

Preface

LIVING EPIPHYTICALLY

What do you do? Where do you live?

Common questions, questions, I imagine, most readers of this book have had cause to ask and answer, perhaps more often than they can recall. For me they pose a challenge. This book is, obliquely, about why I find it so difficult to say what I do and where I live. Partly for this reason, it has been remarkably difficult to write. This is not something I understood at the time. As I wrote the chapters that follow, I ascribed the distinctly effortful quality of my writing days to the cumulative fatigue of having written, depending on how you count, three, or four, or five books back-to-back, to an unfamiliar rhythm of professional responsibilities that obtruded into my working week, to the strain of writing and managing these new responsibilities while at the same time setting up a house in an unfamiliar city—Los Angeles—after ten years living outside the United States, and to my shock—common, I discovered, among the newly returned—at how the country had changed in those years. These all played a role. But mainly, I have come to see, it was how the themes

of this book touched a distinctly personal nerve that made writing it so difficult. Even now, this morning, writing what should be the easy part, I feel an awkwardness, I find myself straining to hear the music, as if from a neighboring room with a closed door between and a kettle coming to a boil at my elbow—testament, no doubt, to how awkward I find writing about myself.

In fact, I did not intend to include a preface at all. On the morning at the end of August, just a bit over ten months back, when I started writing this book in earnest—not proposals or sketches or notes but what I understood would form the published text itself—I started with the following:

A Note to the Reader:

Writing this book, I've tried to put myself in a contemplative frame of mind. I encourage you to do the same when reading it. Accordingly, there is no prefatory material. The book begins *in medias res* and its themes emerge organically. If you find yourself desperate for a more explicit delineation of theme, you have my blessing to skip to the final chapter.

This was a bit dishonest, because of course “writing this book,” the experience whose outcome, by implication, informed the choices—“Accordingly, there is no prefatory material”—and illocutionary acts—“I encourage you . . . you have my blessing”—lay entirely in prospect. When I wrote this paragraph its content was aspirational. What I had, that morning, was not a textual basis for dispensing with the signposting and, to use a word that will recur, the scaffolding typical of a research essay, but a desire to write something freestanding and self-contained, something that, without sacrificing the rigor and precision that I prize above all else, would not tax the reader in the way, I had come to see, my previous efforts had done. Something not glib but accessible, something that disclosed itself the way the wall discloses itself when you practice *zazen* early in the morning, the texture and scuff marks, the movements of insects, the text on the spines of books, if you are facing bookshelves, filling in as the

hour unfolds and the dark gives way to the gray wash of an overcast sky—or the pale yellow of sunrise—as you sit, hands folded atop the medial process of the calcaneal tuberosity—I tend to start out with the right foot supported by the left, switching halfway through—thumbs forming a bridge, breathing slowly, steadying the gaze. In a way this too is dishonest, for when I wrote “A Note to the Reader” I was not aware that what I had in mind by “a contemplative frame of mind” was something so specific, though I am confident now, for reasons made clear in chapter 4, that it was.

Mainly, I wanted the reader not to have to work so hard. And I wanted not to have to work so hard myself.

As I write, the house is a mess. Two days ago we returned, my partner and I, to our place in Berlin—Jessy’s place, really, her home for the past fourteen years, mine, on and increasingly off, for four—after ten months (for Jessy) or eleven (for me) away. Our subtenant did a reasonable job keeping the place intact. Still, the floors feel gritty and the surfaces are covered with nests of varied debris: T-shirts to be washed, packets of hempseed powder and cacao nibs, charging cables documenting the evolution of serial bus standards over the past ten years, environmentally friendly vessels and utensils in stainless steel, titanium, and bamboo, a letter from the building management indicating that the rent will go up 15 percent at the start of September. In the fridge are unfamiliar containers of things we would never keep around. The craquelure on the surface of the bathroom sink has grown. A new washer stands in the kitchen, between hob and sink, where we had it placed seven months ago, arranging the whole thing from Los Angeles.

