized by a postdoctoral fellow at Harvard, named David Gin, in the lab of Nobel Prize winning chemist Elias J. Corey (Cromie, 2000). Gin, a native Vancouverite, now works at the Sloan-Kettering Institute in Chicago, having left Corey's lab to build a superstar career in molecular biology. Ownership of the patent remained Harvard University's, while the commercial license of the cancer-treating drug is owned by Portuguese pharmaceutical company, PharmaMar. Meanwhile, 0.25 mg (about 5 doses) of Yondelis—the antigen's trade name retails for about 1000 Euros.

(In a context of globalization, is sovereignty an invasive species? Capitalism?)¹⁸

Ecofeminist Susan Hawthorne (2007) has analyzed the key confluences of bioprospecting: on the one hand, animal and plant life is prospected from the rivers and oceans, while on the other, biological data and matter is prospected from the bodies of women, isolated and indigenous peoples, and people with disabilities and chronic disease. All of these bodies are reduced to “resources” to bring profit to the globally powerful, who then sell their “discoveries” back to those very same resource-bodies who have been “prospected.” Not only *how* is the sea squirt repeating, then, but: *for whom?*

On May 14, 2010, I attended the funeral of Barbara Godard and her cancer-addled gestational zones. I still experience the immediate grief of losing that singular, irreplaceable body.

“Repetition,” writes Deleuze, in the opening sentence of *Difference and Repetition*, “is not generality.... If exchange is the criterion of generality, theft and gift are those of repetition. There is, therefore, an *economic* difference between the two” (1994: 1).

Repetition 12: Memory

Or, what might it mean to say that the sea squirt remembers?

“Analyses of tissue transplantation... have shown that many invertebrates, including tunicates [also known as sea squirts], possess a precise capacity to recognize and reject foreign tissue...” That is to say, they “exhibit immunological memory” (Cooper and Parrinello, 2001: 385).

When exposed to light stimuli, ascidian larvae exhibit a photophobic response, and begin swimming faster. “Preliminary work showed ascidian larvae can storage this memory for one minute” (Tsuda et. al., 2001:156).

¹⁸ See Chandler (2007).

Science—or is it philosophy?—makes ascidians remember.

In May 2010, biologists Michael Virata and Robert Zeller reported a breakthrough in Alzheimers Disease research: scientists can use expressly bred transgenic ascidian larva as a useful homolog to studying Alzeheimer’s disease in human patients. After identifying and manipulating certain gene structures in the sea squirt larva, scientists can observe patterns of certain plague formations that provide valuable information about the development of Alzeheimers and its treatment (Virata and Zeller, 2010).

The suitability of sea squirts to this task is in part based on our evolutionary affinity: “Ascidians are likely to share a larger number of genes with humans that are not present in other invertebrates,” explain Virata and Zeller. “To our knowledge, this is the first invertebrate model system in which orthologs for all the genes implicated in APP processing have been identified.”

“Mice have [also] been used extensively as Alzheimers’ animal models owing to the similarity with the human brain anatomy...” (n.p.) they continue. But “Transgenic mice models take, on average, eight months to display any observable plaque phenotype...Because of their rapid development, the use of invertebrate model systems, such as worms and flies, has reduced the time for plaque formation down to several weeks. Our results in the ascidian demonstrate that this time... can be reduced to less than a day” (n.p.). Virata and Zeller add: “Generating transgenic mice is not only time intensive but also costly” (n.p.).

That is to say, in the name of money and speed, sea squirts are losing their minds.

“I do not repeat because I repress. I repress because I repeat, I forget because I repeat. I repress, because I can live certain things or certain experiences only in the mode of repetition” (Deleuze 1994: 18).

So what might it mean to say that the sea squirt remembers?

Repetition 13: Biomimicry/Guilt by Association

Dr Eric Schmidt notes: "Coral reefs and other ocean environments are like rainforests—full of natural chemicals to potentially treat human disease. Unfortunately, it's difficult to supply pharmaceuticals from these delicate environments. We have solved this by synthesizing the compounds in a lab" (BBC, 2005). Alternatively, Dominic Mendola, owner of an aquaculture company called CalBioMarine, says that aquaculture could satisfy the United States' demand for cancer-fighting sea-squirt derived antigens. "We would likely need 50,000 kg of sea squirts a year," he says. "It would be difficult. But we could do it" (BBC, 1999).

Meanwhile, recently in Fort Meyers, "several black jelly-like balls are confusing some beach go-ers. Many people were concerned these black blobs known as 'sea pork' were possible tar balls from the oil spill" (NBC2 RSW Florida, 2010: n.p.).

"That's the issue, people are seeing anything right now that perhaps (is) black and has any substance at all to it. They're thinking it's a tar ball. It's not a tar ball," said John Albion of the Fort Myers Beach Chamber of Commerce. Officials want to stress not only are these blobs natural to the Gulf, in some cases they actually work to keep the water clean.

The shores were clear from most of the sea pork the next Saturday afternoon." (NBC2 RSW Florida, 2010: n.p.).

Meanwhile, in a fish market in Peru, dolphin meat labelled as 'sea pork' is selling for 40 cents a pound. Beef costs a dollar eighty-five (Hall, 2003). Would a sow by any other name still taste as sweet?

"Repetition," writes Deleuze, "belongs to... irony" (1994: 5).

* * *

Repetitions, attempting to communicate: *at the border which separates our knowledge from our ignorance and transforms the one into the other.*

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