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Fishy Beginnings

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.

– Charles Darwin in a letter to Thomas Huxley
(cited in Zimmer 1998: n.p.)

The oceans are where life was born and the salty fluid that courses through our veins is a reminder of our aqueous origins.

– David Suzuki (2006: 11)

When the seas dried, the primitive Fish left its associated milieu to explore land, forced to 'stand on its own legs', now carrying water on the inside, in the amniotic membranes protecting the embryo.

– Deleuze and Guattari (1987: 55)

But just at that time the differences among us were becoming accentuated: there might be a family that had been living on land, say, for several generations, whose young people acted in a way that wasn't even amphibious but almost reptilian already; and there were others who lingered, still living like fish, those who, in fact, became even more fishy than they had been before.

– Italo Calvino (1965: 61)

We are rather fishy, we humans. We pretty much swam our way here, if not on the outside, then at least on the inside. We are all still, necessarily, treading water. As the above four epigraphs, by a naturalist-cum-evolutionary biologist,

an environmentalist, a pair of philosophers, and a fabulist, highlight, we are intimately linked to our evolutionary beginnings through water. Our being as bodies of water has been facilitated by water – that is, by other bodies of water that have preceded us.

Indeed all biological life – animals, plants, and fungi, as well as protocists (single-celled organisms including slime moulds and some simple algae) and monera (the simplest forms of life such as blue-green algae and bacteria) – depends on the existence of water. This is why our home planet is, from what we know so far, unique within our own solar system. This is also why discoveries such as ice on Mars carry such monumental implications (Whitehouse 2002). Right back to the first signs of life on earth at least 3.9 billion years ago, when small organic proteins likely interacted with their habitat to produce the first bacterial life forms, water has been necessary for the gestation of all living beings. Our earliest ancestors were all apparently water babies, squirming, scuttling, or swimming around their respective watery worlds.

Yet, between 380 and 360 million years ago, a ‘fabulous shape-shifting’ occurred, in the words of evolutionary biologist Carl Zimmer (1998: 5). A certain lineage of fish decided to evolve legs and feet, lose their gills, hook their aortas, and venture onto dry land. As Zimmer describes in his detailed account of this terrestrial invasion, such a major transformation demanded countless changes in the bodies of these animals; this was not an overnight phenomenon, but rather a macroevolutionary process that lasted over 100 million years. After musing on an underwater encounter between a snapper (a fish who never left the sea), himself (descended from tetrapods who left the sea perhaps 360 million years ago), and a dolphin (whose ancestors left the sea, only to return there about 30 million years ago), Zimmer remarks, ‘we three animals live in separate countries divided by a fatal boundary’ (4). He refers here to the boundary between air and water, two elements which Zimmer notes are so different ‘that you might as well be comparing life on two different planets’ (6). But at the same time, Zimmer also concedes that the three participants in this underwater encounter are not ‘complete strangers’ (4). In their fundamental difference, he nonetheless catalogues their undeniable similarities: skulls and spines, muscles and eyes, embryos that share a strikingly similar pot-bellied, hunchbacked appearance. Not only does water facilitate the being of all three, but this facilitation is a debt from which none can escape.

In this chapter, I continue to explore the idea that we are all ‘bodies of water’ and as such, implicated in a common way of being and becoming, in relation to others. In the previous chapter, I described this as an ‘ontology’ of amniotics – a mode of embodiment that highlights water as that which both connects us and differentiates us; as that which we both are and which facilitates our becoming. Philosophically speaking, this ontological proposition joins other feminist and posthuman interventions in challenging the idea that ontology first and foremost interpellates sovereign, self-sufficient beings. Amniotics highlights passages of connection (for better or worse) across membranes of difference. Most importantly, though, amniotics foregrounds the idea of gestationality: we owe ourselves to others, and in various ways, we all eventually pass our watery selves on. As bodies of water, we rely on water for our continued proliferation, but we are also reservoirs for this proliferating force of life-in-the-plural. I described this, drawing on Irigaray and Deleuze, as a watery kind of difference and repetition. Our planetary hydrocommons, in this sense, is not just a network of interconnected geophysical and meteorological waters; it is also made up from all bodies that materialize and transform these waters in their own fur and flesh, and in their celled and cyborg forms. Here, I further this proposition in relation to the tri-species encounter that Zimmer describes. How does water help us think about gestationality across species, in a more-than-human frame? And how can we keep not only Zimmer’s ‘fatal boundary’ of difference, but also our watery commonality, in the picture?

My wager is that evolutionary tales, like the one Zimmer tells, provide a lively illustration of the naturalcultural matters of these debts and differentiations. In evolution as elsewhere, our biological matters are always storied, and our knowledges are always situated and contingent. In thinking along with various accounts and interpretations of evolution, I aim to exemplify posthuman feminist phenomenology at work, where scientific knowledge acts as an amplifier of embodied knowing. Rather than either accepting the Word of Science wholesale or alternatively rejecting these accounts due to an ingrained (yet understandable) feminist scepticism of ‘objective data’, scientific explanations of our watery debts join other kinds of origin stories in a thick elaboration of bodies of water as figuration, as embodied imaginary. Coming to a deeper understanding

of this figuration, and how we as bodies of water can live out its promise, is the more general project of this book. In reimagining our bodies as indebted to all kinds of bodies that condition our possibility, I hope we might also consider how, and to whom, we pass our own watery bodies on. If evolution is composed of inheritances and exchanges of all kinds, what do water and our watery kin inherit *from us*, in the context of late capitalism and the Anthropocene?

My concomitant aim is to broach the question of how we know water, and the epistemology of wet. What Zimmer alludes to, after all, in evoking that ‘fatal boundary’ of species differentiation is a geographical consideration, where our embodied orientation towards water underlines an enduring unknowability. Origin stories, as we saw in the last chapter, have no clear beginning. Similarly, our own embodied limits in relation to living in/with water point to limits of ever knowing, or mastering, water – something I explore by considering our strange kinship with aquatic species and a certain ‘fishiness’ we all harbour (even though not all of these kin are technically ‘fish’). Tales of lungfish, whales, and Aquatic Apes set the stage for thinking about watery embodiment as an epistemological question. How do the stories we tell, and the knowledges we draw on to tell them, work to establish certain kinds of ethical relations with our watery others? How does watery bodiedness demand attention to situated knowledge as an onto-ethico-epistemological matter? This is to say, as we move below the surface, how bodies are *in* water also matters. We cannot survive in the worlds of some of our closest kin, even as they swim within our own deep embodied channels – and we in theirs. *Intimacy is not mastery*. This claim frames the final section of this chapter, where I draw on the postcolonial theory of Gayatri Spivak, and in particular, her theory of planetarity. Here I describe the conceptual apparatus of unknowability as an onto-epistemology and an ethics, which we learn from a feminist posthuman phenomenology of bodies of/in water.

Other evolutions

Into the sea (you) are returned... Why leave the sea?

– (Irigaray 1991: 12)

Feminist transcorporeality reminds us that our amniotic waters are not *like* our planetary waters, but continuous with them. As philosopher Luce Irigaray (1993a: 5, 1993c: 15, 2002a: 5) maintains, and as we explored in the previous chapter, the fecundity of gestation is not limited simply to human gestation and the moment of birth, but is rather an ongoing proliferation of life-in-the-plural. In Chapter 2 our exploration of *Marine Lover of Friedrich Nietzsche* (Irigaray's amorous dialogue with the philosopher that chastises him for forgetting the bodies and waters of his birth) suggested that our gestational milieu might thus be understood as the contraction of a greater ocean into a tiny one, and our birth as the passage from a smaller womb back to a larger one. There, I focused on how gestational waters introduce a continuity between planetary and maternal waters, suggesting that bodies of water partake in a relation of amniotics in the most general sense. But in that text, Irigaray (1991: 57) also subtly indicates to us that the abyssal, unknowable depths that gestate us – 'that dark home where you began to be once upon a time. Once and for all' – posit a transcorporeal stretching of species across planetary time. Bodies of water are themselves aqueous milieus for the facilitation of new kinds of life in the proliferation of evolutionary entanglements.

Despite Nietzsche's rejection of Darwinism, the evolutionary tones of *Thus Spoke Zarathustra* (the text to which Irigaray refers in her own *Marine Lover*) are well noted (see Deutscher 2011). In Nietzsche's text, Zarathustra explicitly invokes his evolutionary ancestry and that of the townspeople he addresses.¹ Picking up on these evolutionary undertones, Irigaray (1991: 12) notes that her interlocutor in *Marine Lover* knows not 'if [he is] descended from a monkey or a worm or if [he] might even be some cross between plant and ghost'. But importantly, Nietzsche (1982: 123) also notes that Zarathustra emerges from the sea. He drags his body ashore, and then immediately disavows these beginnings as he pledges his allegiance to the earth (Nietzsche 1982: 125). This is why Irigaray also underlines that Nietzsche/Zarathustra's 'forgetting' is a specifically watery forgetfulness: just as he forgets his watery maternal gestational element, so too does he disavow his watery evolutionary gestational element – that primordial evolutionary soup that gestated us all. Granted, the evolutionary undertones are subtle in Irigaray's text, and she certainly isn't an 'evolutionist'.² Her references to our evolutionary debts nonetheless invite us again, and in an expanded register, to understand gestationality in Irigaray's

work in terms beyond the human maternal womb. Irigaray's criticisms of Zarathustra's preference for terrestrial animals give us an opening for thinking about evolution in terms of species genealogies and kinships. In thinking specifically with evolution's watery tales, we will also see how Irigaray's interest in the elemental cannot be fully separated from a concern with other animal bodies (Deutscher 2011: 71). As Irigaray (1991: 13) herself notes, 'as a companion' her interlocutor never chooses 'a sea creature. Camel, snake, lion, eagle, and doves, monkey and ass, and... Yes. But no to anything that moves in the water. Why this persistent wish for legs, or wings? And never gills?' In invoking our soupy, even *fishy*, beginnings, Irigaray suggests that transcorporeal cycles of gestationality echo not only across human bodies and maternal wombs, nor only between human bodies and watery habitats, but across species, symbiotic becomings, and evolutionary times.