This book, for all that it is brief and, to my way of thinking, dissatisfactory, has been close to eight years in the making. It was October or November 2011 when I first came across the materials that form the basis for chapters 1 and 2. It was April 2014, not long before I met Jessy, when I first started making notes about the peripatetic character my life had taken on, my difficulty saying where I lived,

or even where I was “based.” But it is really in the past two years that this book has taken form, and the places where I conceived and wrote it speak to its themes. These included a one-room cabin on Lough Derg, Ireland, in June 2017; a skeuomorphic shepherd’s hut on the Isle of Eigg, in the Inner Hebrides, in July 2018; a trailer on a subdivided ranch in Antelope Valley, on the southern rim of the Mojave Desert, in November 2018; and, most significant of all, a cabin in Onyuudani, a remote hamlet in the Lake Biwa watershed, on the outskirts of Takashima, Shiga prefecture, north of Kyoto. With the exception of this preface and brief sections at the ends of chapters 4 and 5, I wrote the text itself in a backyard cottage in the shadow of the ridgeline separating the Highland Park and Mount Washington districts of Los Angeles. On satellite images, the house appears to sit at the edge of a large park, but in fact this is a hill so steep, and so thick with coarse dryland vegetation, as to be nearly unnavigable. You could, if you wanted, hike up to the ridgeline through the notional park, but most days you were better off taking the long way around. In any event, the fact that the house stood in shadow most of the day, especially—as the ridge stood to the west—in the afternoon, meant that it tended to be two or three degrees cooler in our home than out in the main road. In August, when I arrived, this was a blessing. In winter it made writing a challenge—as with many small structures in winterwet climates, our cottage was characterized by a distinct absence of insulation—but a productive one, as thermoregulation has come to play a prominent role in the argument that follows.

I could name other places that influenced this book. A one-room cabin—styled a bothy though it was lightly built of modern materials and not really on the way anywhere—where we spent a couple nights, on a farm in Inshriach, in the Scottish Highlands, in September 2016. A cool plastered house facing a stand of eucalyptus, with the scent of the ocean, in the village of Odeceixe, in the Algarve region of Portugal, where we finished a four-day hike in September 2015. Like all books, this book has a perspective. One way to think

of the perspective this book offers is that of the knapsack, which has become a metonym for my way of being in the world. In the cinematic way that some of us, myself included, have of reflecting on our lives, I imagine the knapsack as a participant in a shot/reverse shot: first you see the knapsack, sitting on the floor, its drybag closure lending it a fig-shaped aspect, then you see the bare room as if from the knapsack's point of view. But lately I have come to think of the perspective this book offers in a different way: this is a book about living epiphytically.

When I moved to Los Angeles eleven months ago I took four books with me. One was Sylvia Hallam's *Fire and Hearth* (Australian Institute of Aboriginal Studies, 1975), discussed in chapter 3. Another was Daniel Friedman and Barry Sinervo's *Evolutionary Games in Natural, Social, and Virtual Worlds* (Oxford University Press, 2016)—evolutionary game theory lurks in the background through much of this text. Then there were two books on plants: Hamlyn Jones's *Plants and Microclimate: A Quantitative Approach to Environmental Plant Physiology* (Cambridge University Press, 2014), and Kathy Willis and Jennifer McElwain's *The Evolution of Plants* (Oxford University Press, 2013). The Friedman and Sinervo and the Jones texts did not make it back from Los Angeles—there is a continuing work of selection, sifting, sloughing off, that unfolds when you move around a lot, and it is one of the things that I find exhilarating about living as I do. *Fire and Hearth*, I suspect, may be with me for some time, if only because it is difficult to find a copy and as a finding aid for a large body of primary sources on the role of fire in winterwet foraging communities it has not really been improved upon in forty-five years—and it does not take up much space. *The Evolution of Plants* is with us now mainly because Jessy has been reading it. But seeing it on the shelf the other day, amid the flotsam of recent arrival, I was reminded of how keen I was, a year ago, to bone up on plant ecology, how urgent this felt—I could not, I felt, do justice to the questions of niche construction, in particular the human manipulation of vegetative cover, that occupy the first

60 percent of this book, absent a firmer grounding in the ecology of plants. I still feel this was reasonable. But now I see something else at work in my turn to the plant world: I was looking for a metaphor for the strategies of survival described in this book.

