



WHAT IS POSTHUMANISM?

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Introduction What Is Posthumanism?

IT IS PERHAPS AN APPROPRIATELY POSTHUMANIST GESTURE to begin this book with the results of a Google search. As I write (in summer of 2008), if you Google “humanism,” you’ll be rewarded with 3,840,000 hits; “posthumanism” yields a mere 60,200. (Apparently humanism is alive and well, despite reports of its demise.) You will notice at a cursory glance that despite the discrepancy in numbers there appears to be much more unanimity about humanism than posthumanism. Most definitions of humanism look something like the following one from Wikipedia:

Humanism is a broad category of ethical philosophies that affirm the dignity and worth of all people, based on the ability to determine right and wrong by appeal to universal human qualities—particularly rationality. It is a component of a variety of more specific philosophical systems and is incorporated into several religious schools of thought. Humanism entails a commitment to the search for truth and morality through human means in support of human interests. In focusing on the capacity for self-determination, humanism rejects the validity of transcendental justifications, such as a dependence on belief without reason, the supernatural, or texts of allegedly divine origin. Humanists endorse universal morality based on the commonality of the human condition, suggesting that solutions to human social and cultural problems cannot be parochial.

Posthumanism, on the other hand, generates different and even irreconcilable definitions. The Web site www.posthumanism.com provides a gloss on the term that most of the philosophers and scholars named on Wikipedia’s page for “posthumanism”—Michel Foucault, Judith Butler, Bruno Latour, and Donna Haraway, among others—would not just refine but for the most part oppose. For the purposes of this book, I choose to see in this confusion not a cautionary tale but an opportunity.

The term “posthumanism” itself seems to have worked its way into contemporary critical discourse in the humanities and social sciences during the mid-1990s, though its roots go back, in one genealogy, at least to the 1960s and pronouncements of the sort made famous by Foucault in the closing paragraph of *The Order of Things: An Archaeology of the Human Sciences*, where he writes that the historical appearance of this thing called “man” was not

the transition into luminous consciousness of an age-old concern, the entry into objectivity of something that had long remained trapped within beliefs and philosophies: it was the effect of a change in the fundamental arrangements of knowledge. As the archaeology of our thought easily shows, man is an invention of recent date. And one perhaps nearing its end.

If those arrangements were to disappear as they appeared, if some event of which we can at the moment do no more than sense the possibility—without knowing either what its form will be or what it promises—were to cause them to crumble, as the ground of Classical thought did, at the end of the eighteenth century, then one can certainly wager that man would be erased, like a face drawn in sand at the edge of the sea.¹

By way of another well-known genealogy—one also directly relevant to this book—posthumanism may be traced to the Macy conferences on cybernetics from 1946 to 1953 and the invention of systems theory involving Gregory Bateson, Warren McCulloch, Norbert Wiener, John von Neumann, and many other figures from a range of fields who converged on a new theoretical model for biological, mechanical, and communicational processes that removed the human and *Homo sapiens* from any particularly privileged position in relation to matters of meaning, information, and cognition.

More recently, the term has begun to emerge with different and sometimes competing meanings. The first time I used it (hyphenated, no less) was in an essay from 1995, called “In Search of Post-humanist Theory,” on the work of Humberto Maturana and Francisco Varela in a special double issue of *Cultural Critique* called “The Politics of Systems and Environments” that I coedited with William Rasch.² That project included a roundtable conversation with Niklas Luhmann and Katherine Hayles; Hayles picked up the term (with a rather differ-

ent valence, as we will see in a moment) in her book *How We Became Posthuman* (1999). Meanwhile, in the United Kingdom, critics such as Neil Badmington and Elaine Graham gravitated toward the term, with Badmington's edited collection *Posthumanism* (2000) being a notable attempt at consolidation.³ That body of work in the UK (as suggested by the title of Badmington's subsequent book *Alien Chic: Posthumanism and the Other Within*, and by Graham's *Representations of the Post/Human: Monsters, Aliens, and Others in Popular Culture*) tended toward a sense of posthumanism perhaps best glossed (as Badmington rightly notes) in what is probably its locus classicus in recent critical writing: Donna Haraway's "A Cyborg Manifesto" (1985), which, as the title suggests, engages science-fictional thematics of hybridity, perversity, and irony (her terms) that are, you might say, radically ambivalent in their rejection of both utopian and dystopian visions of a cyborg future.⁴

Arguably the best-known inheritor of the "cyborg" strand of posthumanism is what is now being called "transhumanism"—a movement that is dedicated, as the journalist and writer Joel Garreau puts it, to "the enhancement of human intellectual, physical, and emotional capabilities, the elimination of disease and unnecessary suffering, and the dramatic extension of life span. What this network has in common," Garreau continues, "is a belief in the engineered evolution of 'post-humans,' defined as beings 'whose basic capacities so radically exceed those of present humans as to no longer be unambiguously human by our current standards.'" "Transhuman," he concludes, "is their description of those who are in the process of becoming post-human."⁵ As one of the central figures associated with transhumanism, the Oxford philosopher Nick Bostrom, makes clear, this sense of posthumanism derives directly from ideals of human perfectibility, rationality, and agency inherited from Renaissance humanism and the Enlightenment. (And in this, it has little in common with Haraway's playful, ironic, and ambivalent sensibility in "A Cyborg Manifesto," which is suspicious—to put it mildly—of the capacity of reason to steer, much less optimize, what it hath wrought.) As Bostrom puts it in "A History of Transhumanist Thought," transhumanism combines Renaissance humanism "with the influence of Isaac Newton, Thomas Hobbes, John Locke, Immanuel Kant, the Marquis de Condorcet, and others to form the basis for rational humanism, which emphasizes

empirical science and critical reason—rather than revelation and religious authority—as ways of learning about the natural world and our place within it, and of providing a grounding for morality. Transhumanism has its roots in rational humanism.”⁶

To help make his point, Bostrom invokes Kant’s famous essay of 1784, “What Is Enlightenment?": “Enlightenment is man’s leaving his self-caused immaturity. Immaturity is the incapacity to use one’s own understanding without the guidance of another. . . . The motto of enlightenment is therefore *Sapere aude!* Have courage to use your own intelligence!”⁷ Here, however, it is useful to recall Foucault’s suggestion from his essay of 1984 by the same title: that if we commit to “a permanent critique of ourselves,” then we must “avoid the always too facile confusions between humanism and Enlightenment,” because “the humanistic thematic is in itself too supple, too diverse, too inconsistent to serve as an axis for reflection.” Indeed, as Foucault notes, “it is a fact that, at least since the seventeenth century what is called humanism has always been obliged to lean on certain conceptions of man borrowed from religion, science, or politics. Humanism serves to color and to justify the conceptions of man to which it is, after all, obliged to take recourse.”⁸ What Foucault draws our attention to (aside from the sheer heterogeneity of the historical varieties of “humanism,” several of which he enumerates) is that humanism is, in so many words, its *own* dogma, replete with its own prejudices and assumptions—what Étienne Balibar calls “anthropological universals,” which are themselves a form of the “superstition” from which the Enlightenment sought to break free. For example, in social Darwinism (and this example has particular resonance for transhumanism, as its critics would be the first to point out), we find, as Balibar notes, “the paradoxical figure of an evolution which has to extract humanity properly so-called (that is, culture, the technological mastery of nature—including the mastery of human nature: eugenics) from animality, but to do so by means which characterized animality (the ‘survival of the fittest’) or, in other words, by an ‘animal’ competition between the different degrees of humanity.”⁹