When it comes to evolution, it certainly matters what stories we tell (Haraway 2008, 2015), and how we tell them. Phenomenologist Maxine Sheets-Johnstone (2007) has discussed at length the 'surprising' fact that evolutionary biology and continental philosophy have not formed much of a relationship. Without taking into account the evolutionary continuities of the embodiment which so fascinates them, she notes, phenomenologists in particular forgo any sense of history; 'they pretend as if we all just got here – bees, chimpanzees, and what have you, which is by no means the case' (334). Sheets-Johnstone makes the important point that theory in the humanities and data from the sciences have important knowledge to share with each other; her criticism of the lack of attention to evolution within philosophy, however, is not entirely founded.³ Many major philosophers – such as Nietzsche, Henri Bergson,⁴ Merleau-Ponty,⁵ Deleuze, and Guattari,⁶ and including feminist theorists such as Elizabeth Grosz, Donna Haraway, Claire Colebrook, and Rosi Braidotti, among others – clearly contradict this claim.⁷ Collectively, they demonstrate how evolution and the humanities interrelate in fascinating and game-changing ways. My particular interest here is in those contemporary theorists and writers who engage evolutionary science neither as wholesale critique nor, as Sheets-Johnstone seems to suggest we should, as uncritical acceptance of 'the facts.' Things get far more interesting (and provocative) where evolutionary science is not so much an object of study as it is a co-traveller – something good to think with, to wrestle with, to get inside of. What

might we learn in terms of the stories we tell about ourselves, and how we might tell them differently?

The critical 'thinking with' evolution embraced by thinkers that I've mentioned above (among others) happens in all sorts of ways, not reducible to each other. Yet, a common thread in many of these stories (and one helpful for me in thinking more about watery bodies) is the challenge that many of these thinkers pose to popular Darwinism – that ruthless teleological process of linear, filial descent (whereby species 'improve' over time), accompanied by a notion of the 'survival of the fittest'. Evolution, it turns out, can be understood as multivalent – moving in several directions at once. The 'tree of life' image (where origins seem clear) becomes murkier the more closely we look. Random crossings undermine the comfort of teleology, while individual variation meets external force in patterns of unevenness and unpredictability. For example, in rereading Darwin's theory of natural selection, Elizabeth Grosz (2004: 97–98) demonstrates that natural selection cannot be understood as some transparent notion of fitness, but is rather a complex set of two parallel processes – one, a force of 'internal dynamism within living beings', and the other, the assertion of external forces and influences. Both 'interfere' randomly with one another such that any sense of ordered teleology is disturbed.⁸ Chance, in terms of both individual variation and external force, undoes the notion of evolutionary change as unfolding according to a predictable pattern (see Grosz 2004: 92; Deleuze and Guattari 1987: 54), while symbiotic transfer, lateral mixing, cross-species contamination, and viroid life all hack a popular Darwinism of descent by filiation in key ways (see Deleuze and Guattari 1987: 234–235; Ansell Pearson 1997: 187–189; O'Toole 1997: 164; Haraway 2007; Helmreich 2009: 80–105). In Helmreich's (2009: 81) words, we find the tree of life 'in a brambled state'.

Moreover, these evolution stories are not just biological tales. As Haraway (2004: 2) writes: 'There is no border where evolution ends and history begins, where genes stop and environment takes up, where culture rules and nature submits, or vice versa. Instead, there are turtles upon turtles of naturecultures all the way down. Every being that matters is a congeries of its formative histories – all of them.' Nature and culture are not dichotomous entities, and the former is certainly not the brute or inert matter that is inscribed or made meaningful by the latter. Using feminist philosopher Vicki Kirby's (2013)

terms, we might instead think of evolutionary natures as always ‘writing themselves’ – reading, writing, and rewriting in an ongoing biography. For these thinkers, evolution mixes our categorical separations and certainties rather than reaffirming them.⁹

Evolution is also, as we shall see, where a phylogenetic memory rests in the spleen, where an ancestor is gathered up in a carrier bag, where whales and fish swim through our flesh in lost, loving echoes. In short, evolution is hardly a grand design of transparent improvement. It is complex, multivalent, and often ambiguous. If reading various evolutionary stories teaches us anything, it is that life evolves according to a multiplicity of processes, interconnected, certainly, but by no means uniformly sourced or directed (see Oyama, Griffiths, and Gray 2001). As Stefan Helmreich (2009: 76) reminds me, ‘any origin story has multiple – even contradictory and mutually exclusive – versions’. Or we could put it like this: ‘The attempt to develop a general theory of evolutionary systems is entirely dependent on the kinds of problems being set up’ (Ansell Pearson 1997: 182).

The problem – if indeed you can call it that – I want to set up concerns our watery inheritances. I am interested in how focusing on our evolution as bodies of water might help us understand what it means to be a human body, trying to live ethically with the human and other-than-human watery bodies with whom we share this earth. I’m specifically interested in whether and how we can extend our sense of strange kinship to the planetary waters in which we variously swim and sink, and what work this kind of kinship imaginary might do.

Dissolving origin stories

Life began in the sea. While these swampy beginnings seem to comprise the main storyline of origins, Darwin’s animation of life’s first bubblelings in an oceanic benthos only really surfaced in the late nineteenth century. Stefan Helmreich (2009: 73–74) reminds us that other narratives – of a static and barren dead ocean void of life, or of an abyss of serpents and dragons – have also held sway throughout human history. Yet, despite the fact that the Darwinian primordial ooze imaginary is relatively recent, there are plenty of other stories

that have long affirmed the connections between water, beginnings, and life. In Australian Aboriginal cosmology, the Law understands the stream of life as generated by water (Strang 2013: 189), while the image of parting waters figures within a number of creation stories, from the Hindu goddess Bindumati who divides the Ganges to the Egyptian goddess Isis who divides the river Phaedrus. In Judeo-Christian creation stories, water exists before light. In others – stories of Acuecucyoticihuati, Aztec goddess of oceans, of the oceanic and menstrual Sumero-Babylonian goddess Tiamat, and of Hindu goddess Kali – water is often connected to a feminine fecundity, understood as a sacred source of creation (Gaard 2001: 160).

You have probably heard all this before. Indeed, these deep watery roots power the enduring allure of a return to the feminine seas, seemingly always swimming in the margins of our collective unconscious. In pointing this out, I do not mean to suggest that these myths have constantly ‘led us astray’. Quite the opposite: their staying power signals something to be reconciled with our current moment. Are we telling different stories now, with the onset of late capitalist science? Unlikely. In many ways, the compounding context of contemporary water crises – ocean acidification, the draining of aquifers, the rising sea levels, and the traces of climate change in all of this – are *reinstalling* the imaginary of feminine, aqueous origins at every turn. In a special essay for National Geographic, Barbara Kingsolver (2010: n.p.) refers directly to ‘Mother Water’, and notes: ‘Water is life. It’s the briny broth of our origins, the pounding circulatory system of the world, a precarious molecular edge on which we survive.’ But from another perspective, one could also argue – as does Stefan Helmreich (2009: 99) – that contemporary understandings of life’s beginnings in deep sea thermal vents also install new imaginaries of biogenetic kinship which work to ‘unsex’ this idea of Mother Sea: ‘If the sea was once a chaotic and cosmic amnion, an archive of life primeval and life to come, those pasts and futures nowadays read more like a mix-and-match database’ of gene-trading microbes written in ‘informative language’. Yet, even this story can’t fully wash away the undertows and undertones of life-giving, gestational waters. As Helmreich recounts the message of *Volcanoes of the Deep Sea* – a 2003 IMAX film that tells of a possible hyperthermophilic origin for life in the hottubs of the ancient oceans – this narrative nonetheless still offers us ‘the deep sea as a motherly matrix and nursery for life on Earth’ (72).

What are we to take away from these tales? While Helmreich underlines the ways in which the Mother Sea narrative leaks out, pierced by the hypertext kinship narratives of the new technosciences, the maternal overtones of gestational waters are not easily flushed. Rather than arguing against the association of the feminine with water's gestationality, then, my goal is to expand our understanding of gestationality into posthuman waters. As we already saw in Chapter 2, all bodies of water are gestational. Keeping the feminine in the picture is not the problem (indeed, in many ways this non-forgetting is also a political imperative). The challenge is rather to see how maternal bodies are just one actualization of a more expansive gestationality as a capacity that all bodies of water share. Gestationality does not begin and end with the human, nor with a (heteronormatively inflected) female one at that. Gestationality is something we learn – something we repeat, differently – from water. This is an argument I make in various ways in this book, and which I explain in considerable detail in the previous chapter. Here, I want to focus on it in an evolutionary guise: as evolutionary bodies, water teaches us to repeat a proliferative capacity to gestate life, over and over again, always differently.

But the other point about these origin stories is precisely their divergence from one another. All origin stories – even the most carefully articulated scientific ones – are at some level speculative fabulations. While we may be able to pinpoint an individual parent-womb, the waters that gestate that body, and the body before that, inaugurate us into a watery cascade with no clear beginning. (Scientific accounts of the 'beginning' of planetary *water* are certainly far from definitive! See Kandel 2003, chapter 1.) This is not an epistemological deficiency, where just knowing more, or knowing better, might solve the problem. It is rather an opening to thinking about unknowability as another one of water's lessons. I'll return to this point at the end of the chapter. For now, let's stick with origin trouble, and some of the things we've forgotten.

Elizabeth Grosz (2004), in her recent work exploring the connections between Darwinian evolutionary theory and feminist politics, also notes the connection between our maternal beginnings and our evolutionary beginnings. 'We have forgotten where we have come from,' she writes, but '[t]his is a double forgetting: of the elements through which all living things are born and live, a

cosmological element; and of the specific body, indeed a chain of bodies, from which we come, a genealogical or maternal element' (2). In fact, the debts to which Grosz alludes here are three: first, to our material constitution that we too often forget to acknowledge in our ontological musings, but without which we could not *be* at all; second, to the specific maternal individual body that gestates us, which was arguably the primary focus of Irigaray's descriptions in *Marine Lover* (see Chapter 2); but thirdly, to the evolutionary bodies beyond our specific maternal gestational habitat. Grosz does not mention water specifically, but we might think more about how water ties these debts together.¹⁰ We are of water, both in the constitutional sense and in the gestational sense, but the nature of gestation is now itself diffracted through the specific maternal body and the collective history of bodies in a watery 'politics of citation'.¹¹

Yet despite her attention to the implications of our forgetfulness, Grosz carefully avoids referring to these debts as *origins*. These debts are indeed 'where we have come from', they are 'chain[s] of bodies' and 'elements through which all living things are born and live', but they are not causes or prime movers. She notes, '[t]he origin [of species] can be nothing but difference!' (Grosz 2004: 21). She concludes this from a nuanced reading of *The Origin of Species*, where Darwin never posits what 'the' origin might be. Instead, he produces a theory of descent with modification that is not predicated on distinct groups or identities of species, but rather considers, as Grosz puts it, 'how any provisional unity and cohesion derives from the oscillations and vacillations of difference' (21). Difference itself can be the only basis for the production and proliferation of difference. Grosz (2004: 26) elaborates further:

Life 'began.' This origin, as much fable as strategic assumption, is not only obscure, conceivable only through abstract reconstruction or speculative genealogy, but is in a certain sense impossible to understand as a locatable or knowable entity, a definite point in time, a single chemical reaction, for it is an origin 'that is not one' that is always already implicated in multiplicity or difference, in a constellation of transformations, an event that imperceptibly affects everything.

