

Chapter I

Approaching Humans, Animals, and Machines



Blurred Boundaries

Life in the early twenty-first century seems dominated by systems of machines that encroach upon our day-to-day rhythms. They are often a source of anxiety, as well as a source of success, and the means whereby to accomplish many of our daily projects. They are also harbingers of national security, means to exchange capital, ways to communicate with each other, and verifiers of what is going on around us. More personally, machine systems are the heart of whether our own shelters function properly, are sometimes key monitors of maintaining the functioning of our own bodies, and are becoming virtually omnipresent in most dimensions of our day-to-day existence. Even our vital abilities to be sexual or digest food or process the air around us are often keyed into pharmaceutical or biotechnical products that are machined for us in laboratories and factories. More and more, we write, think, and dream at screens of computers like the one I am sitting at to write this book. However, it is not only that we are surrounded by machines. These beings we created seem to be crowding us out and transforming our world in ways that are unsettling, thrilling, and puzzling. More and more, it is our growing sense that they have become the very means whereby we can maintain ourselves as who we are that is so unnerving, yet we tend to keep this anxiety hidden. We created machines and now they create us, or at least they shape us in ways to which we are too accustomed to relinquish. Countless plots of horror films or novels, as well as countless philosophical theories of dialectical interplay, have been spawned by this fear in our bones about a vulnerability to a reversal of who is the creator and sustainer between humans and machines.

The process of populating the globe with machines and reconstructing who we are in their image is a number of centuries in the making, but also for several centuries we have come to understand ourselves also as biological beings, as creatures or animals, yet comprised of mechanistic systems that

allow us to function in response to the world around us and in response to the various systems within us. The creaturely is often seen mechanically. Even our inner world is one of biomechanics. We are able to intervene increasingly in these interlocking mechanisms, even reading the detailed instructions in DNA codes, and so on. We have now invented machines that can even move around atoms. There are those who decry this increasing infiltration of our rhythms, our thoughts, our feelings, and our dreams with machines. Yet there are also those who dream of “storing” our consciousness in computers or machines and thereby realizing the age-old dream of many to escape the flesh—or, what is called by these advocates, “the meat.” In another reversal of traditional visions, immortality beckons to these individuals, not as realm of spirit but as having become downloaded into the invulnerable shell of the machine. Whether this encroaching mechanization and love for the machine is seen as menace, as source of oppression, alienation, and disconnection, or as salvation against the contingencies of a threatening natural world, a chaotic physical realm, and an avenue to greater order, productivity, and rationality of existence, it has become harder and harder to maintain a simple “us” versus “them” mentality with our machine confreres. As we recognize increasingly that vital and vast parts of who we are as distinctively human are not possible without this mechanistic dimension being at the heart of our viscera, our genetic codes, our electronically based neural functioning, and so on, who we are becomes more insecure from this direction too. With the scientific revolution of early modernity, the divine itself has been seen by some as a machinist and the creation as a clocklike invention. In this vision, the esteemed place of the soul in opposition to this material realm seems vestigial. If the material realm is merely a grand mechanism, then the place of spirit seems merely a confused afterthought as if it were a smoke screen to keep us from settling up the score with ourselves as to who we really are.

Where Are the Machines?

This sense of becoming reduced to a mere machine, to a spiritless realm, however, may also be an outdated carryover from our tradition, insofar as the way we tend to think of machines keeps old industrial models dancing in our heads instead of savoring newer dimensions of the machine we have not fathomed yet. There is a need to see older definitions of the machine and the characteristics of mechanism as often outdated. The vision of clanking gears and cogs grinding an invasive path through the external world in a maniacal blindness might have been properly directed at the core of the industrial mechanism, and once properly dictated our assessment of the

traditional machine. Yet this view might not fit what we now ask machines to do, or how we see vast portions of our physical and human reality to be machinelike. We can narrow our vision to fit these older notions of the mechanical, but they do not encompass the trajectory of where machines, and we in tandem with them, appear to be going. In looking back, we might see that we were not as discerning as possible about the varied aspects of machine beings, as well as the varied ways to be human that might overlap with machine being. Also, it has become increasingly undeniable that machine being is not just about physical apparatuses constructed by us to do certain tasks but equally concerns other dimensions of human existence.

When we look farther, social mechanisms or governmental mechanisms or educational or religious ones often disturb many who are not even as concerned about the machine as physical entity. There are other ways to be caught by machines or to become part of machines than being caught up in the gears of a factory monster, such as the famous image of Charlie Chaplain being swallowed up in the enormous metal cogs in *Modern Times*, where his being caught up in the literal mechanism of the factory is symbolic of the mechanism of industrial life measuring the worker's value in terms of productivity and efficiency. Becoming just a number or a set of statistics or a profit margin or a strategic piece in a movement or within an institution that has forgotten its purpose, or being reduced to an object to be conveyed here or there by certain procedures, or becoming reckoned upon as a set of behaviors to be managed within acceptable parameters for the overall functioning of the larger social system is a way to be incorporated into machines without becoming metal or silicon. Some of these mechanisms are truly horrifying, such as the "war machine" written about abstractly by Deleuze and Guattari, but also written home about by any grunt stationed in the modern fighting force or by those occupied civilians who live in these zones of containment, control, and devastation. Yet as in the case of the literal, specific machine, life seems improbable without these sorts of mechanisms channeling energies, thoughts, materials, events, communication, transportation, and so on. So, intrusively or invisibly, helpfully or as a mode of resistance, the machine lurks in many dimensions of human existence having nothing to do with metal or silicon. Yet what seems most striking is that we have not really thought through globally the characteristics of the machine, whether machines are evolving in their characteristics, and what exactly their relationship is to human being.