Our home in Los Angeles was filled with epiphytes. Actually, it would be a mischaracterization to say it was filled with anything. I seem to have a deep-rooted distrust of furniture, of stuff, but I do like having plants around. To mark Jessy's arrival in Los Angeles in October, I ordered a pair of *myouga* seedlings (茗荷, *Zingiber mioga*) from a nursery in Oregon. We planted them, with for me uncharacteristic optimism, in a pair of planters in the yard where a yearslong drought had seen off jasmine, agave, aloe, and other plants far more tolerant of a dry climate than *Z. mioga*, better suited to the monsoonal climate and deciduous forests of southern Japan. One of the first places we went together in Los Angeles was to the Huntington Gardens in Pasadena. By chance, the day we went for the first time, they were holding an orchid sale. From a tray of discarded orchids, Jessy chose a *Dendrobium*. It had been marked down to five dollars. Within a day or two of getting it home, we understood that this was because it was infected with some kind of virus or microfungus. The pitting and black spotting that indicate mesophyll collapse appeared on many of the leaves. Jessy cut back the worst-affected, sprayed the rest with a dilute solution of white vinegar, and sprinkled baking soda over the rhizomes and at the bases of the leaves. I was skeptical that these measures would have an effect, but the plant made a full recovery, later growing to the point where it had to be propped against the house to keep it from tipping over when we removed it from its weighted outer container to give it water and let it sun itself on the porch.

Our *Dendrobium* flourished in a bed of loose gravel, so it would be more accurate to say it was lithophytic than epiphytic, though as it grew its rhizomes spilled out over the lip of its container, as if probing its environment for something ligneous to grasp on to. But we kept other plants that were true epiphytes in that they could

not be embedded in any kind of mineral matrix, however loose—they would only grow suspended in air, rhizomes preferably coiled around some other plant. These, I admit, I found a bit finicky. Set outside to get some sun, they were forever blowing off the rail, and you had to be careful not to let them get too much moisture. When I think of the plants that I found most inspiring in the time I was writing this book, those that filled me with humility and peace, it is trees that come to mind—the ghost gums mentioned in chapter 5, the *Casuarina*, deodar, and Montezuma cypress that we would visit at the Huntington, the *Melaleuca* along Monte Vista that became visible to me only after I'd written about paperbark watercraft in chapters 1 and 2. Perhaps the precariousness of the epiphyte strategy feels a bit too familiar for me to see in it something worthy of respect.

So far I have said something about my trouble with *Where do you live?*, nothing about *What do you do?* Here too, I have been something of an epiphyte, socialized, in different places and at different points in my career, as a historian, philosopher, anthropologist, computer scientist, cognitive scientist, and design thinker, whatever that may be. I did not set out to become a disciplinary skeptic, though on balance I think it has served me well—or at least, the embrace of disciplinary identity runs contrary to my character. In the five years before I wrote this book, my main institutional affiliation, though it was a loose one, was with a functional brain-imaging group at a cognitive science institute, where I saw it as my role to goad the PhD students and postdocs toward an appreciation of the value of ecological validity—how people behave, as it were, in the wild—as a criterion in the design of imaging studies. These days, when I am obliged to provide a disciplinary epithet, I usually refer to myself as an anthropologist, because anthropology in the broad sense—the study of how culture mediates human adaptation to environment, with emphasis on the ecological determinants of behavior, the coevolution of individual, community, and milieu, and the nonlinear interaction of phenomena unfolding over timescales of ten milliseconds to one million years—feels like the best fit for my

own methodological aspirations. At the same time, I find myself at odds with anthropology as it is practiced today in either of the going disciplinary camps, the interpretive and the analytic (or the constructivist and the reductivist). The one treats precision and rigor in the description of behavior as suspect principles irreconcilable with epistemological pluralism and respect for diversity of experience, the other pursues precision in a deductive fashion that seems to take dimensionality reduction as an end in itself rather than as a provisional, iterative strategy for making sense of a phenomenon—the behavior of encultured beings—that is intrinsically high-dimensional. Of course these are caricatures, and I am not alone in my desire, as anthropologists Agustín Fuentes and Polly Wiessner have put it, to reintegrate anthropology.

But really, more than one colleague has said to me, *you're trying to create a new discipline*. Indeed, it might be something you could call *sensorimotor ecology*—or, extending the project beyond sensory and motoric behavior in the conventional senses, *semiokinetic ecology*. This is a theme I return to in the postscript. Here I will simply note that in the text that follows I do a lot of switching back and forth between analytic and interpretive registers. This is partly a matter of thematic emphasis and choice of evidence, but it plays out in diction and syntax too. By design, parts of the text are cool, crisp, free of emotional coloring or overt indications of my own opinion on some matter of contention, while other parts are personal and charged. For some time, my friend and colleague the artist Simon Penny has had a project called *Orthogonal*, the aim of which is to build a prototype for a modern oceangoing proa—an asymmetrical dual-hull sailcraft modeled on those long used in Micronesia. One of the design characteristics of proas is a strategy for catching the wind known as *shunting*, “reversing end for end, with the *ama* [outrigger hull] always on the windward side. . . . This kind of asymmetry,” Penny explains, “presents both opportunities and difficulties. It permits light, fast craft of extremely shallow draft, but shunting the rig traditionally involves dragging sail and yards to the other end of the

boat." I have done my best to make the shunting between analytic and interpretive registers smooth and nonkinetic. It is my hope that no reader will find their feet tangled in the yards.