The obscurity of these origins is like Irigaray's sea that we explored in Chapter 2, where it figured as an 'origin' whose depths cannot be definitively plumbed. Life's beginnings teem below the surface, but they cannot be pinpointed or

isolated. But Grosz's comments here also remind us that gestationality is also always an operator of difference: even the beginnings of life in a proverbial primordial soup require a differentiation—that is, some intensive shift in material choreography such that the limits of affectability of this water are dramatically altered. This 'origin', then, must have already been a multiplicity, which is Grosz's point.

Here we could revisit Deleuze's understanding of the larval subject which I briefly expounded in the previous chapter. In Deleuze's notion of embryology, he argues that the larval subject, or egg, holds an unknown latency – a potentiality for expression that may never be expressed. Of interest to us here is that for Deleuze (1994a: 118–119, 214–217, 248–250) embryology is overlaid with theories of embryogenesis and evolutionary biology (see also Deleuze and Guattari 1987: 46–47). Deleuze implicitly takes up biologist Ernst Haeckel's 1866 (long since debunked) claims that 'ontogeny recapitulates phylogeny'. In this theory that remained popular in evolutionary circles for decades, Haeckel asserted that the growth of a human embryo is a miniaturized mirroring of phylogeny. This supported a teleological version of evolution, whereby development from amoeba, to invertebrate, eventually to tetrapod human was the destined course of progress. Deleuze rejects this. For him, evolution does not move from a more general possibility to a less general realization, as in the undefined embryo that develops more individuality as it progresses, or the simple amoeba that accrues more advanced and individualized traits as it 'evolves up' through species. Instead, evolution unfolds from virtuality to actuality. The embryo 'lives the unliveable', in Deleuze's words; the embryo holds all the potentiality that would rip an adult apart.¹² In order to grow from larva to adult, the adult must select what it can withstand. In other words, the emergence of specific bodies is not a given, but rather an active result of the forces of selection and differentiation. This reading of evolution, like Grosz's, is arguably close to Darwin's own. Evolution, like embryology, does not map a predetermined course where the 'more evolved' species (or adults) simply add complexity on to the 'less evolved' ones (or larvae). Both map a process whereby one body gestates another, who selects (or is gifted) something from the virtual potentiality teeming below the surface of the gestational body's materiality, in movements of difference and repetition that have no determined origin. Even as Grosz and Deleuze (here)

focus on evolution by descent and natural selection, the origin of life is not a simple trickle to be tracked back to a clearly identifiable source.

The tree of life becomes even more obscured when we hack evolution in a lateral orientation. Cross mixings, lateral transfers, and symbiogenesis are a more direct concern for Deleuze and Guattari in *A Thousand Plateaus*, whose discussions of the orchid and wasp, and other lateral becomings, are widely known. These becomings are also at the core of Stefan Helmreich's (2009: 81) investigation into the dissolution of the tree of life, in the hot water of deep sea thermal vents. Contemporary microbiological studies of hyperthermophiles do not draw a clear line of descent at all, but instead reveal 'genetic trajectories pointing every which way'. In following these extremophiles, Helmreich discovers how 'lateral gene transfer in microbes places in jeopardy the vertical inheritance needed to root the tree of life' (87). Helmreich's focus is on how new paradigms of science – biogenetics, in this case – are finding new ways to break down life and build it up again, and what this might mean for how we understand kinship and ourselves (these ocean microbes, he concludes, are both 'a primordial version of ourselves' and also an 'alien' – an 'unfamiliar interloper'). But his other point is specifically about how lateral crossings disturb both linear genealogies and evolutionary timekeeping (105) – and, we should note, how these strange kinships are blooming in the sea. Below the surface, the origins of life are murkier than ever.

But even if life began in the sea, what happens to water as a gestational milieu, once we cross Zimmer's 'fatal boundary' that separates watery and terrestrial proclivities, divest ourselves of scales and fins, and learn to stand on our own two feet? Given this tendency to forget our watery beginnings, perhaps we need to pack a bag – a souvenir of sorts – and take it along for the ride.

Carrier bags and Hypersea

In 'The Carrier Bag Theory of Fiction', feminist writer Ursula LeGuin refers to Elizabeth Fisher's 1975 discussion of human evolution where she claims 'the earliest cultural inventions must have been a container to hold gathered products and some kind of sling or net carrier' (Fisher, quoted in LeGuin

1989: 166) – and not a sharp, pointy weapon, as the more popular story goes, at all. Carrying, in other words, is the first trick that we learned to do. For LeGuin, a key point here is that she can recognize herself in this story; in place of sagas of Man the Hunter, she finds a more capacious tale in which to root herself. It ‘grounds me, personally’, she writes, ‘in human culture in a way I never felt grounded before. So long as culture was explained as originating from and elaborating upon the use of long, hard objects for sticking, bashing and killing, I never thought that I had, or wanted, any particular share of it’ (167).

Again, it matters what stories we tell. Fisher and LeGuin’s story makes sense (‘If you haven’t got something to put it in, food will escape you’ [166]). It is also a more feminist origin story with no need for the biological essentialism of feminine docility (as LeGuin notes, she is often angry, and she’d happily club a hoodlum over the head with her handbag). For LeGuin, the point is that the carrier bag theory is more inclusive and does away with tired hero narratives. This in itself is a good reason to retell it (and, as we’ll see below, offering origin stories that start from the place of sexual difference can result in all kinds of productive work). But as LeGuin also notes, a carrier bag holds things, and more than that it ‘holds things in a particular, powerful relation to each other and us’ (169). This leads me to wonder: what if we push LeGuin’s tale even further? I suggest that we *ourselves*, as bodies of water, are also evolutionary carrier bags – facilitating the proliferation of the new by holding water and becoming literal gestational milieu for the other. What we hold is this potential for diffractive relationality.

The water that gave us life is also the water that we humans in turn carry with us, in us. We have literally incorporated this water, as Deleuze and Guattari remark in their epigraph above; the evolutionary emergence of terrestrial life depended upon this. Our own human bodies are approximately three-quarters water, but even life forms evolved to survive in the driest of conditions, such as desert plants, are still at least half soggy. Moving to a new terrestrial address meant that evolving life had to invent creative means for dealing with the threat of desiccation. One of these inventions was the amniotic egg, which kept amniote embryos perpetually in water thanks to their hard, calcium-rich shells. (This liquid insurance replaced the jelly encasing that surrounded fish and amphibian eggs, necessarily laid and gestated in a watery habitat in order

to survive.)¹³ Other innovations included the various salt and water uptake mechanisms that guaranteed sufficient quantities of both substances, for while aquatic animals were constantly immersed in water and appropriate amounts of saline, terrestrial animals had to actively seek these out. Such mechanisms range from the infiltration of the porous oral and anal surfaces of terrestrial woodlice (Little 1990: 204) to the dew-collecting innovations of a certain Namibian desert beetle who, when fogs are dense, scuttles to the top of a sand dune, stands with its head down and belly up, and drinks the water that condenses on and then flows down its body toward its mouth (205). Other specific innovations include the production of tough skin (to prevent excessive water loss), absorptive intestines (to allow water in), big lungs (to replace oxygen intake through water), and tears (to keep exposed eyes moist and allow vision to become acute) (Zimmer 1998: 109). All of these adaptations, of course, involve a negotiation of our bodies specifically in relation to their watery topography.

But a final innovation reveals the role of water in these adaptations as not only a tool for self-survival, but as a mechanism for the gestation and further proliferation of other life, too. This is what evolutionary scientists Mark and Dianna McMenamin call *Hypersea*, that is, the interconnected system of terrestrial life that has extended the sea and taken it along for the ride. The McMenamins (1994: 25) elaborate the fascinating process to which Deleuze and Guattari allude: 'The land biota represents not simply life from the sea, but a variation of the sea itself. Acting over evolutionary time as a rising tide, the land biota literally carries the sea and its distinctive solutes over the surface of the land, into some of the driest environments on Earth.' They elaborate: on land, the life sustenance that was passively accessible in a marine environment has to be actively facilitated through increasingly complex networks of microscopic organisms, fungi, and plants, as well as the animals – both human and otherwise – dependent on symbiosis, physical connection, and proximity. In *Hypersea*, life nests within other life on land like sets of Russian dolls. Or, one species visits another, bequeathing to it new species who seek out new routes of fluid fecundity in a novel other-species internal habitat. Without the sea to serve as a prime communicator and facilitator, life on land needed to chart its own watercourses – most available in the watery tissues and body fluids of other life forms.¹⁴ This is how we became carrier bags.

Hypersea can also serve as an example of the kind of lateral process of evolution that disturbs teleological views of evolution by filial descent. For example, arthropods (likely the first terrestrial animals) invited fungi and other microbes into their bellies to help them digest plant matter. As the McMenamins note, 'indeed, a large living millipede is a virtual walking ecosystem of gut-associated organisms', while 'such a level of gut diversity is unknown in the sea' (199). Or consider the case of the pentasome, an internal parasite of land vertebrates, with the following life story:

(Pentasomes) attach to the host tissue by a row of hooks on their heads and feed on the blood and tissue fluids in the lungs and air passages of the host. (...) Pentasomes typically have two hosts during their life cycles. Male and female pentasomes mate within the final (or definitive) hosts. Their eggs pass out through the host's saliva, mucus secretions, and feces; the eggs are eaten by intermediate hosts, which can be fish, amphibians, small reptiles, small mammals, or insects. Inside their intermediate hosts, the pentasome eggs hatch into four- to six-legged larvae. The larval form bores through the gut of the intermediate host and enters vital organs, where it feeds and grows. When the intermediate hosts (possibly weakened by the infection of the parasite) are captured and eaten by a predator, such as a snake, the predator becomes the final host. The young pentasomes attach to the nasal passages and lungs of the predator and complete their life cycle. (200–201)

While there is speculation about the precise evolutionary history of pentasomes, the McMenamins argue that the internal, watery habitat of land animals, and the network of direct physical connection that the pentasome was required to invent on land, ensured this particular species', and associated species', further terrestrial proliferation. As they put it, 'the body fluids of land vertebrates ended up serving as an evolutionarily important reservoir of Hypersea' that 'makes a significant contribution to the total species diversity of organisms on land' (McMenamin and McMenamin 1994: 204). In other words, in symbiotic evolutionary processes, water is essential not only for the ongoing sustenance of any organism but also as a conduit for life-in-the-plural.