Machines and humans are often taken to be in opposition, to be at odds in a war of dominance that our science fiction movies increasingly portray as perhaps perilous for humanity, another tradition that has long antecedents but probably is most famously represented in American popular culture by the nineteenth-century specter of Mary Shelley's creature,

Frankenstein—a “machine” made out of biological “parts,” or is it a creature brought to life by the power of mechanisms in turn powered by human will and imagination? It is fictional, but the grey area it opened in the public imagination about possibilities for the future is an ever-expanding one and also a zone of indeterminacy that has always existed between human and machine from the earliest myths of humankind. In Shelley’s vision, the “monster” is initially more humane than its creator or the other humans it encounters, who spurn its tender feelings of wanting to embrace all beings, because of the *mechanism of prejudice* that guides their responses and behavior—an automatic response to its unsightly looks. Who is machine, who is creature, and what is human? We will see not only Frankenstein, but in many collisions of humans, animals, and machines, they are like Möbius strips—if one follows them along their apparent surface, they turn inside out and are part of another domain entirely, while still also being part of the first domain.

Are Humans Not Animals?

At the same time the boundary between the human and machine has been contested, puzzled over, and debated increasingly in the past centuries, humans’ relation to the creatures around us has become increasingly unclear. In American culture, it was certainly the spread of Darwinism that brought to a fever pitch a debate whether humans were just another sort of animal, or something distinct from the rest of animal being, a debate that has only become more heated with the advent of machines allowing us to probe ever more deeply into our mutual constitution and to see that 98.6 percent of our DNA is shared with certain apes. This fact was brought home most forcibly to popular culture when Jared Diamond, in his best seller of the early 1990s, declared that “we are just a third species of chimpanzee” and titled his book *The Third Chimpanzee*. His initial sentences explaining this claim inform his readers that “the genetic distance (1.6 percent) separating us from pygmy or common chimps is barely double that separating pygmy from common chimps (0.7 percent). It’s less than that between two species of gibbons (2.2 percent), or between such closely related North American bird species as red-eyed vireos and white-eyed vireos (2.9 percent). The remaining 98.4 percent of our DNA is just normal chimp DNA.”¹ In this perspective, not only are humans not distinct from animals and other chimpanzees, humans “don’t constitute a distinct family, nor even a distinct genus” (TTC, 25).

Yet once again it is not just on the level of our changing perspectives of what our makeup is where these boundaries cross and blur; it is in the matrix of economic, political, and social activity that we struggle to

understand the ways in which a sense of animality pervades aspects of our culture and collective activity, just as these dimensions, too, analogously can be seen to be mechanisms. It would be an easy matter to digress into many issues that contest the boundaries of the human and the animal, from animal rights debates in which the shared human-animal capacities for pain or loyalty enter, to the explosion of time, capital, and emotion aimed at pets within postmodern capitalist societies, which is not only some romanticized and cute sense of fetish ownership but part of a longer history of what Donna Haraway calls the “natureculture” of “companion species” in her small book *The Companion Species Manifesto* (a supplement to her earlier, famous “cyborg manifesto”). Haraway describes our flesh and our language as a “metaplasm,” as an ongoing remolding or remodeling among humans and other species, especially focusing on the human relationship with dogs: “Domestication is not creating a tool out of an animal, but a co-habiting in which both species are part of a protean, historical, obligatory and constitutive emergent process.”² Instead of seeing domesticated animals, pets, and working animals as tools, as something external to human being, she believes species incorporate aspects of the other into what they have become. This parallels her earlier work on the way humans and machines have become assimilated within each other in their being.

Like Haraway’s new work, part of my own writing has been to document the ways in which animality is constitutive of what we think of as most human about ourselves and how animals express themselves through behaviors and interactions that suggest they have intelligence, feelings, morality, capacities for relationship, and recognition of mortality in certain cases. I have made the case that these phenomena must alter our sense of the different kinds of being of animals and how we share with them dimensions of who we are.³ Perhaps it is not mere superstition that indigenous cultures have referred to animals as our teachers if it were true that we have learned from animals or from the animal nature within us some of our finest “human” attributes.