Against this background, I emphasize two crucial points regarding my sense of posthumanism in this book. The first has to do with perhaps *the* fundamental anthropological dogma associated with humanism and

invoked by Balibar's reference to the humanity/animality dichotomy: namely, that "the human" is achieved by escaping or repressing not just its animal origins in nature, the biological, and the evolutionary, but more generally by transcending the bonds of materiality and embodiment altogether. In this respect, my sense of posthumanism is the *opposite* of transhumanism, and in this light, transhumanism should be seen as an *intensification* of humanism. Indeed, one well-known figure associated with transhumanism, Hans Moravec, draws Hayles's ire for precisely this reason. "When Moravec imagines 'you' choosing to download yourself into a computer, thereby obtaining through technological mastery the ultimate privilege of immortality," Hayles writes, "he is not abandoning the autonomous liberal subject but is expanding its prerogatives into the realm of the posthuman."¹⁰ Hayles is no doubt right, and though she is quick to add that "the posthuman need not be recuperated back into liberal humanism, nor need it be construed as anti-human," the net effect and critical ground tone of her book, as many have noted, are to associate the posthuman with a kind of triumphant disembodiment.¹¹ Hayles's use of the term, in other words, tends to *oppose* embodiment and the posthuman, whereas the sense in which I am using the term here insists on exactly the opposite: posthumanism in my sense isn't posthuman at all—in the sense of being "after" our embodiment has been transcended—but is only *posthumanist*, in the sense that it opposes the fantasies of disembodiment and autonomy, inherited from humanism itself, that Hayles rightly criticizes.

My sense of posthumanism is thus analogous to Jean-François Lyotard's paradoxical rendering of the postmodern: it comes both before and after humanism: before in the sense that it names the embodiment and embeddedness of the human being in not just its biological but also its technological world, the prosthetic coevolution of the human animal with the technicity of tools and external archival mechanisms (such as language and culture) of which Bernard Stiegler probably remains our most compelling and ambitious theorist—and all of which comes before that historically specific thing called "the human" that Foucault's archaeology excavates.¹² But it comes after in the sense that posthumanism names a historical moment in which the decentering of the human by its imbrication in technical, medical, informatic, and economic networks is increasingly impossible to ignore, a historical

development that points toward the necessity of new theoretical paradigms (but also thrusts them on us), a new mode of thought that comes after the cultural repressions and fantasies, the philosophical protocols and evasions, of humanism as a historically specific phenomenon.

Here we would do well to recall Foucault's insistence on the difference between humanism and Enlightenment thought—namely, that humanism's "anthropological universals" underwrite a dogma for which the Enlightenment, if we are true to its spirit, should have no patience. As Foucault puts it, "In this connection I believe that this thematic which so often recurs and which always depends on humanism can be opposed by the principle of a critique and a permanent creation of ourselves in our autonomy: that is a principle that is at the heart of the historical consciousness that the Enlightenment has of itself. From this standpoint I am inclined to see Enlightenment and humanism in a state of tension rather than identity."¹³ It is precisely at this juncture that I want to locate a fundamental intervention that this book attempts to make: namely, that even if we admire humanism's suspicion toward "revelation and religious authority" (whose stakes are all the more pitched at the current geopolitical moment),¹⁴ and even if we take the additional posthumanist step of rejecting the various anthropological, political, and scientific dogmas of the human that Foucault insists are in tension with Enlightenment *per se*, we must take yet another step, another post-, and realize that the nature of thought itself must change if it is to be posthumanist.

What this means is that when we talk about posthumanism, we are not just talking about a thematics of the decentering of the human in relation to either evolutionary, ecological, or technological coordinates (though that is where the conversation usually begins and, all too often, ends); rather, I will insist that we are also talking about *how* thinking confronts that thematics, what thought has to become in the face of those challenges. Here the spirit of my intervention is akin to Foucault's in "What Is Enlightenment?"; the point is not to reject humanism *tout court*—indeed, there are many values and aspirations to admire in humanism—but rather to show how those aspirations are undercut by the philosophical and ethical frameworks used to conceptualize them. To take only two examples that I discuss later in this book, most of us would probably agree that cruelty toward animals is

a bad thing, or that people with disabilities deserve to be treated with respect and equality. But as we will see, the philosophical and theoretical frameworks used by humanism to try to make good on those commitments reproduce the very kind of normative subjectivity—a specific concept of the human—that grounds discrimination against nonhuman animals and the disabled in the first place.

Similar limitations may be identified not just in the post- of transhumanism but also in some who rightly criticize it. As R. L. Rutsky points out with regard to Hayles's governing theoretical model, "The posthuman cannot simply be identified as a culture or age that comes 'after' the human, for the very idea of such a passage, however measured or qualified it may be, continues to rely upon a humanist narrative of historical change. . . . If, however, the posthuman truly involves a fundamental change or mutation in the concept of the human, this would seem to imply that history and culture cannot continue to be figured in reference to this concept."¹⁵ In other words, there are humanist ways of criticizing the extension of humanism that we find in transhumanism (or "bad" posthumanism). Rutsky locates a central symptom of this fact in Hayles's use of the concept of mutation in *How We Became Posthuman*, where mutation is rendered, Rutsky writes, as "a pre-existing, external force that introduces change into a stable pattern (or code), and into the material world or body as well." But mutation, Rutsky points out, by definition "cannot be seen as external randomness that imposes itself upon the biological or material world—nor, for that matter, on the realm of culture. Rather, mutation names that randomness which is always already immanent in the processes by which both material bodies and cultural patterns replicate themselves."¹⁶

From this vantage, the problem is that there is nothing in Hayles's theoretical model of historical progression (which is derived from a specific set of humanist conventions and protocols of historiography whose problematic nature Foucault himself—under the influence of Canguilhem, among others¹⁷—sought to expose) that takes this fact into account. Moreover, her notion of mutation as an external force points, as Bruce Clarke has recently put it, toward "a radical distinction between matter and information, substance and form," one that remains "in a realm of dialectical antithesis, which observes that the concept of the human has lost its balance and/or its foundations, and

that responds either with lament or delight.”¹⁸ But what is needed here, as Rutsky rightly points out, is the recognition that “any notion of the posthuman that is to be more than merely an extension of the human, that is to move beyond the dialectic of control and lack of control, superhuman and inhuman, must be premised upon a mutation that is ongoing and immanent,” and this means that to become posthuman means to participate in—and find a mode of thought adequate to—“processes which can never be entirely reduced to patterns or standards, codes or information.”¹⁹