This is another way of imagining Hypersea as the kind of posthuman gestationality we explored in Chapter 2. In Hypersea, not only does the water that comprises us extend in and through other beings, but this extension also

facilitates the gestation and proliferation of others – that is, we are carrier bags not only of our own ‘descendants’ in whom we may have a sovereign vested interest, but also for entirely different and ‘distant’ species. For example, it is quite likely that the Cretaceous dinosaur *Baryonyx walkeri* facilitated the proliferation of the pentasome parasite on land by ingesting, but not digesting, its marine-dwelling ancestor attached to the skin of the dinosaur’s fishy prey (McMenamin and McMenamin 1994: 209). The watery body of the dinosaur thus gestates an other life, *with which she has ostensibly nothing in common*. She gestates the differentiation not only of her own repeated, filiative offspring but also of an other body of water who will nonetheless carry traces of that dinosaur to its next host body.

Posthuman gestationality extends gestational relations beyond ‘growing a life’ within a human mammalian womb or other amnion to include a more general gifting of one’s own materiality in various ways, to different effects (not all of them happy, or innocent, to be sure). From the perspective of the dinosaur, we might refer to such relations as ‘parasitical’ (with all of the concomitant connotations). However, if we include the perspective of the pentasome, these relations are certainly gestational as well.¹⁵ These ‘webs of physical intimacy and fluid exchange’ are not exceptional; they are a dominant feature of land-based life (McMenamin and McMenamin 1994: 15–19). As the ephemeral containers and conduits of Hypersea, Le Guin’s carrier bags take shape as the bodies of terrestrial beings themselves.

Hypersea, like Helmreich’s stories of hyperthermophilic microbial beginnings, cautions us against blurring the specific maternal body of gestation too facilely into a gestational chain of bodies that is evenly selected and descended. Helmreich, we recall, even suggests that new stories of symbiogenesis and lateral gene transfer might ‘unsex’ our evolution stories altogether, leaving Mother Ocean to be swept away in an incoming tide of bioinformatics. Helmreich’s proposal makes once again visible the question of sexual difference, breathing just below the surface – especially as an enduring gendered imaginary of life’s beginnings also seems to persist, despite this potential ‘unsexing’. From the perspective of posthuman gestationality, however, the question here is not one of either keeping the maternal version of ‘sexed’ origins *or* flushing her away; it is rather one of thinking sex and reproduction differently. What if sexual difference in these evolutionary

tales did not begin and end in the sexual dimorphism of bodies? Sexual difference can be rather a way of figuring the promiscuous fecundity of water more generally. Here, gestationality is always bound up in differentiation and dependent on the interpermeation of watery bodies of different kinds.

Wet sex

In *The Nick of Time* (2004) and *Time Travels* (2005), Elizabeth Grosz seizes directly on the suggestion that sexual difference is necessary for the proliferation of life and claims that sexual difference is ontological – that is, sexual difference is not ‘a’ key force of differentiation, but is in fact the key force, and the irreducible condition for life. According to Grosz (2004: 31), ‘Darwin provides an ironic and indirect confirmation of the Irigarayan postulation of the irreducibility, indeed, ineliminability, of sexual difference [...] He makes sexual difference one of the ontological characteristics of life itself, not merely a detail, a feature that will pass.’ Grosz points out how, according to Darwin, sexual differentiation must have occurred before the intricate splitting of species into plants and animals and before there was much detailed differentiation between animal species. Hence the variation introduced with sexual differentiation is responsible for the subsequent explosion of different life. Like Deleuze’s explanation of the larval subject – the egg that holds an unknowable potential for proliferation and differentiation – Grosz’s reading of evolution emphasizes that the proliferation of life depends upon a sexual difference which is ‘incalculable’ (67). According to Grosz, this is a ‘difference which, in the future, will have been expressed, will have articulated itself’ (67). At the same time (like Irigaray), she insists that this difference is one of ‘two nonreducible forms’ and makes repeated references to ‘bifurcation’ and ‘dimorphism.’¹⁶

Grosz’s insistence on two forms raises many of the same questions that Irigaray’s writings on sexuate difference raises (see Chapter 2). Why only two? Why this clinging to a presumed cis-gendered dimorphism, when bodies clearly live and proliferate in other forms and serve as carrier bags of new and futures kinds of life all the same? Or, put otherwise: why insist on such a reductive understanding of *actualized* sexual difference and mechanisms

of sexual reproduction? While bearing these critiques in mind, there is still something immensely (and even contradictorily) valuable in Grosz's reading of Darwinian sexual difference. For Grosz (2004: 69), sexual difference is an incalculable engine of the new, but one which produces difference that still carries a debt to the bodies that gestate it: '[Sexual selection] is a mechanism that ensures exponentially increasing variability, that necessitates that the heritable structure from each individual is different from that of each of its parents while in some respects resembling them both'. Those resemblances play out here as a watery feminist politics of citation, burrowed in the watery flesh of the yet-to-come. This is a sexual difference that requires difference itself as an engine – but even in Grosz's reading of Darwin we see that this does not *necessarily* require a masculine/feminine dimorphism. For example, Grosz also acknowledges that 'sexual division, with its correspondingly different reproductive capacities and morphological variations, entails potentially ever more divergent morphological structures' (Grosz 2004: 70). Grosz doesn't really emphasize what I read as the most exciting implication of her reading of Darwin: if sexual dimorphism burst onto the evolutionary scene as an ingenious way of proliferating life, there is nothing to prevent further mechanisms for expressing sexual difference from likewise emerging.¹⁷ Pointing to this unknown future of sexual difference does not deny the role of sexual dimorphism as an important moment in the proliferation of life; it rather stresses that this dimorphism is an already actualized expression of sexual difference. As Grosz (2005: 67) also insists, sexual difference will not go away, but that doesn't mean it will stay this same; it will likely be complexified, elaborated, and developed further.

And of course, in many ways, that future has always already been here. In *Evolution's Rainbow*, evolutionary biologist Joan Roughgarden (2004) produces an impressive catalogue of the ways in which the existence of species in 'two nonreducible sexually reproducing forms', as Grosz puts it, is complicated. While sexual reproduction (compared to budding, fragmentation and parthenogenesis) produces a 'more balanced portfolio of genes' for better long-term survival (Roughgarden 5), even sexual reproduction is far from Boolean. Sex – that is, gamete size – may be mostly binaristic among sexually reproducing species, but there is no corresponding binary in body type, behaviour, and life story (26). Instead, we find various mechanisms

for gestating and proliferating life and expressing sexual difference – little of which is particularly neatly binaristic. This includes: all-female species; species with two kinds of females; bodies that change from male to female, or are both, at different times in life; males that gestate eggs and bring offspring into the world; no chromosome difference between males and females; blurred female and male morphologies, or multiple males where one more closely resembles the female; females with phalluses and males with milk-producing mammary glands; and sexual power and dominant behaviours all over the sexually different map. Myra Hird (2004: 85–86), among others, has queered the sexuality of life more radically still, reminding us that most reproduction, in most species, has nothing to do with sex. And, as she has famously underlined, *Schizophyllum* fungi have more than 28,000 sexes (86)! For Hird (2004: 40), troubling our binaristic understandings of ‘normal’ sex is also about cross-species sexuality: sexual behaviour between flowers and various insects is so common, she notes, that it rarely even recognized as a queerly trans kind of sex.

Again, the point here is *not* to insist that these complex expressions are all necessarily appropriate for humans. Many, of course, are – but the point is rather that sexual difference is neither simply nor fully knowable, but rather open to new possibilities and recombinations. Evolution is one way in which this sexual difference is materialized. Evolution stories remind us that sexual difference as incalculable is not a culturally constructed queer utopia, but the very matter of the world we live in and as. As Roughgarden (2004: 18) notes, the purpose of sexual difference is probably not reproduction as such, since asexual species are perfectly capable of reproducing. Sexual reproduction is an engine of life because it generates increasingly greater diversity in species, and diversity is itself life-proliferating – but importantly, we do not know what life, or evolution, has in store for our future. The morphologies, behaviours, and stories attached to sexual difference will remain open.

But something else curious is going on here – and here, we finally return to the encounter that Zimmer sets up for this at the opening of this chapter. Let’s take the dolphin that Zimmer encounters in his underwater meeting. According to common biology, ‘male’ dolphins and whales are described as having no external genitals, but rather a pair of testes located within their body cavity. The penis is found in a ‘genital slit’ that (unless erect) is

covered by flaps, and male cetaceans have no scrotum (Roughgarden 2004: 40). The purpose for this architecture is hydrodynamic streamlining, but it also demands an innovative circulatory rerouting to keep the gonads cool enough to remain fertile (Zimmer 1998: 123). Roughgarden notes, however, that the rechoreographies required to maintain this genital architecture, although 'normal' in dolphins, would be considered a very exceptional intersex morphology in humans. Or let's take barnacles. Elizabeth A. Wilson (2002) recounts how it took Darwin years to puzzle out the complex sexuality of these specimens. While usually hermaphroditic, Darwin discovered some separately sexed species but where the female animals also harboured tiny 'complementary males' living on their bodies – something Darwin initially thought were parasites, but comes instead to describe charmingly (if somewhat heteronormatively) as the female having 'little husbands' in her 'two little pockets' (Darwin, quoted in Wilson 2002: 284) – or carrier bags, we might say! This is just a snippet of the complicated story of barnacle sex and gender that Darwin, and Wilson drawing on his work, tell. Oysters? Eva Hayward (2012) points out that they change sex up to four times a year. Sea squirts? Similarly queer. In some colony-forming species, fertilization takes place inside an individual ascidian, 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 (Neimanis 2011). Starfish, in Hayward's (2008) moving tribute, exhibit a trans-speciation whereby we can understand regeneration as a kind of transsex.

In other words, all of these animals are fascinatingly and 'naturally' queer. It is not only this gender-and-sex queerness that I'm intrigued by, though – for the more we look, the more we find that queer is the new (and old) norm. The question that stands out for me is rather, *does it matter that these bodies are bodies of water, and in water too?* Roughgarden (2004: 30–31) expands this queer aquatic menagerie: she notes that many variations on hermaphroditism are found in the oceans, among fish, marine mammals, and other sea life. Most marine invertebrates are hermaphroditic, as are a large proportion of coral reef fish, including most species of wrasses, parrot fish, and large groupers, and some species of damselfish, angelfish, gobies, porgies, emperors, soapfishes, dottybacks, moray eels, and various deep-sea fish as well. Many of these fish oscillate between male and female, or they

may be male and female simultaneously (31–35). For Roughgarden – and importantly for the story I’m telling here – this is not evidence of a more ‘primitive’ sexuality in ‘less-developed’ species. Going back to the dolphin, Roughgarden wonders if ‘perhaps cetaceans are on their evolutionary way to the state that hermaphroditic fish have already attained’ (41). Or, we could say: not evolution, but revolution! She also notes that examples of sex role complexity are often found in the sea: the female seahorse who places her eggs in the male seahorse’s pouch; the male who then gestates and ‘delivers’ the young (45). Many other marine species display various forms of parental care of embryos, such as watching over and nourishing eggs on a sea floor or lake bottom, or even storing eggs in their cheeks (45). We can find such examples among terrestrial species too, but genderqueer lives are particularly abundant in the water. Might we then wonder, along with Roughgarden, what it is about *aquatic environments* that is so accommodating – and even facilitative of – diverse actualizations of sexual difference?