Yet it is not altogether unreasonable that the opposite point of view, that of Descartes, Malebranche, and a host of philosophers, cognitive scientists, ethologists, and others, maintained that animals are basically no more than machines, and at the same time worried that humans were driven by emotions that in turn were driven through the blood in a mechanistic way. Perfectly expressing this blurring of boundaries, Descartes called these mechanistic forces of emotion “the animal spirits.” The overlapping of boundaries may be quite apparent when the philosopher whose credo is achieving “clarity and distinctness” coins a term and a notion that wonderfully conflates human, animal, and machine. His terminology conjures up a picture of how humans are compelled in a way like an *animal* as a *mechanism* that is

driven as *spirits* coursing through the blood. It is uncanny, as we will see in case after case in this book, from physiology to metaphysics, psychology to political science, mythology to physics, computer science to painting, that when one proceeds to the core of what seems to be the animal, both the machine and the human emerge into the discussion. When one proceeds to the core of the human, both the animal and the machine emerge. When one looks most deeply at the domain of the animal, descriptions of mechanism and humanity emerge. The three realms, I would contend, can only be thought through together. The boundaries of the human, animal, and machine overlap, dance within each other, and separate, or maybe they should separate at certain key moments, but these lines or arabesques have been barely drawn or even traced out for the intricacy and beauty of their movements. Cyborg being—our sense of incorporating tools, and becoming interwoven with machines within us, about us, and within the meshes of how we have organized the world—has always existed—it is just becoming more literal and extravagant. The animal within us as source of vitality, of joy at organic being, of intercommunion with the creatures around us to experience the planet, is also an ancient aspect of human existence—dimensions that I have written about at length in *Earthbodies: Rediscovering our Planetary Senses*.

Are We Not Confused about Definitions?

By often limiting the discussion to each of these boundaries with the human—both with the machine and the animal—we are overlooking possible sources of answers to many vexing questions. In order to decide when the infringement of the mechanical is becoming destructive in certain instances to human possibilities, to decide when humans have imposed a corrosive dimension onto the quality of animal life, or to understand how machines may be due a certain inclusion within the community of fellow beings that demonstrates an emerging excellence of spirit and beauty, and might have an intrinsic worth, it is necessary to understand the ways in which each dimension lies at the heart of the other, where each needs to remain distinct and still be able to speak to the others across the differences as is needed for dialogue. As Haraway says in *Companion Species Manifesto*: “Post-cyborg, what counts as biological kind troubles previous categories of organism. The textual and the machinic are internal to the organic, and vice versa, in irreversible ways” (CSM, 30). This trouble has been with us for a while—when we started cutting up humans more routinely in the eighteenth century to make repairs and now often to replace parts (utilizing the machine dimension of humans to advantage), when disabilities that are seen as simply organic

but are based on the failure to achieve certain sorts of culturally established language and communicative norms that lead persons to be disenfranchised or in extreme cases to be imprisoned in institutions (in other words, defining the proper “machine function” by cultural ideals of human being that says one *should* experience the senses as distinct, for example, and not overlapping in an autistic sense), or when a history of agricultural cultivation has led to utilizing the “mechanisms” of animals as unfeeling, replaceable cogs (confusing animals with machines—like hens lined up and piled atop each other in “assembly lines” their entire lives—to the formers’ acute disadvantage). The list of conflation of humans, animals, and machines in confused and destructive ways, both old and new, would go on for chapters and need not be rehearsed here. However, to mention these confusions can bring to mind the need to define these differing realms in *both* their inseparability *and* difference, in their capacities for mutual destructiveness, and in their capacities to help each other’s realm achieve distinctive excellence.

At Stanford University in 1987, a conference was held to try to sketch out the boundaries and overlaps among humans, animals, and machines. The resulting presentations were published as *The Boundaries of Humanity: Humans, Animals and Machines*. When one reads the essays, it is clear that none of the conference presenters had a cogent sense of how to draw these boundaries or even to articulate what was distinctive about humans, animals, and machines. Advances in computer science, neurophysiology, genetics, ethnography, biology, philosophy, critical theory, communications, and so many other fields have perhaps made this task more plausible now, have at least given us more data and theories to consider, and certainly also have made the need more pressing. A book such as Bruno Latour’s *Politics of Nature* calls for the formation of a new collective that includes humans and nonhumans in ways that no longer oppose nature and culture, matter and spirit, politics and science, and the animate and the inanimate and avoids other dualisms that have left humans, animals, and machines as adversaries, yet Latour despairs and derides any attempt to find a new way of philosophically articulating the being of these realms and their interrelations. He feels that such a task is overwhelming and unnecessary to the practical dialogue of working out the ramifications of science and technology.⁴ He seems to assume, as do many in popular culture and the academy, that any attempt to really articulate the distinctive senses of being in each of these realms and in their interrelation will lapse back into some traditional metaphysical speculation that cares not a whit about the advances in scientific, empirical research, nor the practical exigencies that come from the collisions of these realms with cultural values, economic realities, and political processes.