In this light, it is worth recalling Clarke’s suggestion that the dialectical antithesis of matter and information corresponds to the first-order cybernetics of midcentury,²⁰ while the mutational, as Rutsky rightly understands it, points toward the necessity of a different logic, one consonant, as Clarke has pointed out by quoting Gregory Bateson’s suggestion three decades ago that “the whole of logic would have to be reconstructed for recursiveness”: a logic that is fundamental to the second-order systems theory that will be articulated in these pages. From this perspective, I want to underscore what will be a major point of emphasis in this book: that systems theory in its second-order incarnation, far from eluding or narratologically mastering the mutational processes just discussed, rather subjects itself to them—traces or tracks them, as Derrida might say (for reasons that will become clear later)—in just the way Bateson calls for. As Dirk Baecker puts it, second-order systems theory “may well be read as an attempt to do away with any usual notion of system, the theory in a way being the deconstruction of its central term.”²¹ Moreover, it is also worth remembering Derrida’s suggestion in his late essay “The Animal That Therefore I Am (More to Follow)” that perhaps the deepest logic of his investigation of “the question of the animal” is in fact “viral,” in the specific sense of a mutational logic of the trace structure of any notational form, any semiotic system, that exceeds and encompasses the boundary not just between human and animal but also between the living or organic and the mechanical or technical—a contention I take up in some detail in chapters 1 and 2.²² And it is precisely at this juncture that this book weaves together the two different senses of posthumanism that remained separate in my previous two books, *Critical Environments* and *Animal Rites*: posthumanism as a mode of thought in the first book (explored

there on the parallel terrains of pragmatism, systems theory, and post-structuralism) and, in the second, posthumanism as engaging directly the problem of anthropocentrism and speciesism and how practices of thinking and reading must change in light of their critique.

It is worth amplifying for a moment the disciplinary, institutional, ethical, and political stakes of this mutational, viral, or parasitic form of thinking. As David Wills notes (in terms quite resonant with Rutsky's insistence on taking seriously the force of the mutational), it is deconstruction's "constitutive dehiscence, its originary rupture or self-division, that defines it as a disturbance, displacement, or disruption of the status quo." Such a mode of thought "has enormous potential for resisting the self-assurance of any hegemonic discourse or practice," because it infects and mutates through the very structures, privileged terms, and discursive nodes of power on which it is parasitical (think here of Derrida's method of reading). "With the force and effect of a virus," Wills remarks, it "has its invasive parasitic impact precisely there where the border lines are drawn between and among nations, religions, systems of thinking, disciplines, within and between the ontological pretension of an *is* and the thetic possibility of an *in*."²³

I explore the force of this point for what we might call the ideology of a certain mode of contemporary historicism in literary and cultural studies in chapter 4, but for now I want to note that Wills's articulation of the viral activity of thought "within and between the ontological pretension of an *is* and the thetic possibility of an *in*" might well be taken as a shorthand definition of the fundamental distinction that is central to Luhmann's systems theory: the system/environment relation. That relation is not "an ontological pretension of an *is*" but a *functional* distinction, a temporally dynamic, recursive loop of systemic code and environmental complexity that is itself infected by the virus of paradoxical self-reference, a "thetic *in*" (to use Wills's terms) that will always constitute a "blind spot" and generate an "outside" for its own (or any) observation. For this reason, which I articulate in detail in chapter 1, "reality," in Luhmann's words, "is what one does not perceive when one perceives it."

It is here that we may locate the decisive turn of a thinking that is genuinely posthumanist, and it is also here that we may distinguish the work of Derrida and Luhmann from that of some illustrious fellow

travelers in posthumanist thought. There is the Lacanian version articulated most recently by Slavoj Žižek, according to which the self-referential attempts of the domain of the Symbolic to give meaning to or “gentrify” the domain of the “presymbolic Real” only generate, as a precipitate or “remainder” of that process, the very “outside” of the Real (now understood paradoxically as both pre- and post-Symbolic) they attempt to master.²⁴ There is the nearly Zen-like assertion of Gilles Deleuze that “I am an empiricist, that is, a pluralist,” his attempt (with Félix Guattari) “to arrive at the magic formula we all seek, PLURALISM = MONISM, by passing through all the dualisms which are the enemy, the altogether necessary enemy.”²⁵ There is Bruno Latour’s well-known assertion that “we have never been modern,” his insistence that the fundamental mechanism of modernity “creates two entirely distinct ontological zones: that of human beings on the one hand; that of nonhumans on the other,” even as it proliferates “hybrids of nature and culture.”²⁶ And there is Foucault’s archaeology of humanism to which I have already alluded.

But the first lesson of both Derrida and Luhmann (and in this they go beyond Foucault’s genealogical method, and beyond dialectical and historical accounts of the sort we find in Hayles) is that Enlightenment rationality is not, as it were, rational enough, because it stops short of applying its own protocols and commitments to *itself*. This is, of course, the entire point of Derrida’s deconstruction of many of the major concepts, texts, and figures in the Western philosophical tradition. And it is also the point of Luhmann’s attention to the formal dynamics of meaning that arise from the unavoidably paradoxical self-reference of any observation—a problem that is, for him, a historical phenomenon created by modernity as a form of “functional differentiation” of social systems. Long before the historical onset of cyborg technologies that now so obviously inject the post- into the posthuman in ways that fascinate the transhumanists, functional differentiation itself determines the posthumanist *form* of meaning, reason, and communication by untethering it from its moorings in the individual, subjectivity, and consciousness. Meaning now becomes a specifically modern form of self-referential recursivity that is used by both psychic systems (consciousness) and social systems (communication) to handle overwhelming environmental complexity. In this sense, Luhmann takes

the Kantian commitment to the autonomy of reason seriously but then submits that autonomy to the unavoidable problem of paradoxical self-reference—and in that sense he takes reason more seriously than Kant himself did, or at least takes it to require a more complex theoretical apparatus because of the increased complexity associated with modernity as functional differentiation.²⁷ As Luhmann puts it in *Observations on Modernity*, “The history of European rationality can be described as the history of the dissolution of a rationality continuum that had connected the observer in the world with the world.”²⁸ To call such a shift historical is not, however, to fall back into the narrative historiographic method I (and Foucault) have just criticized, since this new logic itself virally infects (or deconstructs, if you like) any possible historical account—a fact that (paradoxically, if you like) makes such an account historically representative: that is to say (in Luhmann’s terms), it makes it modern.²⁹

Thus what Derrida and Luhmann insist on more than any of the thinkers just noted is a thinking that does not turn away from the complexities and paradoxes of self-referential autopoiesis; quite the contrary, it finds there precisely the means to articulate what I will call the principle of “openness from closure,” which may itself be seen as the successor to the “order from noise” principle associated with first-order systems theory and inherited by successors such as complexity theory.³⁰ Here the emphasis falls, as it did not in these earlier theories, on the paradoxical fact theorized by both Luhmann and Derrida: the very thing that separates us from the world *connects* us to the world, and self-referential, autopoietic closure, far from indicating a kind of solipsistic neo-Kantian idealism, actually is generative of openness to the environment. As Luhmann succinctly puts it, self-referential closure “does not contradict the system’s *openness to the environment*. Instead, in the self-referential mode of operation, closure is a form of broadening possible environmental contacts; closure increases, by constituting elements more capable of being determined, the complexity of the environment that is possible for the system.”³¹ In Derrida’s terms, “The living present springs forth out of its nonidentity with itself and from the possibility of a retentional trace,” which constitutes “the intimate relation of the living present to its outside, the opening to exteriority in general.”³²