Roughgarden does not offer an answer to this question, and the connection that I’m picking up on here remains speculative. I’m brought back to the difference that Zimmer announces in claiming a fatal boundary between those bodies that are at home in water and those that are not, but I’m also reminded of Deleuze (1994a: 118) who remarks that ‘evolution does not take place in the open air’. For the egg or the larva, water is facilitative not only as an intensive morphogenetic element within bodies but also as an extensive or external force that creates for bodies certain possibilities for life. In the case of the queer aquatic bestiary gathering above, perhaps the great diversity of sexual difference there indexes a gestational possibility, an unknowable not-yet, teeming below the surface. Again, there is great diversity of sexual difference on dry land, but the overwhelming examples of aquatic queerness make the question one worth pondering.

Or, we could wonder, again along with Roughgarden, about the ways in which these animals might give us an inkling of sexual difference still-unfolding and yet-to-come, or along with Hayward, about the ways in which these animals can teach us to understand sexuality and our embodiment thereof in less rigid ways – even, I would offer, as a testament to our own potentialities, folded within the actuality of our bodies as echoes of these aquatic kin. But the idea that sexual difference might *become differently* in

the water suggests something else as well – bringing us back to Zimmer’s underwater encounter with which this chapter began. ‘Breathing’ water is but one example of an impossible torsion that is marked by how a body is not only *of* water but *in* water. What a terrestrial, aquatic (or amphibian) body can do, and can withstand, also depends on one’s relation to water as an enduring habitat, home, or environment.¹⁸ Our being in water, we could say, is a specific, embodied, situated knowledge (Haraway 1988). The surface of the water and the water’s edge are both membranes of differentiation, with their own kind of membrane logic. Thinking with this ecotone, we discover that water is also a limit at which a commonplace understanding of evolutionary temporality is torqued; progress is not a linear movement ‘out of’ the seas. As Roughgarden and Hayward suggest, and as we are about to explore in more detail, evolution can also be a past anticipated, a future remembered.

Waters remembered (moving below the surface)

Returning to the sea can also be an expression of untimely love. In Italo Calvino’s story ‘The Aquatic Uncle’, N’ba N’ga is the paternal uncle of the protagonist Qfwfq (himself a time-and-space-travelling narrator, who has lived and seen it all – all the way back to when the Moon was only a climb-up-the-stepladder away). The story of N’ba N’ga comes up when ‘it was clear that the water period was coming to end’, and Qfwfq recounts what was gained and what was lost in this terrestrial transition. While the mass migration to dry land was excitedly underway, Qfwfq tells of his embarrassing uncle N’ba N’ga (a lobefish, from the extinct species of *Coelacanthus*), who refuses to let go of the ocean, or even contemplate that things might be better on dry land. He insists on staying mired in the ecotonal muck, has a penchant for nonsensical fishy proverbs, and can only measure the world through the logic of water columns and currents. Hypersea was clearly not on his radar. As Qfwfq puts it, ‘it just wasn’t possible to make him accept a reality different from his own’. The mortification Qfwfq experiences, though, is not only that his uncle is out of step with the terrestrial zeitgeist; worse than that, N’ba N’ga lures Qfwfq’s fiancée, Lll, back into the water: they fall in love, and she relearns to swim.

We already noted that Ernst Haeckel got it wrong. Ontogeny, as a rule, does not recapitulate phylogeny, nor is the reverse true. Citing fish as a particularly telling example, phenomenologist Merleau-Ponty (2003: 260) reminds us that ‘we do not find either less numerous or simpler types by going back in the history of the earth’. When Lll rejects Qfwfq in order to join N’ba N’ga in his aquatic life, this is not a ‘regression’ as in some kind of progress thwarted, or a reversal of evolutionary teleology. Just as water, in its multivalent hydrological cyclings of difference and repetition, thwarts easy geographies of local and global, so too do our watery evolution stories disturb a clean linearity of forward and back. Even if we often frame stories like Lll’s as a ‘return’, Lll doesn’t regress. She rather selects another possibility, reopened. The humble sea squirt (already noted above for its wild sex life) also provides a good disclaimer against phylogenetic ‘progress’ ostensibly mirrored in the unfolding of a single animal: while its newborns are vertebrate, this ascidian reabsorbs its rocky spine somewhere along the path to maturity. Like those rarest of rivers, repetition flows both ways. Here, ‘progress’ is like a strange kind of amnesiac repetition – repetition as 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? Perhaps. Chordate futurity digesting in the body, waiting to be selected. Past and future collide and switch.

Yet, despite Haeckel’s technical missing-the-mark, I can understand where he’s coming from. After all, what expectant human mother has not at some point imagined her foetus as tadpole, all fish eyes and fins, pre-amphibious, somersaulting its way through her amniotic seas? 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... Perhaps the watery bodies we gather in our carrier bags are also memories of a could-have-been and traces of futures not yet lived.

Lest these rememberings all sound a bit too precious, we could also call on the work of Sandor Ferenczi, erstwhile student and pen pal of Sigmund Freud. In a theory that he reluctantly published only late in life, Ferenczi 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 drying up of the seas, a loss we tetrapods have shouldered for millennia. Countless

tales from patients of fishy dreams, watery trauma, and briny passions¹⁹ lead Ferenczi (2005: 45) to wonder:

What if the entire intrauterine existence of higher mammals were only a replica of the type of existence which characterized that aboriginal piscine period, and birth itself nothing but a recapitulation on the part of the individual of the great catastrophe which at the time of the recession of the ocean forced so many animals, and certainly our own animal ancestors, to adapt themselves to a land existence, above all to renounce gill-breathing and provide themselves with organs for the respiration of air?

Our traumas are personal, says Ferenczi, but they are also phylogenetic – even geological, we could add. As Ferenczi aimed to clarify in his Thalassal proposition, our bodies harbour the memory of the terrestrial invasion, and a forsaking of the sea. The penis in the vagina,²⁰ the foetus in the uterus, the fish in the water – in these various watery embraces, Ferenczi postulates a shared symbolism that is more than semiotics. It is an embodied collective memory and a ‘phylogenetic recognition of our descent from aquatic vertebrates’ (1968: 45). Desire, loss, sociality, grief – these phenomena are biological as much as they are psychological or cultural. Ferenczi (perhaps also remembering a future still-to-come) called this a matter of the biological unconscious.²¹

Freud, apparently, was not impressed. And to add scientific insult to psychoanalytic injury, Ferenczi’s theories were based in part on Haeckel’s findings – which we know have been established as flawed. But just because evolution did not necessarily unfold from (less-developed) fish fry to the (more sophisticated) biped, the idea of watery return isn’t fully washed away. The fossil record itself gives us another story of watery return in the forsaking of dry land by cetaceans. These marine mammals – whales, dolphins, porpoises – are certainly not fish, but this is the whole point of their story. Cetaceans both leave the sea and return there, queerly suturing fishy past and watery future together. Thinking about them as part of our own ‘fishy beginnings’ helps us imagine how our own bodies harbour not only watery traces of evolutionary pasts but also the latent watery potential of evolutionary futures not chosen.

When Darwin was writing his theories of evolution, the origin stories of whales were something of a mystery, although he did muse that a ‘race of

bears' could have conceivably evolved into whales. While his speculations were for the most part laughed right out of subsequent printings of *On the Origin of Species* (Zimmer 1998: 144–145), we now think that Darwin's suggestion was not as ludicrous as it once sounded. As one story tells it, whales are likely descended from a common terrestrial tetrapod ancestor known as the *Mesonychid*: a meat-eating wolf-like ungulate that lived about 65 million years ago. But as Zimmer notes, Mesonychids were slightly 'anatomically confused', given their environment, diet, and job in life. They had a taste for meat, but their stiff back did not let them run down prey. Instead they likely scavenged the bones of others' kills, or snapped with their snouts at turtles and the odd fish in the shallows near their homes. As a result, they soon developed rudimentary swimming abilities, and better teeth for hooking their aquatic prey.

A more recent story provides a slight variation: The closest known terrestrial relative to the whale was *Indohyus*, a fox-sized deer-like land mammal that did not like meat at all, and rather spent long amounts of time in the water in order to avoid becoming someone else's dinner. Eventually, with not a lot of other choice at hand, *Indohyus* developed a taste for fish, and for a more aquatic lifestyle all around (Briggs 2007). In either case, these land-dwellers eventually learned to swim deeper, their legs grew shorter, their feet grew webbing, and they became part of a genealogy of whales. Each of these earliest whales – *Pakicetus*, *Ambulocetus*, *Rodhocetus*, *Takracetus*, *Gaviocetus*, *Dalanistes* – honed its own specialities. Walking and swimming whales lived side by side. Some persevered in time, some did not, for reasons which are not altogether clear (recalling that descent is not teleological, or singly-purposed, and is interrupted by all sorts of unpredictabilities). The walkers died out, and by about 40 million years ago, whales were thriving without any terrestrial outcrop to cling to. They had officially changed their mailing address.