I will assume the opposite of Latour: the only way we can proceed with sensitivity and creativity in responding to the advances in what Haraway

calls “technoscience” is to have a better sense of what makes each of these realms—humans, animals, and machines—distinctive and also inseparable. I also will assume that philosophy is up to the task of returning to the concrete phenomena of the varied sciences and social sciences, as well as to the arts and humanities in their concrete articulations of data or insights of another sort, and providing a dialogue of the results of these fields, giving us insights into their significance. We can probe the identities of the realms these fields uncover, even if they are not the old eternal essences of metaphysics but are, rather, the fluid, evolving, and problematic coming together of differing perspectives that cross-fertilize and also break off in differing vectors, only to rejoin again at some later point. The image we need for these results is of a nonlinear equation’s graph with its myriad branches and discontinuities, rather than the incremental, straight-line and consistently predictable Cartesian graphs that the old philosophies and sciences sought as companion models and emblems of their thought.

Doing Away with Hierarchy Can Preserve Uniqueness

In order to achieve the aforementioned task, however, we will have to leave aside preconceptions of what is obvious about each realm, and the most difficult, of course, is to hold in abeyance those self-attributions of humans that increase our self-esteem in the household of the universe. As all writers who venture over ecological terrains point out, the *oikos* that is the first part of that word (“eco”), the Greek for “household,” does not mean our human domain but a much larger kinship, ordering, linking, and relating with myriad beings. For this book, we will need to leave this horizon as open as possible for a time. Humans have been persistent in varied cultures in seeing themselves as special—not just different from other beings—but somehow privileged, more valuable, a reflection or an instantiation of the divine. For more modern atheists, humans often have been considered the pinnacle of billions of years of material and biological evolution culminating in the great engineering being, destined to control the others. This sense of human superiority is not universally true, however, of all cultures or historical periods. Some cultures have insisted that humans are merely the two-legged ones in a larger family gathered under the Great Spirit of four-legged ones and winged ones, such as in many Native American tribal perspectives, or that our celebrated language abilities are part of a larger voice originating in the myriad beings of the world and universe for whom we happened to be the speaking or writing instrument.

We can be unique, as indeed all beings can be unique, without being better, more intrinsically valuable. This placing ourselves on a higher plane

has taken us out of the interplay of other beings on the planet in such a way that perhaps much of what we experience has come to seem mysterious or fantastic or just not plausible. It is a strange fact that both those on the one extreme, who believe in religious views based on the divine as supernatural and as utterly certain, and those on the other extreme, scientists who feel that any talk of emotion, consciousness, or spirituality in regard to animals or the material world is somehow not properly factual, are united in keeping humanity distinct from the rest of the planet. Animals, inanimate matter, and machines must be seen as included in a differing realm by both those who claim absolute insight into human's spiritual superiority to the rest of the planet and those who deny that there are any mental, spiritual, or emotional realities that can be known. Yet I feel that our thinking must be based on what we experience, whether personally or collectively, scientifically or spiritually, otherwise we risk being ignorant of the relationships that make our lives as valuable and meaningful as they are. The dogmas of religiously inflexible doctrines or scientific theories claiming certainty, but ungrounded in our current experience, may offer worthwhile visions of possible futures, but the first order of business is seeing where we are in the variety of the cultural, historical, and material settings in which we find ourselves. I recognize that there is a problem in "just paying attention to experience." There are grave challenges to this goal, too, and I will return to consider them.

However, it is not just a problem of method and what counts as knowing or understanding that has prevented so many philosophies, religions, psychologies, myths, artworks, and scientists from exploring fully the ways we might be on a *horizontal plane* of distinct differences within an inseparable linkage with the beings of this planet—instead of *being above* other creatures and inanimate beings. This prospect of being on an equal footing with the rest of the planet or even the cosmos as miraculous and worthy of respect, as special, but also as an integral part of larger movements than the merely human, has rattled something very deep in many cultures' collective psyches.

Few have had the feeling of Siddhartha Buddha in his going forth from the palace in order to encounter reality after being sheltered from life by his father for the first time in his three decades, when he was overcome by the sight of worms and insects that had been torn apart by the plow or crushed under his own feet while walking upon the land. Few have seen the littered bodies of insects and worms on the ground at their feet and become as "overcome with grief as if he has witnessed the slaughter of his own family."⁵ This radical sense of interconnectivity and lack of hierarchy, the savoring that each being is unique and intrinsically valuable, has been a rare and often seemingly rarified feeling and, many would say, merely

sentimental. A sentiment is a feeling that is of our individual or collective ego's creation, propelled by an idea, and often a faddish one. Sentiments do not require a radical openness and a deep responsiveness. They are projected onto things or people. Yet, there may be profoundly sensitive emotions of wonder, awe, joy, grief, playfulness, empathy, and others that can be cultivated to the larger surround, and Siddhartha's may be among these. We may not have simple access to the deepest feelings possible in regard to the surround *without work*—the work of integrated feeling, thought, and articulation. However, this work of articulation cannot happen if we cling to a notion of being both separate and above as required by an ego insecurity built into our cultural thinking. It is not imperative to begin thinking through these issues by merely accepting intuitions such as Siddhartha's, but it is necessary to be open at least to the possibility of this interconnectedness. If we are open to feelings that suggest these insights, then we can better explore the depths and complexity of how we are related to other beings. This requires not being repulsed at the outset as if there is a contagion within the idea of our interconnectedness or a lack of revealing sensitivity in such feelings of kinship.