But the shunting serves a purpose. I hope it is clear from what follows that I believe deeply in the emancipatory potential of rigorous observation and that I care deeply about getting things right—contextualizing claims, testing them, exposing their methodological and political assumptions, sifting evidence. That these two principles, emancipation and rigor, should be mutually reinforcing rather than mutually inconsistent has long seemed to me not self-evident but more consistent with the evidence than any other position. But more than one sympathetic early reader has pointed out that this is an uncommon position today and that it warrants commentary, perhaps contextualization of its own. *You're out of step*, people have told me, and it is important that I acknowledge my out-of-stepness at the outset.

I am loath to descend into genealogy, either my own or that of a discipline save, as in chapters 1 and 2, as disciplinary genealogy impinges on questions of method in sensorimotor ecology and on the broader questions of policy and values that these give rise to—above all, in this book, the question *What is to be the role of stuff in our lives?* I will say that if I am out step, my teachers have operated in a similar spirit. It is from the linguistic anthropologist Asif Agha that I have adopted, no doubt clumsily, key parts of the outlook that inform this book, particularly in chapters 1, 2, and 3: my skepticism that the principal social function of coordinate action is the transmission of information in the fashion envisioned by proponents of the trait-transmission theories discussed there, as well as my emphasis, verging at times on self-parody, on the metapragmatic dimension of behavior, the way that everything we do, above all everything we do with others, serves either to bolster or to challenge social norms, and generally both at once. Every gesture we make, be it speech in the conventional sense or some other kind of sensorimotor act, represents a link in a chain of norm-enregistering behavior, a chain that

can only be grasped by understanding the community, the matrix in which registers of sensorimotor behavior form and dissolve, as a phenomenon of meaning-making as much as, perhaps more than, the individual is such a phenomenon. I have used the term *enaction* to describe the phenomena of coordinate action I have in mind, in order to emphasize that enregisterment, as I have come to think of it over many years of conversation with Asif, is continuous with meaning in the more “cognitive” sense (that is, concerned with how we construe the information about the world conveyed by our senses, above all information about the interior states of other enminded presences) that has typically preoccupied philosophers of mind.

Enaction, in this usage, refers to how socially coordinate movement gives rise to thinking, broadly construed. In my view, this *gives rise to* is evolutionary and developmental as well as functional: it is not that our presence in the world is given by central nervous phenomena, with sensorimotor faculties serving to support the work of the central nervous system—it is, rather, sensorimotor (or, to adopt an agnostic stance toward the nature and degree to which sensing and movement are endowed with an experiential character, semio-kinetic) phenomena that are prior, that stand at the center of what it means to be present in the world, to be an awareness sink. Nervous systems, cognition, sentience, indeed, culture, represent outgrowths of signaling and movement. They arise in response to particular kinds of constraints—the need to coordinate signaling and movement across contingently coupled parts of a living thing, as in the processes of central pattern generation that subserve respiration and digestion, or the need to respond to an environment that changes too rapidly for other signaling strategies, for instance the epigenetic regulation of gene transcription, to keep up.

It is from Riki Kuklick that I have adopted another key part of the outlook that informs this book, roughly, the contextualism that guides my reading of “technical” literature (for instance, that published in peer-reviewed journals), be it in anthropology or any discipline, as primary source material. In one of her last published

essays, “Personal Equations,” Riki undertook precisely the task I myself, a couple paragraphs back, said I did not have the stomach for: she offered an account of how anthropology developed as a discipline—specifically, one in which the practitioner’s bodily suffering in the course of extended fieldwork came to be understood as the key both to the rigorous, empathic observation of culturally distant peoples and to socialization in a self-reproducing community of professionals, that is, a discipline. For those most often credited with the formulation of anthropology as a discipline marked by a distinctive method and theory of knowledge, notably W. H. R. Rivers and Bronisław Malinowski, there was no conflict between the rigorous observation of behavior and the sensorimotor and emotional affinity one developed for one’s field interlocutors by virtue of prolonged immersion in the ecological setting where one’s interlocutors got their living. Indeed, bodily identification formed the basis for rigorous observation. This is something I explore briefly toward the end of chapter 3. I miss Riki. No doubt this would be a better book had I had the chance to discuss it with her.