It is crucial, as we shall see in the following chapters, that the dynamics described here are not, for Luhmann or for Derrida, limited to the domain of the human. It is thus also in this precise sense—the sense in which the viral logic articulated here must be extended, as Derrida insists, to the “entire field of the living, *or rather to the life/death relation*”³³—that “the animal question” is part of the larger question of posthumanism. Indeed, for Derrida, these dynamics form the basis for deconstructing the various ways in which we have presumed to master or appropriate the finitude we share with nonhuman animals in ways presumably barred to them (as in the ability to know the world “as such” through our possession of language that is barred to animals, according to Heidegger). It is on the strength of that deconstruction that the question of our ethical relation to animals is opened anew and, as it were, *kept* open. In this connection, my use of Derrida and Luhmann here constitutes an extension and refinement of my deployment of the work of Humberto Maturana and Francisco Varela in “In the Shadow of Wittgenstein’s Lion,” where the emphasis falls on their contention that “every act of knowing brings forth world.” On the one hand, they point out that for us as “linguaging” beings, “every reflection, including one on the foundation of human knowledge, invariably takes place in language, which is our distinctive way of being human and being humanly active” in the world.³⁴ On the other hand, language arises—as it does in Luhmann’s account of “meaning” versus language proper—from fundamentally ahuman evolutionary processes of third-order structural couplings and recursive co-ontogenies linked in complex forms of social behavior and communication among so-called higher animals, which have themselves emerged from specific forms of embodiment and neurophysiological organization.

Indeed, as we will see in chapter 1, there are at least three different levels here that must be disarticulated: first, the self-referential autopoiesis of a biological system’s material substrate (its “conservation of adaptation” through autopoietic closure, on the basis of which—and only on the basis of which—it can engage in various forms of “structural coupling”); second, the self-referential formal dynamics of meaning (what Maturana and Varela will call, in the arena of living systems, the emergence of “linguistic domains”) that some (but not all) autopoietic systems use to reduce environmental complexity and interface with the

world; and third, the self-reference of language proper as a second-order phenomenon and a specific medium (what Luhmann calls a “symbolically generalized communications medium”) that is used by some (but not all) autopoietic systems that use meaning. None of these levels is reducible to the others; each has its own dynamics, its own evolutionary history, its own constraints and protocols. But this irreducibility, far from frustrating our attempts at explanation, actually greatly enhances them by necessitating what Maturana calls a “nonreductionist relation between the phenomenon to be explained and the mechanism that generates it.” As Maturana explains, “the actual result of a process, and the operations in the process that give rise to it in a generative relation, *intrinsically take place in independent and nonintersecting phenomenal domains*. This situation is the reverse of reductionism.” And this “permits us to see,” he continues, “particularly in the domain of biology, that there are phenomena like language, mind, or consciousness that require an interplay of bodies as a generative structure but do not take place in any of them”³⁵—what we will shortly see Luhmann theorizing in chapter 1 as the *difference* between consciousness and communication, psychic systems and social systems, which may nevertheless be coupled structurally through media such as language.

This view has profound implications, of course, for how we think about the human in relation to the animal, about the body and embodiment. To begin with, it means that we can no longer talk of *the* body or even, for that matter, of *a* body in the traditional sense. We take for granted, in other words, Bruno Latour’s assertion that “the human form is as unknown to us as the nonhuman. . . . It is better to speak of *(x)-morphism* instead of becoming indignant when humans are treated as nonhumans or vice versa.”³⁶ Rather, “the body” is now seen as a kind of *virtuality*, but one that is, precisely for that reason, all the *more* real. If we believe, as I think we must, the contention that, neurophysiologically, different autopoietic life-forms “bring forth a world” in what Maturana and Varela call their “embodied enaction”—and if, in doing so, the environment is thus different, indeed sometimes *radically* different, for different life-forms—then the environment, and with it “the body,” becomes unavoidably a virtual, multidimensional space produced and stabilized by the recursive enactions and structural couplings of autopoietic beings who share what Maturana and

Varela call a “consensual domain.” “First” there is noise, multiplicity, complexity, and the heterogeneity of the environment, of what is (I put “first” in quotation marks to underscore the fact that such a statement could only arise, after all, as the observation of an autopoietic system: hence “first” here also means, because of the inescapable fact of the self-reference of such an observation, “last”; it is the environment *of* the system, not nature or any other given anteriority).³⁷ Second, there are the autopoietic systems that, if they are to continue their existence, respond to this overwhelming complexity by reducing it in terms of the selectivity of a self-referential selectivity or code; and this means, third, that the world is an ongoing, differentiated construction and creation of a shared environment, sometimes converging in a consensual domain, sometimes not, by autopoietic entities that have their own temporalities, chronicities, perceptual modalities, and so on—in short, their own forms of embodiment. Fourth, the world is thus a virtuality and a multiplicity; it is both what one does in embodied enaction and what the self-reference of that enaction excludes. Again, Luhmann: “Reality is what one does not perceive when one perceives it.” Crucially, then, “virtual” does not mean “not real”; on the contrary, given the “openness from closure” principle, the *more* virtual the world is, the *more* real it is, because the buildup of internal complexity made possible by autopoietic closure actually *increases* the complexity of the environment that is possible for any system. In that sense, it increases the system’s connection and sensitivity to, and dependence on, the environment.

Rethinking embodiment in this way, one might be tempted to invoke Deleuze and Guattari’s well-known idea of the body without organs, along the lines usefully glossed by Brian Massumi: “Since the body is an open system, an infolding of impulses from an aleatory outside, all its potential singular states are determined by a fractal attractor. Call that strange attractor the body’s plane of consistency. It is a subset of the world’s plane of consistency, a segment of its infinite fractal attractor. It is the body as pure potential, pure virtuality.”³⁸ But taking seriously the concept of autopoiesis—that systems, including bodies, are both open *and* closed as the very condition of possibility for their existence (open on the level of structure to energy flows, environmental perturbations, and the like, but closed on the level of self-referential organi-

zation, as Maturana and Varela put it); and taking seriously Maturana's assertion that a description in language and the generative phenomena to be described take place in "independent and nonintersecting phenomenal domains," there can be no talk of the body's plane of consistency being a subset of the world's plane of consistency. And there can be no talk of purity. Everything we know (scientifically, theoretically) and say (linguistically or in other forms of semiotic notation) about the body takes place within some contingent, radically nonnatural (that is, constructed and technical) schema of knowledge. The language (or meaning, more strictly speaking) that describes is of a different phenomenal order from that which is described. Paradoxically, that language is fundamental to our embodied enaction, our bringing forth a world, as humans. And yet it is dead. Rather, as Derrida puts it quite precisely, it exceeds and encompasses the life/death relation. That fact doesn't prevent in the least its effectivity, since effectivity (as Latour, among others, has shown) is not a matter of philosophical or theoretical representationalism.³⁹

To return, then, to the question of posthumanism, the perspective I attempt to formulate here—far from surpassing or rejecting the human—actually enables us to describe the human and its characteristic modes of communication, interaction, meaning, social significations, and affective investments with *greater* specificity once we have removed meaning from the ontologically closed domain of consciousness, reason, reflection, and so on. It forces us to rethink our taken-for-granted modes of human experience, including the normal perceptual modes and affective states of *Homo sapiens* itself, by recontextualizing them in terms of the entire sensorium of other living beings and their own autopoietic ways of "bringing forth a world"—ways that are, since we ourselves are human *animals*, part of the evolutionary history and behavioral and psychological repertoire of the human itself. But it also insists that we attend to the specificity of the human—its ways of being in the world, its ways of knowing, observing, and describing—by (paradoxically, for humanism) acknowledging that it is fundamentally a prosthetic creature that has coevolved with various forms of technicity and materiality, forms that are radically "not-human" and yet have nevertheless made the human what it is. (For Derrida, of course, this includes the most fundamental prostheticity of all: language in the

broadest sense.) As I have already noted, this prostheticity, this constitutive dependency and finitude, has profound *ethical* implications for our relations to nonhuman forms of life—a point I will discuss in some detail in the first half of the book.⁴⁰ It also changes how we think about normal human experience and how that experience gets refracted or queried in specific modes and media of artistic and cultural practice that form the focus of the book's second part.