While commonplace evolution stories associate us hominids most closely with our primate kin, we also share considerable bodily connectivity to whales and other cetaceans. We both have lungs that breathe air, and giant brains wrinkled with neocortex. We both function best when our bodies are about 98 degrees Fahrenheit. We both survived infancy on a diet of our mothers' milk. 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. We are both

social animals. We both gestate our babies within our own watery wombs, and then spend inordinate amounts of time training our young for life without us. In terms of what humans consider smarts, the Brazilian river dolphin leads the cetacean pod as our closest runner-up, with other primates an only somewhat distant second.²²

As a partial explanation of these affinities, in the 1960s Sir Alister Hardy speculated about the existence of hydrophilic apes as an element of human evolution. This theory was subsequently picked up by Elaine Morgan (1972, 1982) and developed into the so-called 'Aquatic Ape theory'. As Morgan suggests, the siren song that beckoned the great whale's return to the sea could be understood as one of our evolutionary paths not taken. Most commonly accepted theories of human evolution revolve around something called the 'Savannah theory', whereby forest-dwelling apes literally came down from the trees due to major climatic changes that resulted in the dwindling of the massive African forests. On the propagating savannah, where a vegetarian diet was more difficult to accommodate, these apes become plains-dwelling hunters. They learned to run on two legs and use tools or weapons. They eventually became 'Man'. Morgan, however, was sceptical of this theory for more reasons than one. Not least by considering more carefully the place of females in the descent from ape to hominid, Morgan began to develop her own evolution story, suggesting that something else needed to explain the differences between humans and existing apes, which seemed strange, given our exceptionally close genetic alliances as primates. These differences include structural differences in our skeletons, muscles, skin, and brains; differences in posture and locomotion; differences in social organization; and differences in capacity for speech and intellect. Other not easily explained human departures from our primate kin include a naked foetus, a hairless human adult (who nonetheless maintains a strange wealth of head hair), large deposits of subcutaneous fat, and notably, innate diving reflexes and swimming infants. None of these traits is very ape-like.

So Morgan's story goes like this: during a gap in the human history fossil record, large swathes of the African continent were flooded by seas. During this time, some apes did indeed come down from the trees and became not hunters of the savannah, but semi-aquatic coastal dwellers. They spent their days diving and swimming, and living along the pebbly shores of these vast

bodies of water. Later, when the seas receded, they returned to their former terrestrial address, but remarkably changed for the experience. Perhaps this ape lost its hair, because like the whale, she needed to stay warm in the water, and thus opted instead for a nice cushion of subcutaneous insulation. Perhaps she nonetheless held on to her abundant tresses (allowing her hair to grow thicker during pregnancy) so that her infant would have somewhere to cling while they paddled about together in the sea. Perhaps in water, where scent signals lose their usefulness and subtle visual cues are obscured, this ape needed to find her voice. Perhaps while navigating the seas she developed her fine sense of balance in an upright, bipedal position. Perhaps this predilection to stand on her own two feet came instinctively when she first waded, tentatively, into an increasing deep.

Because of the fossil record gap, neither the Aquatic Ape theory nor the Savannah theory can be irrefutably proven. Morgan maintains that the Aquatic Ape theory simply makes more sense. It requires fewer stretches of the imagination, fewer instances of convoluted logic. While her theories (not unlike Darwin's 'race of bears') were initially the subject of considerable scorn within the scientific community, more recently evolutionary biologists have returned to the Aquatic Ape theory with keen interest (while others, of course, remain fervent detractors).²³ But in many ways the *definitive truth* of the story is not really the point – we've already established that origin stories are necessarily a muddle, more or less. I'm interested instead in the Aquatic Ape's plausibility, and its allure. What is it about Morgan's version that calls to us, that asks the echoes in our salty tear ducts, or our watery wombs, to respond?

Ursula LeGuin responded to Elizabeth Fisher's carrier bag theory of evolution because she could see herself in it. We could say the same for Morgan's. It too is a feminist evolutionary tale, where gestating bodies and sexual difference are foregrounded. The lack of widespread uptake of her theories must be filtered through Morgan's (deemed inadequate) credentials as a journalist and housewife, rather than a lab-coated 'serious' scientist. If we take Donna Haraway's (1988) important claims for feminist objectivity seriously, then Morgan's situated knowledge makes her story most plausible, and certainly most interesting: it is a story that comes from somewhere, grounded in embodied knowledge of the world. In this framework, the

Descent of Woman (Morgan 1972) might reverberate through and transform our stories of the *Descent of Man* (Darwin 1988 [1871]).

There is also a more embodied empathy that we might feel with Morgan's story. Perhaps we experience our contemporary bulkiness and the cumbersome lumbering of dragging all this flesh around behind us, as a biological or phylogenetic memory, as Ferenczi would say. Our buoyancies constantly thwarted, dry land proved too unbearable for some, and not at all what it was cracked up to be. Some of us – whales, dolphins, porpoises – mutated into a cetaceous state. Even if it meant holding our breath for hours, for days, we would learn these tricks. Anything to return to our fishy beginnings. Our now-human bodies carry this echo of a watery return not chosen, a path back to the sea not taken. Isn't this what our human mammalian diving reflex, or a newborn infant's instinctual capacity to swim, in some ways demonstrates?

Put otherwise, even if becoming cetacean may not be ontogeny recapitulating phylogeny (or vice versa), I'm still intrigued by the power of a 'wrong theory'. The endurance of Haeckel's idea that our bodies are compelled to remember the sea suggests there is some plausibility to his postulations – and to Ferenczi's recapitulation of them. Like the mutual imbrication of psyche and soma that Ferenczi describes as 'amphimixis', our aquatic embodiment might be similarly amphimixic – an inextricable mutuality of organic memory, bodily capacity, and amplified imagination. When we start attuning to our own fishiness, our own cetacean almost-ancestry, and maybe amplify it through evolution stories like these, Ferenczi's suggestion that our organs remember, that our bodies are archives of deep times and tangled genealogies, does not seem that strange.

For aren't these ideas, at some level, 'verifiable' through a close attunement to the way we move, the way we love, the repetition of our animal and elemental others in us – gathered, and repeated differently? Our human bodies 'are coral reefs full of polyps, sponges, gorgonians, and free-swimming macrophages continually stirred by monsoon climates of moist air, blood, and biles,' suggests Alphonso Lingis (2000: 28). Or in the words of feminist philosophers Hélène Cixous and Catherine Clément (1986: 88, see also Chapter 2) (remembering the gestational logic that connects the French homonyms 'mer' and 'mère'): 'we ourselves are sea, sands, corals, seaweeds, beaches, tides, swimmers,

children, waves ... seas and mothers'. While the language these philosophers use takes part of its power from metaphor – recall Suzuki's equation of our blood to seawater in one of the epigraphs to this chapter – neither description is *mere* metaphor. If it is a metaphor, this metaphor is only effective because it calls out a material resonance within us with that experience. We could say: *these are waters, remembered*. If we were not somehow materially in contact with these experiences, the metaphor would hold no sway. We verify this bodily empathy because our own embodiment soaks up and holds traces of our watery bodies' deep potentialities (their would-have-beens; their might-still-becomes) within us, tucked away in/as our carrier bags. This is evolution! We are materially connected to these watery pasts, even though these larvae differ from us in kind.

As with Irigaray above, Lingis does not imagine our animality as separate from our elementality. A transcorporeal connectedness between these realms insistently reverberates through Lingis's posthuman phenomenologies of embodiment. Our bodies as corals and polyps converge with our affective bodies and our motor bodies; in both cases we learn to feel and move by drawing on the echoes of other animals in our own flesh: 'It is when we see [...] the mother elephant carrying her calf in grief for three days that we believe in the reality of maternal love' (Lingis 2000: 36); we ebb and flow with the rhythms and speeds of animal movements, which in turn initiate our own movements as 'our legs plod with elephantine torpor', or 'as our hands swing with penguin vivacity, our fingers drum with nuthatch insistence' (29). In sex, 'our muscular and vertebrate bodies transubstantiate into ooze, slime, mammalian sweat, and reptilian secretions, into minute tadpoles and releases of hot moist breath nourishing the floating microorganisms of the night air' (38). Our watery bodies can serve as the soupy gestational matter for our material passions and can invite a mingling of these passions in such a way that the discreteness of our individualized bodies begins to dissolve. While we can leak beyond the boundaries of our molar bodies, this transubstantiation of bodies into viscous ooze is also a marker of the mingling of our bodies with those potential bodies of water that we have incorporated – those fishy, watery beginnings that we carry with us as material, vestigial potentiality.

Our emotions and our movements are a response to the animal, vegetable, meteorological emotions and movements of which we are a part. In phenomenological terms, both human and other animal beings are variant 'folds within the world's flesh' (Toadvine 2007: 52), but these bodies are not affectively separate from the environmental and elemental milieus which they also gather and repeat, differently – for Lingis (2000: 28), 'the pulses of solar energy momentarily held and refracted in our crystalline cells' and 'the microorganic movements and intensities in the currents of our inner coral reefs'. These echoes are offered again not as metaphor, nor as scientific reduction, nor as 'mere' speculation, but rather as a modality of our lived embodiment. Lingis's phenomenology stresses that these echoes are the amplification of the potential we already hold, as elemental and animal bodies, gathering up and repeating their tangled pasts. Perhaps this is an extended kind of echolocation, across scrambled genealogies and symbiotic generations.

Unknowability as planetarity (or, becoming the water that we cannot become)

So what does it mean to remember our fishy beginnings? You might find yourself sinking, a bit breathless, in this undertow of affect and memory, of science and fable, of gut feelings and fossil records, motor-body archives, and a biological psyche. But isn't this what a posthuman feminist phenomenology of our watery bodies can do? In imagining ourselves as extended across space and time, but also suspended between ostensible fact and so-called fiction, this kind of phenomenology draws on all of our sensory apparatuses to find different kinds of stories to tell.

A posthuman feminist phenomenology, though, is also attuned to the limits of our stories, where stories dissolve beyond our capacities to tell them, even as we still gather them in our various carrier bags. I've suggested that being in water is a situated knowledge. Water in this sense has something to teach us about knowledge, and the incitement to know.

Let's go back to Lingis briefly, who, like Zimmer in the opening pages of this chapter, and like Ferenczi and Morgan and even old N'ba N'ga, is curious

about what happens in our sloshy transition between water and air, or from land back to sea – over the span of millennia, or in the space of a single encounter. Contemplating the cetacean return to the sea, Lingis (2000: 32) notes ‘the tedium of the bodies we had to evolve when we left the ocean’:

A hundred seventy pounds, of salty brine mostly, in an unshapely sack of skin: what a clumsy weight to have to transport out on bony legs! [...] When we return to the ocean, we have to pull a layer of rubber skin over our bodies, strap on a buoyancy compensator, an air tank with regulator and gauges, weight belt, eye mask, and flippers. And then how ludicrous we look when we lurch our bodies equipped with all these prosthetic organs out of the dive shop and wade with flippered feet across the beach till we reach deep water! In the deep, all these supplementary organs make our species-organs non-functional.

We find an empathy with our strange kin in and through our embodied difference – we can ‘certainly understand the dolphins and the whales’, writes Lingis (2000: 32), in their decision to forgo a terrestrial existence. Yet while our different capacities in relation to a watery topography do not impermeably contain us in discrete isolation from one another, they do inaugurate a border beyond which travelling proves fatal. We know that in becoming-animal, to destratify too far results only in annihilation (Deleuze and Guattari 1987: 270).