It strikes me that both these things—a concern with the meta-pragmatic dimension of coordinate meaning-making, and a concern with how contingent features of life history, above all the emotionally charged circumstances in which mentorship unfolds, shape one’s outlook—represent forms of contextualism. Context is not genealogy—indeed, context, it might be said, is the complement of genealogy, comprising everything other than the vertical chain of transmission by which some people, particularly PhD students, imagine ideas to propagate over time. Learning to do something difficult entails a painful process of guided, sometimes misguided, experimentation. If I have a single guiding principle as an observer—I leave it to the reader to decide, according to their own background and inclination, whether my style of observation warrants the epithet *science*—it is this: it is essential to continually remind yourself how painful it was learning to do the thing you are now considered—by an autonomous community of practitioners? by

some underspecified world-at-large?—to be expert at. It is essential to be mindful of how your outlook was molded by the periodic resentment you felt toward those responsible for guiding you, it is essential to continually put yourself anew in situations of discomfort, of not-knowing-how. It is essential to practice humility, to be skeptical that you have got it right, skeptical of your capacity to get it right.

Riki would probably tell me to lighten up.

WHAT THIS BOOK IS ABOUT

My own tastes to the contrary, a preface should say something about what the text that follows it is about.

At its center is a simple argument: the history of technology is a history of the trading off of survival strategies centered on material artifacts for those centered on *enactive* artifacts, that is, those manifest more in encultured—culturally conditioned—sensorimotor schemas than in the material residues of encultured behavior.

Since enactive artifacts do not fossilize, past instances of societies' prioritizing them over material artifacts do not come across as instances of technological innovation. To the contrary, they often come across as instances of maladaptive technology loss. This makes it difficult to imagine, say, ways out of our contemporary environmental crisis that do not entail simply substituting a new package of material artifacts, perhaps with a smaller carbon footprint, for those we have today.

Enaction is a covering term for a family of theories of cognition that start from the premise that our experience of the world is mediated not by representations “in the brain” but by our ongoing bodily exploration of the fluid boundary between self and nonself. The concept applies equally to the technological extension of our bodies in space and time. We think of technology as something that gets realized in material stuff. We incorporate this stuff into our lives and in this way our bodies change—our habits of posture and movement,

patterns of muscular development and joint wear, qualities of attunement to movement, light, pressure, sound, and scent, circadian rhythms of motor vigilance, mood, and metabolic activity—the entire constellation of phenomena that in past work I have referred to as the human somatic niche. Technology serves as a scaffold for somatic niche construction.

But often, the scaffold consists not in technology in the conventional sense, that is, a repertoire of material artifacts and the behaviors associated with them, but in repertoires of enactive artifacts, shared patterns of behavior that endure by virtue of ongoing socially coordinate enaction rather than by realization in material things. Enactive artifacts are archaeologically invisible, but they are all around us. Some are ritually demarcated—working out, meditating. Others are ambient features of how we live our lives: tolerance of heat and cold, rhythms of sleep and wakefulness. Others play out over longer time horizons, such as the seasonal prescribed burning by which the earliest human inhabitants of Australia reshaped—and continue to reshape—the biota of their environment in ways that enhanced their own subsistence. Enactive phenomena are artifacts in much the same way that language is an artifact—they exist by virtue of ongoing re-creation, while their palpable traces remain largely evanescent. And, as with language, distinct recurring partial strategies for articulating body to environment spontaneously assemble into registers, and it is these registers that evolve over time.

The above, at any rate, is a fair characterization of the argument in the first half of the book, chapters 1–3. Starting with chapter 4, the argument takes something of a reflexive turn as I propose that rather than view the distinction between technological and enactive as one between opposing strategies that compete for dominance over time, we view them instead as complementary aspects of a single unfolding. This is essential if whatever insight we gain from chapters 1–3, which deal mainly with events unfolding at a remove of forty thousand to one thousand years, is to serve us in making sense of our own world. Ours is a world in which the material is so