The theoretical approaches I have been sketching here will be developed in greater detail in chapter 1, which attempts a sort of cross-articulation of the theoretical approaches of Jacques Derrida and Niklas Luhmann, not least to provide a context for a less-knee-jerk response for Luhmann's work than it has been accustomed to thus far in the United States. (Here, apropos David Wills's earlier observation about "the self-assurance of any hegemonic discourse or practice," it is worth mentioning that the situation is quite different outside the United States, especially in Europe, where systems theory is widely disseminated and influential in academic and intellectual life.) A central contention here will be that the similarities between systems theory and deconstruction have been hard to see because both converge on their central concept of *difference* from opposite directions. While Derrida's work begins by confronting a logocentric philosophical tradition in which difference must be released in its immanence through the work of deconstruction, for Luhmann, difference names an evolutionary and adaptive problem—specifically, the fact of overwhelming environmental complexity—that any system must find a way of addressing if it wants to continue its autopoiesis. Against this background, Derrida and Luhmann emerge as exemplary posthumanist theorists, I argue, because both refuse to locate meaning in the realm of either the human or, for that matter, the biological. Moreover, both insist on the crucial disarticulation of what Luhmann calls psychic systems and social systems, consciousness and communication, in ways famously insisted on in Derrida's early critique of the self-presence of speech and autoaffection of the voice. For both, the form of meaning is the true substrate of the coevolution of psychic systems and social systems, and this means that the human is, at its core and in its very constitution, radically ahuman and constitutively prosthetic.

Chapter 2 moves this question of meaning—its form, its evolution—

into two additional contexts that will be important for the book as a whole: the question of animal intelligence and communication, and the question of disciplinarity. A central argument of this chapter is that Derrida's theory of language (in the broadest sense, akin to Luhmann's "meaning") and its relationship to questions of subjectivity, intentionality, and the like help us see how philosophers of cognitive science such as Daniel Dennett remain within the very Cartesianism they are trying to escape. Because of their reliance on an essentially representationalist theory of language that many trained in the humanities would find dubious at best, "CogSci" figures such as Dennett not only reinscribe the Cartesian subject that their functionalism wants to critique, but also reinstate the ontological difference between humans and animals familiar to us from the philosophical tradition—a difference that turns out to have dire ethical consequences in Dennett's work. Just how difficult that Cartesianism is to escape is revealed in Derrida's analysis of the psychoanalyst Jacques Lacan's rendering of the human/animal divide in light of his theory of the "subject of the signifier"—a theory that shares more with the Cartesianism of Dennett's analytic approach on this question than one might have expected.

Chapter 3—the longest and most ambitious in the book—explores in much greater detail the relationship between different philosophical approaches and the ethical consequences attendant on those differences for thinking our relations with nonhuman animals discussed in the previous chapter. I begin by casting a hard look at the more familiar and institutionally powerful forms of bioethics, which emerge in this discussion as less an ethics per se than a branch of policy studies within the historical development of what Foucault calls biopower and governmentality. With regard to the specific ethical question I focus on here (the standing of nonhuman animals), bioethics takes for granted the underlying moral hierarchy of human/animal that it ought to be committed to questioning. We need to look elsewhere, I suggest, for more searching engagements with this problem, and I begin by examining briefly Martha Nussbaum's recent attempt, in *Frontiers of Justice*, to apply an Aristotelian "capabilities" approach, focused on the "flourishing" of particular species, to the question of justice and species difference. Despite its admirable focus on vulnerability, finitude, and embodiment as crucial dimensions of ethical thought, Nussbaum's

work is hampered by numerous problems, not the least of which is its odd combination of analytic imprecision and programmatic insistence; so I turn to the philosopher Cora Diamond's remarkable body of work on this problem, which is interested not just in the question of ethics and animals but also in how confronting that question changes how we think about what justice is, and what philosophy itself may be.

Under the influence of Stanley Cavell's work on philosophical skepticism, Diamond asks us not to mistake "the difficulty of philosophy" (a propositional, if-P-then-Q kind of difficulty) for "the difficulty of reality" (which she finds on display in the novelist J. M. Coetzee's character Elizabeth Costello in *The Lives of Animals*, who is "wounded" and haunted by the animal "holocaust" going on around us daily in practices such as factory farming). Diamond's searching and original analysis points us toward a fact that will, I argue, require Derrida's work to fully articulate: that we share with nonhuman animals not just one form of finitude but two: not just the radical passivity and vulnerability announced in Jeremy Bentham's famous assertion that the question is not "can they talk?" or "can they reason?" but "can they *suffer*?" but also the kind of finitude articulated by Derrida in his critique of Lacan. That second form of finitude derives from the fundamental exteriority and materiality of meaning and communication itself, of any form of semiotic marking and iterability to which both humans and nonhuman animals are subject in a trace structure that, as he puts it, exceeds and encompasses the human/animal difference and indeed "the life/death relation" itself. For this reason, we cannot master and "erase," in any analytic of finitude or existential of being-toward-death (as in Heidegger), our radical passivity in a way that would once again separate us, definitively and ontologically, from nonhuman animals.

Chapter 4 attempts to intervene at a crucial moment in the development of what has recently come to be called "animal studies" by engaging with the question of disciplinarity. In doing so, it revisits and formalizes the questions of disciplinarity (namely, what is philosophy?) that animated the previous chapter, but it explores that question on the terrain of current U.S. literary and cultural studies and their ruling disciplinary norms, which are, at the current moment, historicist. They are historicist of a particular variety, as it turns out, one that takes for granted and reproduces a specific picture of the knowing subject

that undercuts the putative historicist commitment to the materiality, heterogeneity, and externality of historical forces: a subject that is clearly (to put it in the terms of a Marxist historicism largely evacuated or at least domesticated in current literary and cultural studies) an ideological expression of liberalism. It is on this level, I argue, that the real force of animal studies is occluded and compromised by many of the assumptions and practices that are mobilized by the template on which it is modeled (namely, cultural studies). Rather, the full force of animal studies—what makes it not just another flavor of “fill in the blank” studies on the model of media studies, film studies, women’s studies, ethnic studies, and so on—is that it fundamentally unsettles and reconfigures the question of the knowing subject and the disciplinary paradigms and procedures that take for granted its form and reproduce it. To put it another way, there are humanist ways and there are posthumanist ways of engaging in this supposedly always already posthumanist pursuit called animal studies. It is here—and not in the simple fact that various disciplines have recently converged on an object of study called “the animal”—that the deepest challenge to the disciplines posed by animal studies may be felt.