The contagion felt by some in giving up the first rank, the highest order above other beings, is the sense of some that to be interconnected, of equal worth, is to enter the impurity of mixing categories, an affront to clear thinking and even a kind of moral transgression to mix that which should be separate. This tradition has roots that go back to ancient times, at least to the fertile era when Plato thought one should die to the earth, its sensual pull and emotional resonances, fighting the shifting tides of the earth that would condemn the soul to lose its own purity and separate identity; echoed by the Indian sages of the Upanishads, who cautioned against getting lost on the roads of the mazes of desire by allowing the chariot of self to be pulled astray by the "horses" of the senses instead of transcending to the purity of the Atman; or modulated differently in the same era by the nonascetic message of China's Confucius to restrain, control and order the senses and the emotions through fealty to the power of law, rites, and the ancestors above. Yet the imperative of humanity to detach itself in a higher dignity from the rest of the earthly, although a global theme (and also countered by many other cultures and traditions), has certainly been transmuted into a new level of power and worldwide influence through humanism's and science's evolution into technoscience and global consumerist capitalism.

Unlike the earlier traditions, which opposed human dignity to the slime of the earth, the newer ideologies of detachment from the earth seem to imply a more equal linkage with the beings of the globe that are manipulated and used in various processes of production or within technoscience. They seem to invoke an obsession with materialistic satisfaction as the end point

of humanity. However, these postmodern stances in their apparent materialism are misleadingly still detached from the material surround about us. Technoscience and postmodern capitalism focus only on the *possession* and *consumption* of *objects*—beings crafted or identified in certain socially and economically promoted categories of value—which is not a hearkening to the significance to be found in the material surround, whether of the natural world or in communally expressive projects. It is another sort of imposition upon the surround of prefabricated and insular goals. This focus on the world around us is not one of sensitive encounters and dialogue—with the richer materiality of the earthly that contains alien voices to which to hearken. Insofar as we cling to our superior purity above the animal, the machine, and the inanimate, the level of spontaneous communication with much of our surroundings remains closed.

Ambiguity, Openness to Experience, Phenomenology, and Nondualism

I alluded before that it is not so easy to say we will be “open to experience,” as if that approach to inquiry is any more self-evident than any other theory. An invocation to openness of experiencing often rightfully invites the question, “Whose experience?” Experiences seem to vary so widely given personal, historical, cultural, ideological, and other differences. Scientists are right to be careful about safeguarding against being caught up in distorting culturally bound interpretations, and religions also are right that “the facts” can always be reinterpreted meaningfully in another context. In order to avoid some of the problems we will encounter in looking at animal studies, artificial intelligence (AI) research, neuropsychology, and other scientific or social scientific fields, as well as philosophy, literature, and other fields in the humanities, I am going to pursue a certain method of thinking that I will quickly sketch out here. I find myself at odds with academic writing and thinking in finding little gain in offering elaborate explanations and justifications of method. The audiences with whom I most desire dialogue are thoughtful adults of all walks of life, including, I might add, academics who can speak with other members of the community more straightforwardly, who are willing to see where one’s way of proceeding leads, to what sorts of insights. I will not indulge in arcane terminology, long-winded arguments, and justifications for a method, other than to ask the reader to be patient in considering in the course of the book what it allows us to see together.

If people of many different cultures and historical periods consider it reasonable to assert that animals can feel emotions or perceive objects, and yet a philosopher or scientist says it is impossible for such and such a theoretical reason, then my bias or perspective will be to take these groups

of people seriously, to hearken to their experiential sense, their perceptual understanding. If people in all cultures assume they know other people and feel together with them certain shared emotions such as love, and a philosopher questions whether we can ever know if another person is really a person or really thinks or feels like we do, then the ongoing sense of the overwhelming majority of people is the evidence I will follow. It will then be incumbent to describe how this is the case. As for the theories that deny this, I will assume that not only their philosophical point is not relevant to our considerations, but that there is something wrong with the way they are thinking that needs to be uncovered.

Given the aim of articulating philosophically the meaning and structure of how most people under identifiable circumstances experience the world, the way of proceeding that makes the most sense to me is phenomenological. By invoking this philosophical perspective, the aim is to question the relationships among humans, animals, and machines in a manner that remains faithful to the original inspiration of phenomenology as “back to the things themselves”—a cry for thinkers to rejoin the common world of experience and leave their ivory towers of theories that provide explanations but fail to articulate the texture and sense of the experience of many of us to some cogent degree. Even though the movement’s founder, Edmund Husserl, initially sought to find certainty and “see essences,” phenomenology soon was transformed into a never-ending attempt to describe more closely the always shifting, multidimensional, interrelated context of everyday experience among the many ways we have of encountering the world among natural and cultural inputs, among the varied ways of apprehending and expressing the world, from perceiving to imagining to thinking to feeling emotionally, and so on, and among the ebbs and flows with the beings of all sorts around us who address us indirectly in the midst of our addressing them. Perhaps most importantly phenomenological description aims to articulate the sense of people, of things, of cultures, and of relationships as they unfold within time, changing, evolving, and becoming more complicated and interwoven. Given this aim, phenomenology came to realize that to achieve rich, detailed description is a daunting, worthwhile task and is revealing of that kind of awakening to meaning and truth that philosophy seeks, as much as or even more than logically argued and abstract systems of propositions.