‘A whale out of water’, writes Jacques Cousteau (1972: 47), ‘even though it is an air breather, dies very quickly. Despite its incredible power, it simply does not have sufficient strength to breathe in the open air’. The pioneering oceanographer further explains:

A whale aground in the open air [...], is condemned to death. He has not the strength, nor the limbs, to regain the life-giving water. He smothers; and it is his very size and mass that kills him. All of his power, great though it is, is not sufficient to fill his lungs, to move the tons of blubber that cover his body. And he dies of asphyxiation. (44–45)

Or in the words of Rebecca Giggs (2015), witnessing the slow death of a stranded humpback on a beach in Western Australia, ‘in the ocean its blubber fat insulates the whale and allows the animal to maintain a constant inner temperature. Out of the ocean, the blubber smothers it ... Though we

were now shivering, the whale – only metres away – was boiling alive in the kettle of itself.’

Despite all of the ways in which we humans feel a deep affinity for water and our own cetaceous or fishy beginnings (and no less depend on water for life), for our terrestrial bodies the ‘borders of the liveable,’ as Deleuze would say, begin at the water’s edge. For our strange cetacean kin, this is also where they end – perhaps like this, on a beach, too large to euthanize in any kind of conventional manner, too expensive to blow up with dynamite (Giggs 2015). For our cetaceous kin, the open air means a demise of inevitable suffering.

Water, as a larger geographical body, situates animal bodies of water in different ways, calling out our specifically differentiated capacities and challenging our deficiencies. This membrane of differentiation does not cancel out our interpermeation in one another’s bodies: we only experience the awkward inappropriateness of our human organs for the watery deep because enfolded in our own materiality is the remembered potential to breathe only intermittently, to dive to unimaginable depths, to communicate wordlessly through echoes with our kin, wandering as an ‘overlapping network linked through a transparent ocean.’²⁴ Yet we also ultimately encounter the question of what is liveable. Different bodies (human, sunflower, toad, jellyfish) express varying abilities to live *in* water and *with* water. In other words, bodies are oriented in and towards water in species- or being-specific ways; humans, it follows, are situated in relation to water in a very human-specific way. This human specificity certainly differs from that of fish, but also from that of other mammals. For example, while our kinship with air-breathing whales is expressed in manifold ways, we eventually have to let go of the dorsal fin: the whale will always outswim us, while our own lungs inevitably give out. Our strange cetacean kin can dive to depths our own bodies could not fathom.

And our capacity to withstand life in the water involves more than morphology. As Zimmer notes, we still have hardly any idea of what cetacean intelligence means, or of what their brain-bodies are capable. Dolphins, for example, in their watery world, where everything touches everything, most likely experience themselves ‘in’ their bodies in a way altogether foreign to us. In their communication through echolocation visions, their interior and exterior worlds begin to blur, and ‘our notion of self would be entirely meaningless to them’ (Zimmer 1998: 134). We do not think that baleen whales

can echolocate, but we have no idea what they might perceive or how they might engage their bodies in relations of intercorporeality (Zimmer 1998: 134). Cousteau (1972: 128), too, notes that there is so much about cetaceans' tactile sense about which we know almost nothing; their sensory life is undoubtedly complex, but we have barely scratched its surface. While ethological sciences continue to expand their knowledge base, we might consider the limits as well as the rewards of these pursuits.

The seas are teeming with events that humans will only ever glimpse. Any body's orientation to water as material substance, and as geographical location, serves as a *limit* that determines which milieus are habitable, withstand-able, and thus knowable. Water remains one step ahead of, and beyond, the limits of any body (regardless of their watery orientation). In this way (and in resonance with other feminist epistemological projects of situated knowledges), the grammar of water necessarily rejects total knowledge by *any* body. Because each body has a different relation to water *as a matter of survival*, no body can do what Donna Haraway calls 'the God Trick'. No body can ever fully know water. Even the most sophisticated deepwater submersibles and assisted breathing apparatuses will only ever take us so far, for so long. We humans can only be fully immersed in water as a temporary gesture – just as other species will never stand at the water's edge, contemplating its depths, nor experience the water's 10 degree fingers still crawling under warm-blooded skin after an early Spring dip off the dock clothed the lake's dawn breath. Our different embodied orientations to water tell us something about our varying capacities to *know* water. For me, this also underlines questions of incursion, hubris, and humility, as something water can teach us about difference, and knowledge.

It seems I have introduced a paradox. On the one hand, I passionately argue for a shared aqueous kinship between all bodies of water. It is this embodiment-in-common, I suggest, that can help us understand ourselves as bodies of water as meaningfully (ethically, politically) implicated in other bodies of water into and out of whom we flow. Within and as the hydrological cycles that animate this planet, our embodied watery debts are multiple and diffuse, as too are our gifts (poisonous or otherwise) to our watery others. At the same time, I've suggested that our situatedness as specific bodies means that there are depths that we cannot plumb. So, even if evolution stories amplify the ways in which

our bodies of water are indebted to bodies that precede us, we must still give up the illusion of transparent filiation.

The paradox in mapping these chains of watery connections is thus also a risk. We return to the conundrum of difference in the hydrocommons, a key question that animates each of this book's chapters in its own way. In acknowledging our commonality, we risk succumbing to the idea that our embodied debts are fully knowable. Surely, if we are all bodies of water then your water is also, somehow, mine. So the logic would go: We are all part of the same big happy family tree, and we all know each others' secrets. Difference here is familiarized. It would become a problem that is 'solvable', something that can be assimilated. If the unknown creeps in at all, we get the feeling that our problem, if we have one, is simply lack of information: *we just don't know enough, or enough yet*. In other words, one could suggest that the only thing at stake here is the difference between ontological assertion (we are all connected...) and epistemological limit (...even if we can't humanly grasp, or know, the depth of those connections). But this is a false solution. It still holds out hope for mastery: *if only we could just know more deeply, more fully, more masterfully*... the problem would go away. All of the watery world would be at our fingertips – held tightly, securely, in our waterproof bags.

The danger doesn't stop there. While commonality risks the notion of subsumability, relegating the ocean to the zones of 'here be dragons' suggests another risk, too – one we might refer to as an oceanic Orientalism. As Stefan Helmreich (2009) describes, this is the kind of unknowability that was revived with the discovery of hyperthermophiles living (and thriving) in the dark abyss of deep sea vents. This is the unknowability of the 'Dark Continent' where the unknown swims within a colonial imaginary of the savage in the shadow realm. Helmreich quotes *New York Times* writer William Boyd, who speaks of the eerie wonder we must now feel, realizing that 'we and all the other light-eaters of Earth shared our planet with an alien horde that thrived in total darkness' (Broad, quoted in Helmreich 2009: 75). As Helmreich points out, this horde-speak harkens back to nineteenth-century descriptions of colonized peoples (in the words of social evolutionist Lewis Henry Morgan) as a 'promiscuous horde'. According to Helmreich, 'the alien of the alien ocean is sometimes figured as a primitive other, marked as such through the trope of darkness, a figure that both suggests an absence of enlightenment and calls up

the fearsome and fascinating dark bodies of racist discourse' (76). Here we see how racialized fear trades off with the maternal abyss, the feminine Other, even the Vagina Dentata of fearful watery phantasy.

I am not interested in an unknowability that shadows knowledge of a colonized other, or a dangerous feminine one either, but rather an unknowability that we can learn from thinking with difference. Foucault has written of the uncanniness of places as heterotopias; theorist of architectures and watery places, Cecilia Chen (2013), has helpfully drawn on Foucault to understand water as a non-place, as a place both comfortable and unfamiliar, as a place that can become uncanny and transformed through upheavals (Chen gives the example of a major oil spill). Chen here, too, talks about waters as 'places at the thresholds of experience and comprehensibility' (282) where the meaning of waters is neither steady, nor uniform, nor easily mapped. Feminist cultural theorist Elspeth Probyn (2013: 10), too, has drawn on Foucault's 'Other Spaces' to describe how we might map an oceanic world of tuna: 'this is a heterotopic geography', she writes, produced from and constitutive of a set of irreducible relations. These reminders of the unevenness of a wet epistemology – its palimpsestic superimpositions; its scrambling of simple coordination between the local and the global; its knowability quickly caught up in an undertow of change – help us foreground the way in which any definitive meaning of water cannot be held; water will not be captured and contained in this way. While Foucault's heterotopias are helpful, I suggest that turning to Spivak adds further depth to his insights. Parsing the relation between water and knowledge specifically through a lens concerned with coloniality emphasizes the ethics and politics at stake in any incitement to know water, and to master it.

In the third chapter of her book *Death of a Discipline*, postcolonial feminist Gayatri Spivak (2003) critiques the logic of globalization that tries to introduce a knowable, plottable uniformity to the globe. She argues that instead of being global, we should strive to be planetary: 'The globe is on our computers', she writes. 'No one lives there. It ["the global"] allows us to think we can aim to control it' (72). But, she continues, 'the planet is in the species of alterity, belonging to another system; and yet we inhabit it, on loan' (72). To put it otherwise, the language of 'globalization' for Spivak is strongly linked to a logic of knowability and knowledge-control. It presumes a world that can be laid

out, grid-like, plotted on our GPSes and ultimately comprehended-conquered. Spivak counters the image of the globe ('even though it is not really amenable to a neat contrast with the globe') with planetarity: 'Planet-thought opens us up to embrace an inexhaustible taxonomy of the names [of radical alterity]' (73). Planetarity is '(im) possible' to represent because of this very inexhaustibility. It is always more than it is. But key for Spivak is the fact that this 'beyond' is also lived; it is also of us, with us, through us, alongside us (hence the 'im' of the possible is couched in a parenthetical signpost). 'To be human is to be intended toward the other' (Spivak 2003: 73), but this other-ness cannot be easily displaced onto a transcendental difference, derived from us as our not-I (mother, god, nature – or Water, as synecdoche of any of the above). Embracing 'planet-thought', she explains, can open up a different understanding of and relation to otherness:

If we imagine ourselves as planetary subjects rather than global agents, planetary creatures rather than global entities, alterity remains underived from us; it is not our dialectical negation, it contains us as much as it flings us away. And thus to think of it is already to transgress, for, in spite of our forays into what we metaphorize, differently, as outer and inner space, what is above and beyond our reach is not continuous with us as it is not, indeed, specifically discontinuous. We must persistently educate ourselves into this peculiar mindset (Spivak 2003: 73).

In other words, we are riven through with this otherness, and it is enfolded in us and as us as well – but it *is underived from us*. We humans are not the origin of this relationality.