Chapter 5 broadens this question of posthumanist studies to include disability studies as well and revisits the relationship between language, subjectivity, and phenomenology explored in chapter 2. Here I focus on the fascinating figure of Temple Grandin, perhaps the best-known representative of an emergent area of contemporary U.S. culture in which animal studies and disability studies converge. Both disability studies and animal studies are interested in rethinking (from the ground up, as it were) questions of subjectivity, bodily experience, mental life, intersubjectivity, and the ethical and even political changes attendant on reopening those questions in light of new knowledge about the life experiences of nonhuman animals and those who are called (problematically, no doubt) the disabled. In Grandin’s case, she insists that her specific condition (a form of autism known as Asperger’s syndrome) enables her to understand more deeply how nonhuman animals such as cows perceive and experience the world, and she has integrated that understanding, she claims, into her designs for animal holding facilities throughout North America. I am interested here in how Grandin’s case helps us radically denaturalize many of the taken-for-granted modes

of human perception and mentation of “normates”—not least, visual experience and an entire set of assumptions about the relationship between language and thought that I have examined in earlier chapters. I am also interested, as I end this chapter, in Grandin’s insistence that disability becomes an important form of *abledness* in opening up trans-species modes of identification and thus helps us to disclose how we need to rethink the underlying models of subjectivity that ground the dominant discourses in disability studies, drawn as they are from the liberal democratic framework and its casting of subjectivity in terms of agency, autonomy, and the like.

The second half of the book does not by any means abandon the theoretical and ethical frames that occupy part I; rather, part II continues to develop them, but on different terrain, by engaging in detailed readings and interpretations of a range of cultural and artistic practices that exemplify a posthumanist sensibility or problematic as they emerge and are worked through in particular media and art forms. Chapter 6 continues to excavate the question of visibility in relation to the problem of humanism but does so by linking it to an overt thematics of nonhuman life and the question of its ethical standing that dominates the work of two very different and important contemporary artists, Eduardo Kac and Sue Coe. What I am interested in here, to put it schematically, is the following question: What is the relationship (if indeed there is one) between representationalism and speciesism? What is the connection between an artistic mode or medium and the ways of seeing and experiencing the world that they take for granted, and how do those index a certain kind of perceiving, experiencing subject? By using the work of Michael Fried and Derrida to read Sue Coe’s enormous and compelling project *Dead Meat*—a compilation of drawings, paintings, and sketches based on her visits to slaughterhouses in the United States and abroad—I try to show how art that is dedicated to exposing the horrors of anthropocentrism and the violence toward animals that it countenances may nevertheless be, in its very strategies and despite itself, humanist and anthropocentric. On the other hand, art such as Eduardo Kac’s, which is controversial in part because of its collaboration with genetic engineers (as in his most famous work, *GFP Bunny*, which produced a glow-in-the-dark rabbit named Alba), may nevertheless engage in a fundamentally posthumanist project in its

deft deployment and exposure of certain habits of visuality and representationalism associated, as W. J. T. Mitchell and Luhmann argue, with the spectator-subject of humanism—habits that Kac’s choice of medium and method is calculated to unsettle.

Chapter 7 continues the investigation of the relationship between visuality and (post)humanism on the terrain of photography and film but adds to it the relationship between sound and voice (specifically, in Lars von Trier’s brilliant and, to some, infuriating film *Dancer in the Dark*). Drawing on work by Stanley Cavell, Catherine Clément, Kaja Silverman, Judith Butler, Slavoj Žižek, Derrida, and others, I attempt to draw out the ethical stakes of how the film stages a certain drama of prosthetic subjectivity and of what Žižek calls “the act as feminine” in the story of the main character Selma (played brilliantly by the pop phenom Björk)—a story that begins with her impending blindness and ends with her hanging for the crime of murder. In the process, I try to demonstrate how both Cavell’s skepticism and Žižek’s psychoanalysis, brilliant as they are in their local insights, remain fundamentally within the purview of a humanism that von Trier’s film both mobilizes (as fantasy) and throws into question (in its filmic practice). As Luhmann might put it, *Dancer in the Dark*’s relationship to posthumanism is not just thematic (in the relationship between Selma’s encroaching blindness and how it reconfigures the sight/sound relationship for the human) but also operational in its handling of the medium of film itself.

Luhmann’s work is especially apt for framing our understanding of the architectural projects discussed in chapter 8, because many of them self-consciously mobilize the discourse of emergence, autopoiesis, and self-organizing systems that has become an increasingly central feature in landscape architecture in particular. That discourse asks us to reconceive the relationship between nature and culture as a system/environment relationship in which neither term is given as such, and both are a product of cospecification as they emerge from specific practices of articulation. Among the distinguished group of finalists for Toronto’s Downsview Park competition, the winning entry, *Tree City*, by Rem Koolhaas and Bruce Mau, is remarkable for its bold refusal of “the realm officially known as architecture” (there are no built structures in the project) and its antirepresentationalist attempt to displace the compositional logic endemic to the problem of the “urban

park”—a logic that is, after all, quite at odds with the conceptual thrust of self-organizing systems and autopoiesis invoked by all the entries. To accomplish its task, *Tree City* engages in a kind of dematerialization of the architectural medium, in which *time*, not space—and certainly not built space—becomes the constitutive medium. A similar logic of dematerialization is at work in Diller + Scofidio’s *Blur* project—a manufactured cloud hovering over a lake—and it is one that raises fundamental questions of form and meaning in art that Luhmann’s work will help us answer: namely, how (in the medium of architecture, no less) can the weakening, even the refusal, of form in the traditional sense constitute precisely a work’s boldest formal statement? To answer that question, we need to understand that art as a social system has a unique relationship to the *difference* between perception and communication discussed in our opening chapter. The work of art, Luhmann argues, copresents that difference and “reenters” it in service of its own construction of meaning, “integrating what is in principle incommunicable—namely perception—into the communication network of society.”⁴¹ This is what allows art to have a privileged relationship to what has traditionally been called the “ineffable” and the “sublime.”

That paradoxical observability of the unobservable, the communicability of the incommunicable—the fact that, as Luhmann puts it, “the activity of distinguishing and indicating that goes on in the world conceals the world”⁴²—ought to sound familiar to students of romanticism, and in particular to students of Stanley Cavell’s reading of philosophical skepticism as a framework for understanding the subject of chapter 9, Ralph Waldo Emerson. For Cavell, skepticism names the problem, deriving canonically from Kant’s encounter with the *Ding an sich*, of “the evanescence and lubricity of all objects,” as Emerson puts it, “which lets them slip through our fingers when we clutch hardest.” To Cavell’s brilliant rereading of Emerson, I want to add Luhmann’s reading of romanticism as a reaction to modernity as a phenomenon of “functional differentiation,” because it helps us see that Emerson, more than any other philosopher of his day (or, one might argue, of *any* day), puts particular pressure on the paradoxical dynamics of observation as theorized by Luhmann (as in Emerson’s proclamation in *Nature* of 1836: “I am nothing, I see all”). Cavell’s reading of Emerson

in light of philosophical skepticism thus inaugurates a project that we will need Luhmann's systems theory to complete. If Cavell helps us to understand how Emerson reinvents philosophy by continuing to do philosophy after philosophy is, in a very real sense, impossible, then Luhmann helps us articulate more precisely how that task must become a posthumanist one, how it is precisely at his most paradoxical and illogical that Emerson is at his most systematic and rigorous in obeying a quite different logic, a logic inaugurated by modernity as functional differentiation and its unavoidable epistemological fallout.