The approach to phenomenology that best exemplifies these points and can most cogently further this inquiry is Merleau-Ponty’s. He expressed the aim of phenomenology in a way that opens philosophy: “All its efforts are concentrated upon re-achieving a direct and primitive contact with the world and endowing that contact with a philosophical status.”⁶ In the paragraphs following that declaration, Merleau-Ponty makes clear that there are no “bare facts” or universal experiences to which we could return, and

that the best we can do is participate in an ongoing unfolding of our shared experiences of which we are all a part and about which we can only have an interpretation. However, he also insisted that ambiguity is not bad but a part of how we experience and understand things. He described how our perceptual access to the world is ambiguous in shifting rhythms of confusion and greater resolution. Our understandings based on this also continually shift and are open-ended. We do not come to “perfect” or complete answers. For example, we will see that there are ways one could interpret animal studies as showing that animals have superior memories to humans, but then we might also claim that these are not really memories in the same sense as human memories and fail to capture some of the powers of human memory. Rather than have to decide between these oppositional claims that one is true and the other false, it is more helpful to see the sense gained by considering both positions as revealing something important. This approach leads to a lack of closure to our questions, especially the wider and the deeper they go, but yields interpretations that are more suggestive. We can still see, despite the uncertainties, that some descriptions seem to open up more meaning that we can use to deepen our lives and our abilities to fathom others and our world. If some interpretations give whatever “facts” we provisionally have at that point more meaning, then they are worth trying to incorporate into a larger narrative. This deepening of possibilities and becoming more inclusive of perspectives is what I would like to achieve in this book. Certainly there are “bad” ambiguities when something is articulated in an unclear way when it can be formulated better, but there also are vectors of sense in perception and in conception, as well as in imagining and other modes of apprehension, which are unassimilable to perfect clarity and closure and yet suggest a depth of meaning.

Merleau-Ponty realized that we make sense of the world in ways in which both reason and emotion, both sense experience and memory, and both logic and imagination resonate together and among themselves in the fullness of the ways we perceive the world. One aspect of this perception of the world is shaped by the ideas and frameworks of interpretation we have been taught by our culture, family, and other institutional forces. This is part of the power of human insight that allows our historical and cultural sense—these interpretations do open up new possibilities for action and understanding. Yet these capabilities have dangers. Our perceptual life is deeper, our emotional life is deeper, and our imaginative life is deeper because of its integration and shaping by intellection and reason. However, rational frameworks also can restrict and distort these other levels of apprehension. Merleau-Ponty called the imposition of our ideas onto perception in occluding ways as screens to the particular and unique sense of meaning at the moment, “the experience error.” Whitehead, another beckoning guide

on this investigation, called this same distortion the “fallacy of misplaced concreteness.” Both meant to indicate that gaining access to what we really experience can be a difficult task when we see, hear, touch, feel, smell, and so on, through the filters of abstract preconceptions of the world. The realm of engaged, embodied, and committed experience that has important keys to the linkages of humans, animals, and machines will have to be unearthed painstakingly as we might not be able to even see or feel it without “cleaning the mirror,” as the Buddhists would put it, or finding other depths that have receded into the background, as Merleau-Ponty would put it, given that our categories may block access to parts of who we are and what our world is. These are *motivated* distortions in that they serve cultural agendas, personal defenses, ideological aims, and so on, so our blindness to their shaping power resists revelation. So, for example, when this book ends with a consideration of how human wars have disrupted elephant cultures and societal structures, we will need to abandon our tightly held notions of how institutions and cultural structures are only human structures of existence and be able to hearken to evidence of elephant culture through scientific observation, extrapolation of concepts, imagination, empathy, intuition, and a host of other ways of allowing the experience of the other being’s experience as well as new ideas about the earth to emerge. We may literally see rampaging elephants but not “see” the connection to the damage we have inflicted upon their kinship structures, for example, because we do not want to be challenged to change our human ways and compromise interests that we wish to maintain.

Embodiment as Cooperation with the Surround

To examine the overlaps and blurrings of boundaries of humans, animals, and machines—the locus where all three are interdependent historically and in terms of future directions—without one-sided preconceived responses or applying naively moralistic categories entails looking at or perhaps listening to—hearkening to—the phenomena from a different perspective on embodiment in relation to materiality. To find the places where humans can be surprised and taken aback by new senses of animals and machines, and of humans in their overlap with animals and machines, as well as to see the suffering of the collisions of these realms, requires entering the depth of the meaning of the material realm “taken in” by the body that binds these beings. The binaries of matter versus mind, inanimate being versus animate, nature versus culture, body versus spirit, emotion versus matter, reason versus emotion, logic versus imagination, abstraction versus memory, self versus other, and so many consequent chains of oppositions follow from a dualistic,

reflective perspective on bodies and materiality. They short-circuit attempts to think through the possible creative interpretations of the intertwining of human, animal, and machine. My method in this book will be to get beyond or beneath or to “the other side” of these dualisms, and to embrace many ways of knowing, if they seem to help us take in the world in meaningful and less fragmented ways.