Planetarity is the species to which water belongs. This 'of me yet beyond me' is the unknowability to which water asks that I attend. Water as planetarity also suggests an epistemology that is engaged, embedded, embodied; a way of knowing that is somewhere, situated, implicated – in time, in space, in other bodies of other beings – but this is also a form of knowledge in which that location will always exceed my bounds (as even this 'my' leaks out of my watery body beyond the realm of any knowability). In an epistemological register, formulaic, codified, categorizable access to planetarity is not possible. We are its curious custodians rather than its masters. *Intimacy is not mastery*. We are always becoming water, but water is also always beyond us. We are

becoming water that we cannot become – not in any full sense of finality, completion, or control.

In thinking knowledge with water, feminist concerns about power and responsibility swim to the surface.²⁵ Where knowledge and water collide, it seems crucial to know more about what we are doing to water, and to ourselves, as bodies of water, in light of water's ecological precarity. We *do* need more knowledge about the causes and effects of our plastinated oceans, about the catastrophic damage being done by the Tar Sands megaprojects to the Athabasca watershed and the many bodies nourished by it, about other extraction industries in the Amazon and the Niger Delta, about the effect of mining on the Great Barrier Reef in Australia, and about the even more shadowy shadow places (Plumwood 2008) of our fossil-fuelled loves. We *do* need more knowledge about the levels of heavy metals in our drinking water and about the levels of water in our aquifers that we are draining far too rapidly. And again, while these are ecological issues, they are also feminist and anti-colonial concerns. The harm that we do to water is never equally distributed across human bodies. The flows of biomatter also chart the flows of global power. In other words, a call to recognize water in the species of alterity, as unknowable, is not a call for an epistemology of ignorance (Tuana 2004). Unknowability is not about refusing to acknowledge water's many wounds and our different capacities to inflict and withstand those violences, but about recognizing that at the end of the day, water will still exceed us – our sovereign subject bodies, and our capacity to fully know.

How far should our quests for knowledge reach? A respect for water's unknowability is instead part of an epistemology that would seek a different relation to water – one in which we were not always bending it to a human will, or instrumentalizing aquatic life in the pursuit of human fantasies. The Census of Marine Life, for example, promises to document every single species of life in the seas; exploratory vessels are increasingly penetrating our oceans' benthic zones to document these mysterious ecosystems. The relationship between knowledge and water is not simple, but understanding this relationship seems also to be a question of distinguishing between kinds of knowledge – knowledge that commoditizes and colonizes, knowledge that generates necessary anger and action, knowledge that heals. Knowledge that builds communities, or knowledge that fractures them. Knowledge that

responds, or knowledge that masters (see Code 2006; Smith 2012; Wilson 2008). Imagining ourselves as bodies of water, carrying each other across species, generations, and geographies – all audaciously heterotopic – might also demand learning something from water about our incitement to know.

Planetaryity does not displace an ontological question with an epistemological solution: planetaryity does not suggest that while some waters are knowable, others remain hidden or beyond our comprehension; planetaryity rather insists that all water partakes in unknowability, as an ontological demand. Because all waters are gestational, always becoming different, always gathering existing and potential waters and recasting them, anew, no waters are fully knowable – not the water of the Other, nor the hypermarine channels burrowing through my own flesh. Despite all of the harm we do to it, in one sense water *is* inexhaustible – the things that it does and the bodies it proliferates cannot ultimately be predicted. Again, water is one step ahead of any body. As feminist theorist Karen Barad (2008a: 174) would say, water reminds us that the world is ‘not a secret to be revealed’ by us humans. It is rather in a constant process of emergence. As a gestational engine of life, growth, and change, water defies epistemological capture and containment – even, or especially, in our own bodies as carrier bags.

Aspiration, that oceanic feeling

Evolution stories help us think about water – both individual bodies of water and entire species as bodies of water – as a gestational milieu that connects us all. Gestation here is never a complete forsaking; its gifts are never entirely given, and the gestated body never leaves her gestational habitat entirely behind. We are always carrying these fishy beginnings. From an evolutionary perspective, not only is water a gestational habitat, but all of the life forms that evolution has experimented with along the way are gestational too – those first expressions of watery life themselves and their many proliferations that followed: marine invertebrates that still dwell in many ways unchanged in the deepest depths of the oceans; the multiplicities of fish that still populate the seas as well as those who ventured onto dry land; and those tetrapods who eventually returned to their watery habitats, temporarily or (so far) permanently. We are

carrier bags in a constantly shifting network of potentialities in a temporality that anticipates the past and remembers the future.

In other words, evolution stories give us the means – openings and navigational charts – for amplifying our own watery indebtedness. These stories are the tales of scientists, but they are also fabulous and figurative. We carry them in our baggy imaginations, and they are written into our swampy humours. The geological echoes in our bones are literally the debris of worlds past. That ‘oceanic feeling’ we amplify might include: that all living beings require water for their gestation; that all living matter is composed primarily of water; that sexual difference is a particularly rich means for proliferating life, but that the actualization of this difference can and does take many forms; that with the terrestrial invasion of life this watery gestation and watery embodiment demanded various inventions, such as the amniotic egg, the tetrapod skin, big lungs, and Hypermarine physical imbrications; that even in the absence of reproductive gestation, symbiogenesis calls on water to facilitate its transfections. Evolution stories inaugurate ways of thinking about our watery human embodiment, in terms of both our own specifically human capacity as bodies to affect and be affected by other bodies and our historical and lateral continuities with other-than-human bodies of water. Stories like these pull us out of the limited and limiting comfort of our general human perspective and invite us to consider what we can learn when our perspective is stretched, shrunk, or dispersed. Evolution stories challenge the ‘loose unity’ of our human embodiment in order to see where and how we might drift, disperse, and dissolve into a new watery imaginary.

There are some aspects of our fishy beginnings that we will never be able to live. We can contact these beginnings, but only furtively, only on stolen time. To follow these resonances of past waters to the depths of their potentiality, we need superpowers, or borrowed organs, like Lingis suggests. And even still, in the dark, in our submersibles, everything could never be revealed. We will not master even that which makes up three-quarters of our sloshy selves. Yet our bodies can nonetheless hover, silent and suspended, below the surface, our lungs two inflated balloons that keep us from sinking.

Below the surface, at the borders of the liveable, perhaps we should not be surprised that, strangely, we have a kind of breath. Between inspiration and expiration, there is always a small gap – a pause really, where we are breathing

neither in, nor out. We simply hover, with a suction lock in our lungs. The scientific name for this is *aspiration*. Below the surface, we still in some way breathe. We are suspended between our larvae and our actualizations as much as between water and air. No, our fishy beginnings are not altogether alien to us. They can be glimpsed, contacted...aspired to, but never fully captured.

We could also say that aspiration – this thoughtful suspension – is a kind of care, and an extension of care (attentive, in-between) for that which calls us to respond. If these aquatic creatures are our strange kin, echoing in us as both our pasts and potential futures, it is thus worth considering what we are also gifting to them, and to the watery milieu that becomes us all. When Irigaray (1991: 57) asks her interlocutor, ‘did your idol not come from the bottom of the sea?’, she suggests that amniotic waters are part of the greater element of water that continues to sustain us and protect us, after we emerge from these wombs. But she also asks: ‘Did it not habitually return there at times of greatest peril?’; ‘Did it not find its survival in the sea?’ (57). While Irigaray – like Ferenczi, Calvino, and Morgan – might be invoking a cetaceous return, it is somewhat ironic, now, to imagine this return as a way to escape peril. It is a clear case of ‘out of the frying pan, into the water’, I’d say. After witnessing the humpback smother itself on that Western Australian beach, Giggs (2015: n.p.) sought out more information about beached whales:

I learned that in the coastal currents some whales become entangled in abandoned fishing kit or ingest trash – bags, wrappers and mesh. Because they are so well insulated by that thick layer of blubber they attract fat-soluble toxins as well, absorbing heavy metals and inorganic compounds found in pesticides, fertilizers and the other pollutants that powder the modern sea. The body of a whale is a magnifier for these insidious agrochemicals because cetaceans live a long time and accrue a toxic load from their prey. Levels build up over many seasons, making some animals far more polluted than their surrounding environment.

In the context of increasingly plasticized oceans, carrier bags – those ubiquitous disposable progeny of late capitalism, providing literal rumination for earthbound cattle and floating through the seas as fancy-dress jellyfish – all of a sudden represent a different, more sinister kind of ‘holding in relation’ than LeGuin likely imagined. Knowing that the whale on the beach was

destined for the municipal waste management facility, Giggs says she is also moved to think of the whale as landfill. 'It was a metaphor', she notes, 'and then it wasn't'. The same could be said about the whale, her insides harbouring stories of industrial debris, as dump.

When we consider the ways in which cetaceans and our other fishy beginnings echo through our own flesh, we might pause, and reflect on the ways in which we echo through them – literally whales-becoming-the-detritus-of-late-capitalism. Nor are these echoes metaphoric. Low-frequency active military sonar emits sound pressure of 120dB (a level that would damage our human ability to hear) for 3.9 million km², while mid-frequency sonar can emit continuous sound above 235 decibels, which is mostly like a rocket blast-off. High-intensity sonar and seismic waves snake along the ocean floor seeking oil and gas deposits. Meanwhile, background noise in the ocean doubles every decade mostly from commercial shipping traffic. Cetacean deaths sometimes surface as mass strandings, but necropsies show extensive internal bleeding in cranial regions (see Roburn 2013). Again, if we are always potentially becoming-cetacean, how are our strange aquatic kin becoming us?

Similarly, old N'ba N'ga, conjured from Calvino's pen in 1965, doesn't quite seem to predict the poisonous gifts that we humans will bestow upon our oceans in the coming decades. 'Down there', he explains to his nephew and his bride-to-be, Lll,

changes would be very few, space and provender were unlimited, the temperature would always be steady; in short, life would be maintained as it had gone on till then, in its achieved perfect forms, without metamorphoses or additions with dubious outcome, and every individual would be able to develop his own nature, to arrive at the essence of himself and all things. (Calvino 1965: 79)

Even if N'ba N'ga's nephew insists that his aquatic uncle 'didn't conceal the problems, even serious ones', N'ba N'ga's version of the ocean world is hardly what we swim in today. Nor is this the ocean that swims in us.

Life began in the sea, and our bodies have been engaged in various retellings of this 'origin' story ever since. I'm not interested in narratives that put The Family back in place, but kinship in all of its queer and wondrous forms is still something I seek. This is the difficulty, of course: embracing queer stories

of evolution as a ground of connection and responsibility without reinstating old myths of Dark Continents, Woman-as-Womb, and power plays of family ties. But no story is innocent, and this is the kind of trouble I'd like to – *that we need to* – stay with. We could say it is less about 'your inner fish' (to quote Neil Shubin's pop science title) than it is about remembering the water that keeps us all rather fishy in the first place.