Emerson's especially rigorous form of romanticism and his engagement of the problem of observation as theorized by Luhmann form an invaluable background for chapter 10, which engages the work of the twentieth-century poet perhaps most associated with the Emersonian legacy: Wallace Stevens. Here, however, I am less concerned with an authorial study than with extending Luhmann's investigations of the problems of form and meaning encountered in the previous two chapters into the realm of poetic form specifically. As with my reading of Emerson, my aim here is to show that Luhmann's theory of art in relation to the paradoxical dynamics of observation provides us with the tools to move beyond the critical impasses that have characterized vague discussions of Stevens's "romantic modernism." Like Emerson's philosophy, Stevens's poetry insists on our not turning away from paradoxical self-reference; it both calls for an encounter with "things exactly as they are" and proclaims that "what I saw / Or heard or felt came not but from myself."⁴³ It is not just in paradox but in the systematicity with which it is deployed that we may identify the rigor of Stevens's poetry. Far from a nonserious or "imaginative" engagement of the problem, Stevens's work uses form (in Luhmann's sense) to stage and, more importantly, to make *productive* the central paradox of meaning after the turn to functional differentiation: that self-reference (mind, imagination, or spirit in the thematics of romanticism) and hetero-reference (reality, world, nature) are themselves *both* products of self-reference. Luhmann's work helps us to see that this is not, however, simply an updated form of philosophical idealism of the sort derived from Kant. It also helps us understand a fact we encountered in chapter 8: that form does not involve the material or perceptual substrate of the artwork (here, in the conspicuous absence in much of Stevens's

poetry of the prosodic features typically associated with poetic form) but is rather a matter of the recursive self-reference of art's communication, what Luhmann calls art's overcoming of its own contingency. Form is not, that is, the externalization of a subjective interiority or a consciousness, and it is in that precise sense posthumanist.

In the final chapter, I return to questions that animate the middle part of the book—questions of sound, voice, music, and visibility. I revisit the work of Jacques Derrida to parse the relationship between analog and digital media on the site of David Byrne and Brian Eno's collaboration (both musical and artistic) around their remarkable record *My Life in the Bush of Ghosts* (1981). The uncanny effect of that record on almost everyone who hears it, in my experience, has to do in no small part with its use of found vocal materials drawn from a range of sources—evangelical preachers and exorcists recorded from AM radio on a boom box, anthropological recordings of mountain singers in Lebanon, and much else—sampled over gleaming studio tracks inflected by Afro-futurism and what one critic called “avant-funk.” But it also has to do in complex ways with what that mix indexes, what Derrida calls the “non-contemporaneity with itself of the living present” (its virtuality, if you like), and how that fact is related to questions of media and archive.⁴⁴ What Derrida helps us see is that the dream of “grammaticalization” and “discretization” of movement, image, and sound associated with the apotheosis of digital media is just that—a dream. But it is a dream whose opposite is not some form of authenticity or presence typically associated with analog media; rather, it is a dream haunted by the “spectrality” produced by *any* media, any archival technology whose iterability and repeatability anticipate and in some sense forecast our eventual absence, our death. It is, however, precisely on the basis of that fact that the possibility of the future depends, a “living-on” or “to come,” as Derrida puts it, that can only happen because (to quote his beloved Hamlet) “the time is out of joint.” Only, that is, because “we” are not “we.”

Notes

Introduction

1. Michel Foucault, *The Order of Things: An Archaeology of the Human Sciences* (New York: Pantheon, 1971), 387.

2. That project was later republished as the more accessible *Observing Complexity: Systems Theory and Postmodernity*, ed. William Rasch and Cary Wolfe (Minneapolis: University of Minnesota Press, 2000).

3. See Neil Badmington, ed., *Posthumanism* (New York: Palgrave, 2000), and his essay "Theorizing Posthumanism," *Cultural Critique* 53 (Winter 2003): 11–27. See also Chris Hables Gray, *Cyborg Citizen: Politics in the Posthuman Age* (New York: Routledge, 2001); and Elaine L. Graham, *Representations of the Post/Human: Monsters, Aliens, and Others in Popular Culture* (Manchester: Manchester University Press, 2002).

4. Neil Badmington, *Alien Chic: Posthumanism and the Other Within* (New York: Routledge, 2004). Haraway's "A Cyborg Manifesto" formed part of her book *Simians, Cyborgs, and Women: The Reinvention of Nature* (New York: Routledge, 1991) but appeared first as "Manifesto for Cyborgs: Science, Technology, and Socialist Feminism in the 1980s," *Socialist Review* 80 (1985): 65–108.

5. Joel Garreau, *Radical Evolution: The Promise and Peril of Enhancing Our Minds, Our Bodies—and What It Means to Be Human* (New York: Random House, 2005), 231–32.

6. Nick Bostrom, "A History of Transhumanist Thought," *Journal of Evolution and Technology* 14, no. 1 (2005): 2.

7. *Ibid.*, 3.

8. Michel Foucault, "What Is Enlightenment?" trans. Catherine Porter, in *The Foucault Reader*, ed. Paul Rabinow (New York: Pantheon, 1984), 43–44.

9. Étienne Balibar, "Racism and Nationalism," trans. Chris Turner, in *Race, Nation, Class: Ambiguous Identities*, by Étienne Balibar and Immanuel Wallerstein (London: Verso, 1991), 56.

10. N. Katherine Hayles, *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics* (Chicago: University of Chicago Press, 1999), 287.

11. See, for example, Bruce Clarke, *Posthuman Metamorphosis: Narrative and Systems* (New York: Fordham University Press, 2008), 5.

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12. See in particular Bernard Stiegler, *Technics and Time, 1: The Fault of Epimetheus*, trans. Richard Beardsworth and George Collins (Stanford, Calif.: Stanford University Press, 1999).

13. Foucault, "What Is Enlightenment?" 47.

14. In this connection, see especially *Philosophy in a Time of Terror: Dialogues with Jürgen Habermas and Jacques Derrida*, ed. Giovanna Borradori (Chicago: University of Chicago Press, 2004).

15. R. L. Rutsky, "Mutation, History, and Fantasy in the Posthuman," in "Posthuman Conditions," ed. Neil Badmington, special issue, *Subject Matters: A Journal of Communication and the Self* vol. 3, no. 2–vol. 4, no. 1 (2007): 107.

16. *Ibid.*, 110–11.