These dualisms are undercut by the notions of an “earthbody” and of “dream-filled materiality” (oneiric materiality), which are notions about which I have written—where the first would make us reconsider if our embodiment, as a dynamic process, an ongoing activity, is a taking in of both information and also meaning, and then the expressing through the interrelations of ourselves with myriad other material beings. This means that as embodied beings we are enmeshed in the world with which we relate in such a way that we are woven into its fabric. If the power of abstract reflection is to *pull away* from being “caught up” in things, to think through the relations of which we are a part from a needed distance, then the body, through perception and the other powers mixed within it, is our *way into* the world. The body, in perceiving, “plunges into the things perceived,” (PP, 67) as Merleau-Ponty phrases it, and enters a round dance, where each object is a “mirror” to all others (PP, 68). By being taken up *somewhat* (to some indeterminate and changeable degree) as a body in one object, like the tree beside me, the perceiver also is taken up into the bush beside it and the perspective of the leaves at the top. This articulation by Merleau-Ponty of what he will come to call “the flesh of the world” (in *The Visible and the Invisible*) is a Western attempt to say something parallel to what the Zen archery master tells Eugen Herrigal in *Zen and the Art of Archery*, when he foolishly grins with self-satisfaction that after years and years of trying, he has finally “let go” and made a good shot! The master tells him that he did not shoot the shot, but rather “It shoots.”⁷ The master does not mean some supernatural force or some sort of special energy, but that Herrigal’s wife was part of the shot, the flowers she has learned to arrange that taught her a certain patience, responsive sensitivity, and concentration were part of the shot, the master was part of the shot, the master’s teacher, the man who made the bow, the archery hall, the arrow itself, and so on. In other words, everything in its interrelation gave rise together to the shot as taken up by the way the body allows these energies and meanings to flow through it apprehendingly and expressively. This is what I meant to indicate as an “earthbody,” that our perception and overlapping feelings, emotions, memories, imaginative echoes, and so on are not “our accomplishments” but “co-accomplishments” with all those beings to which we are related. Perception is a gathering together of all of these levels of meaning. Notice, however, the logic of ambiguity: we are not *one* with trees or archery halls but, rather,

there are just energies, directions, senses that flow among us yet are still uniquely what each one is. It is a “knit” or a “weave” and not a fusion (or a “coincidence,” to use the philosophical term).

The second notion would ask us to also forestall our traditional categorizations and consider materiality not as inert, dead stuff but as a way to give heft, to find in a certain place, to make encounterable and shapeable ideas, feelings, thoughts, memories, imaginings, intuitions, and so on in a way parallel to how the sensual perceptions of dreams become the substance of different dimensions of experience for us each night. Perhaps without the solidity of rock, we could not feel the solidity of our purpose or the calm of being secure. This book invites us to see, whenever possible, how contributions to meaning may come from many sources cooperatively. The material world with its qualities can be objectified for many important purposes, but qualities such as the blue of the sky or the lake, the slow rhythm of a gesture made by either an animal or a human, or the dark of the middle of the night also can be explored as dimensions of meaning that are passed along among beings and go beyond the merely quantifiable. Perhaps it would be better to say that there is a “material sense” embedded within all things that may infiltrate humans, animals, and whatever becomes responsively interactive with them.

Some will say that this sort of significance is merely a cultural production, a projection of a group of humans onto the world, whether the sense of blue skies or the rhythm of certain gestures, and try to break the link of human with the natural, animal, and inanimate world. Equally, in an opposite position, some will assert that the world has its inherent sense, and that we just manipulate what is given to us, but there is no dialogue, just the givenness of the world. It seems obvious that there is no “answer” to nature versus culture, nurture versus nature, because to pose these oppositions has already broken apart their interdependence that gives us the very texture of our experience. Rather than start with the traditional opposition that defies our articulable experience, we will assume a continuum and an interplay of the cultural and the natural throughout this work, unless there are good reasons to abandon it with a particular instance. As we work toward finding ways to create a collective of various beings, the terms *nature* and *culture* will have to give way to something more like Haraway’s “naturecultures,” since this division is unsupportable in its arbitrariness once we are dealing with the experience of beings with whom we are active and engaged and not just as conceptualized. For example, approaching a dog with the preconception that this being is merely a machine will most probably give way over time to its nuzzles and licks and frolics, as we will see, as even the dean of the Harvard Divinity School or the MIT computer scientist was caught unaware by experiencing for a moment an artificially intelligent robot as a fellow human.

Meaning-Bearing Matter

For all of the current global materialism, matter is mainly known negatively, as either that which just obstinately and mutely resists us or that which we manipulate to display properties we find useful or entertaining. Matter as speaking or insinuating into our being meanings of all sorts is foreign to us. We think of matter as inert, as dumb, as senseless, and as self-contained. Yet what a strange predicament for a material being to fall into—to become closed off to the ongoing communication with other material beings! If we can at least start being open to the possibility of materiality as *impacted* with the meaning usually thought of solely as the product of humans and their “consciousness”—impacted in the sense of having a grain, being full of or being dense and rich with significance that is insinuated to us.

Matter is an activity, too, as we are—as animals are, even as machines are. Like us, or these other beings, matter as activity can only be fully understood through tracing its contours and rhythms. Again, we seek to articulate things through time, as we actually live and experience, as the world actually exists, dynamically and evolving in myriad ways. To be open to meanings that are the interdependent *process of emergence* from the “holdings” of matter with human interlocutors in a depth of memory, imagination, reason, emotion, and intuition would mean that we ourselves as humans could be encountered as “open systems” that are partially machine and animal, even if something unique emerges in our distinctive human activity. By “holdings” of matter, I mean the way in which meaning “inheres” or “dwells in” the things around us. For example, in an explicit, personal way, we might return to a town we lived in long ago and suddenly be flooded by a series of memories about the time we lived there, the people we knew, and events that occurred. It might well be that these memories would never have occurred to us without being within that material context of the town. The memories arise from the interweaving of ourselves and the locale and have been “held” within the streets, the houses, and the roads of the place as much as within our brains as a series of traces to become active again within that encounter or energy flow. On an implicit, impersonal level, a person sitting on the riverbank may suddenly have a sense of calmness from the steady flow of the current or a sense of the movement of time or of the unfolding of his or her life. Another way to say this is that these are the “murmuring of things” about which Gaston Bachelard wrote at length—that the world has its significances in its different material dimensions and specific shapes that we can “hearken to” when we are quiet and open to their copresence with us. Bachelard found distinctive flows of sense and energy within flames, fire, in water, lakes, ponds, oceans, within the air, wind, fog, and within the earth, rock, soil, and dirt, to name a few of the myriad material dimensions

of sense he articulated and found resonating within poetry and literature. The presence of other beings is neither utterly closed off, impenetrable, nor is it open, transparent, but rather it is suggestive, implied, in numerous and powerful ways that shape lives, not only our own.

The primary level of matter and human, animal and machine, may be found in a level some have called “symbolic,” or something we might call more “oneiric” or dreamlike than our rational, deliberate way of making sense—something more like a primary process or processing of embodied consciousness that emerges from our taking in the world in perception. It is a level in which qualities, whether of feeling at home or at harmony, those fragile atmospheric senses emergent through the interaction among beings, come to the fore. That is how we have access to facts, whether through our senses or instruments that augment the senses, as inseparable from how we get other levels of meaning. *First*, for example, we feel amazement at the fragility and intricacy of the spiderweb, or feel its tinkling quiet suspend our calm, *then* we rationally explore the makeup of the fiber, the conditions that promote its production, and so on. I propose to explore a depth of differing layers in how the world is given to us in perceptual experience as interwoven with feeling, emotion, imagination, reasoning, memory, and the cultural. This level of the way the world is processed, or perhaps more properly identified as a process *between* ourselves and the world, will be our focus, even if it might be habitually ignored and suppressed.

This kind of engaged perceptually grounded understanding is an “embodied intelligence” that is being recognized in fields such as philosophy, psychology, and artificial intelligence science (and elsewhere). Such an understanding is not the product of a central human agency, or of a mystical entity lodged within us such as the “mind” but emerges as a process within the embodied interaction of beings with other sorts of beings in their surround through their material interweaving. However, to grasp it we need new senses for terms such as engagement, learning, place, motion, transition, envelopment, spirit, and Eros in order to find where these realms of human, animal, and machine meet. The description of this site can open new dimensions of meaning, identity, and cooperation while also providing a new sensitivity to varied senses of violation in all three realms that impact the biosphere, ethical issues, questions of diversity, and the quality of human life. However, to discover whether the descriptions can provide this meaning entails first looking at the complicated material interactions of our perceiving and expressive bodies with those of animal creatures also within this matrix of the surround and now, too, with those created mechanical beings that transform the material, perceivable world.

Hopefully this book can draw upon varied sources from Heidegger’s discussions of animals to those of autistic writer, Temple Grandin, as she

works with cows and other animals, from considering shifts in the studies of artificial intelligence in MIT's "embodied intelligence" project to how it stands with the hardware of human intelligence in considering work on brain science and advances in technology, from considering modern physics to older sources in philosophy, such as Kant, Langer, and Merleau-Ponty, whose poetic and phenomenological works tease out the depths of experience, and newer sources in philosophy, such as Baudrillard, and psychology and neurobiology, such as Daniel Siegel. The interdisciplinary blending of sources will run throughout the book as much as the many kinds of varied beings will be presented in finding resonances and juxtapositions among them. This is another ramification, I believe, of a fully phenomenological approach: that differing aspects of how something comes to be and thrive within its interrelations need to be brought into play from differing disciplines. It is the hope of this work that by moving from the many discussions of the boundaries of humans and machines and of humans and animals to a consideration of all three realms together there might be made possible another sort of creative redefinition. Given that most discussions of the boundaries among any two of these realms invariably use metaphors, images, and schemata that refer to all three, it seems that it is time to think of all three realms together.