17. As James W. Bernauer has pointed out, Foucault directly acknowledges Canguilhem for two of his hallmark ideas. The first "is the suspicion, which Canguilhem himself had derived from Bachelard, of science's account of itself as a story of linear progression, and thus the concomitant disposition to deal with the discontinuities evident in the history of science. . . . The second is the inclination to explore history not in quest of a total dialectical comprehension but in terms of specific problematics within which there was determined for a specific field of study both the object of its reflection and the manner in which that reflection would be carried out. 'We must think problematically rather than question and answer dialectically,'" as Foucault puts it in "Theatrum Philosophicum." James W. Bernauer, *Michel Foucault's Force of Flight: Towards an Ethics for Thought* (Atlantic Highlands, N.J.: Humanities Press, 1990), 97.

18. Clarke, *Posthuman Metamorphosis*, 5.

19. Rutsky, "Mutation," 111.

20. Clarke, *Posthuman Metamorphosis*, 5.

21. Dirk Baecker, "Why Systems?" *Theory, Culture, and Society* 18, no. 1 (2001): 61.

22. Jacques Derrida, "The Animal That Therefore I Am (More to Follow)," trans. David Wills, *Critical Inquiry* 28: 2 (2002): 407.

23. David Wills, "Jaded In America," in *Matchbook: Essays in Deconstruction* (Stanford, Calif.: Stanford University Press, 2005), 13.

24. See, for example, Slavoj Žižek, *Enjoy Your Symptom! Jacques Lacan in Hollywood and Out* (New York: Routledge, 1992), 48–50.

25. Gilles Deleuze and Claire Parnet, *Dialogues*, trans. Hugh Tomlinson and Barbara Habberjam (New York: Columbia University Press, 1987). See the "Preface to the English Language Edition by Gilles Deleuze," vii, and "Translators' Introduction," xii.

26. Bruno Latour, *We Have Never Been Modern*, trans. Catherine Porter (Cambridge: Harvard University Press, 1993), 10–11.

27. See Hans-Georg Moeller's brief outline of Luhmann's relationship to Kant in chapter 9 of *Luhmann Explained: From Souls to Systems* (Chicago: Open Court Press, 2006), 167–71.

28. Niklas Luhmann, *Observations on Modernity*, trans. William Whobrey (Stanford, Calif.: Stanford University Press, 1998), 23.

29. As William Rasch explains it, "if the investigation of reality has also become the investigation of the investigator's construction of reality, then the process of scientific or theoretical observation must include an element of self-observation. . . . In a similar vein, Luhmann notes that it has become a requirement of all theories that claim universality to include themselves as part of what they describe." What this means is that "the process of observation is seen to contribute to the generation of complexity from simplicity. As consequence, complexity can never be fully reduced to an underlying simplicity since simplicity, like complexity, is a construct of observation that could always be other than it is. Contingency, the ability to alter perspectives, acts as a reservoir of complexity within all simplicity." William Rasch, *Niklas Luhmann's Modernity: The Paradoxes of Differentiation* (Stanford, Calif.: Stanford University Press, 2000), 48, 39.

30. For a useful account of the emergence of postmodern science that helps to contextualize this fact against the background of the shift from thermodynamics to the life sciences as models for thinking about organized complexity (which will eventuate, among other things, in the paradigm of autopoiesis that Luhmann will eventually adapt from Maturana and Varela), see Steven Best and Douglas Kellner, "Entropy, Chaos, and Organism in Postmodern Science," chapter 5 in *The Postmodern Turn* (New York: Guilford Press, 1997).

31. Niklas Luhmann, *Social Systems*, trans. John Bednarz Jr. with Dirk Baecker (Stanford, Calif.: Stanford University Press, 1995), 37.

32. Jacques Derrida, "Speech and Phenomena," trans. David B. Allison, in *A Derrida Reader* (New York: Columbia University Press, 1991), 26–27.

33. Jacques Derrida, "Violence against Animals," in *For What Tomorrow . . . : A Dialogue*, by Jacques Derrida and Elisabeth Roudinesco, trans. Jeff Fort (Stanford, Calif.: Stanford University Press, 2004), 63.

34. Humberto Maturana and Francisco Varela, *The Tree of Knowledge: The Biological Roots of Human Understanding*, rev. ed., trans. Roberty Paolucci (Boston: Shambhala Press, 1992), 26.

35. Humberto R. Maturana, "Science and Daily Life: The Ontology of Scientific Explanations," in *Research and Reflexivity*, ed. Frederick Steier (London: Sage Publications, 1991), 34.

36. Quoted in Clarke, *Posthuman Metamorphosis*, 3. In this connection, see

“Data Made Flesh: The Material Poiesis of Informatics,” Phillip Thurtle and Robert Mitchell’s introduction to their edited collection *Data Made Flesh: Embodying Information* (New York: Routledge, 2004), 1–23. There they offer a useful reconceptualization of the concept of the body and counterpose it to four widespread understandings of the term: the “naturalist body,” the “cultural/social determinist” body, the “animal” body, and the “phenomenological” body (3–6). As they put it: “We propose that ‘the body’ be understood as anything that cannot be divided without changing the fundamental pattern of its dynamics. Thus bodies are made up of organs, tissues, cells, and molecules, but a description of a body cannot be reduced to a description of the parts or their functions. This broad definition brings with it some surprising conclusions. ‘Machinic systems,’ as popularized by Gilles Deleuze and Felix Guattari, may not be ‘sets’ but they are bodies. An autopoietic system, in the terms of Varela and Maturana, is most definitely a body. A ‘self-referential system,’ in the terms outlined by Niklas Luhmann, is a body. A ‘network,’ as described by Manuel Castells, is a body. An organism bounded by flesh is a body. . . . Moreover, this understanding of the body allows us to distinguish between human and nonhuman bodies without falling into the error diagnosed by Hans-Ulrich Gumbrecht, of employing a ‘concept of the human [that] exclud[es] . . . any reference to the human body’” (4–5).

37. For a point of comparison here, see Brian Massumi’s rather different, Bergson-inflected sense of this point about the body and virtuality in *Parables for the Virtual: Movement, Affect, Sensation* (Durham, N.C.: Duke University Press, 2002), 30–31. For Massumi, presumably, “first” doesn’t mean both “first” and “last”; it just means “first,” as it does for any ontologist.

38. Brian Massumi, *A User’s Guide to Capitalism and Schizophrenia: Deviations from Deleuze and Guattari* (Cambridge, Mass.: MIT Press, 1992), 70–71.

39. I discuss these matters in detail in *Critical Environments: Postmodern Theory and the Pragmatics of the “Outside”* (Minneapolis: University of Minnesota Press, 1998). See in particular 12–22, 108–28.

40. On this point, see David Wills, *Dorsality: Thinking Back through Technology and Politics* (Minneapolis: University of Minnesota Press, 2008).

41. Niklas Luhmann, *Art as a Social System*, trans. Eva M. Knodt (Stanford, Calif.: Stanford University Press, 2000), 141.

42. *Ibid.*, 149.

43. “The Man with the Blue Guitar” and “Tea at the Palaz of Hoon,” in *The Collected Poems of Wallace Stevens* (New York: Random House, 1990), 165, 65.

44. Jacques Derrida, *Specters of Marx*, trans. Peggy Kamuf (New York: Routledge, 1994), xix.