

CHAPTER 13

Chaos Theory and
Merleau-Ponty's Ontology

BEYOND THE DEAD FATHER'S PARALYSIS TOWARD
A DYNAMIC AND FRAGILE MATERIALITY

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The Dead Father's head. The main thing is, his eyes are open. Staring up at the sky. The eyes are a two-valued blue, the blues of the Gitanes cigarette pack. The head never moves. Decades of staring. The brow is noble, Good Christ, what else? Broad and noble. And serene, of course, he's dead, what else if not serene? . . . Dead, but still with us, still with us, but dead.

—Donald Barthelme, *The Dead Father*

OVERCOMING THE "TWO CULTURE" DICHOTOMY

Merleau-Ponty's ontology and the diverse developments in recent science that have been called "chaos theory" can be used to bring about a new encounter between philosophical and scientific thinking. It is my contention that Merleau-Ponty's philosophy allows for a way of thinking about both humans and the materiality of the world that would overcome the split between the human and the so-called natural world in such a way as to also create a renewed sense of resonance between science and philosophy—between science

and the humanities in general. This rejoining does not take place through what has been called "philosophy of science," which, in fact, reiterates the oppositions of "human reality" to "physical reality," of subject to object, and of mind to matter, and seeks to solve this conflict through recourse to a reductive foundation that would systematize both. Instead, the analysis of Merleau-Ponty's philosophy of perception and ambiguity, along with the developments in science that are addressed by chaos theory, articulate an ontology that reconfigures time, materiality, identity, and other traditional categories of analytical thought as used both in the sciences and humanities—and in such a way that the human and the natural can be seen as intertwining or in a chiasmatic relationship. Instead of being either competing oppositional orders or orders competing within a hierarchy, the phenomenology of the self-in-the-world and the science of the complexity of the world pivot around one another in ways both irreducible and inseparable.¹

However, to heal the "two culture" split between science and the humanities requires that we delve into the underlying resistances to considering this possibility. It is passed off as an obvious conceptual matter that "we" as humans cannot be comprehended in the same manner as the "stuff of the world." This has been our "common sense" for centuries—an insight understood to have been part of Western culture's emergence out of the "dark ages" of the Medieval world into the Enlightenment of the scientific and humanistic revolution. This seemingly obvious epistemological disjunction is a corollary of seeing the world as grasped in the "book of numbers"—the Galilean vision of quantitative and mechanical terms grasping the truth. In this vision, if human reality were ever to be properly understood, it would be by reducing its apparent qualitative disparities and complexities into merely quantifiable terms—into Cartesian "simples." Until this century, it was considered to be a matter of scientific method to remove the observer from the system observed in order to preserve objectivity and truth. However, not only has this disjunction been called into question by a science determined to deal with matters of greater complexity (and now having the tools to do so), instead of remaining with artificially simplified laboratory or methodologically idealized settings, but additionally, this removal of the observer is now to be questioned as a gendered response. The motivation to insist on such disjunction and simplification in a reductive science or philosophy now appears in a context that raises the question of whether this epistemological narrowness is tied to patriarchy and the construction of masculine gendered responses.

After looking at the parallel and complementary articulations of Merleau-Ponty's ontology and chaos theory, this essay will explore how the ongoing opposition between science and philosophy may be an artifact of a gen-

dered retreat from the significance of death, and how this death-denying retreat has been a key to very disparate aspects of patriarchal thinking. For this reason, not only do disciplinary universes have to be mixed in a way that threatens their perceived purity, but also in a way that introduces and questions what seem to be different orders. So I will bring together questions concerning interpretations of the meaning of death and the dominance of the logic of linear causality, as well as juxtapose queries concerning differences in gender identity with notions of the nature of materiality.

I would like to start to weave these themes together by invoking the scientific and philosophical narratives that we can draw from chaos theory and Merleau-Ponty's ontology to help make sense of two images. The first image is drawn from the world of "natural events" and introduces the kind of concerns that chaos theories have brought to modern scientific thinking. The second image is from the world of literature and raises concerns about the contingency of existence that Merleau-Ponty's ontology has addressed by enlarging the scope of philosophical thinking. Both images can be interpreted in such a way as to bring us to the intersection of differing logics of change and identity: science and phenomenology. These images and the explanatory narratives of chaos theory and Merleau-Ponty's ontology will allow us to consider the body as interwoven in the flesh of the world, to see the logic of personal and material identity emerging from a dynamic unfolding of a fragile endurance, and to encounter the patriarchal fears of death that haunt the seemingly distant considerations of method. Hopefully, a third image can serve as focal point for the concluding speculations regarding how fear of death can kill the inherent life of materiality and its representation in science and philosophy.

CHAOS THEORY AND OVERCOMING THE DEAD FATHER'S MECHANISM

Present-day research leads us farther and farther away from the opposition between man and the natural world.

—Ilya Prigogine, *Order out of Chaos*

Chaos theory helps us to think of the causality of events in a different way. From within its discourse, the first image for us to consider appears: a DC-9 jet takes off, lumbering toward the sky, but quickly is transformed from a way to soar above the earth into a gateway to sudden death. Chaos principles help us understand the plight of a DC-9 that took off in a snowstorm in Denver, stalled, and flipped over, killing twenty-eight people. After investigating the incident, it became apparent that this tragedy and its physical events of

rather considerable magnitude were actually the consequence of the formation of a few grains of ice and the role they then played in a complex interaction.² These few grains of ice formed on the wing of the plane. However, rather than seeing the wing as a mere self-subsistent entity, it is important to realize the wing is a dynamic player in an ongoing complex event that comprises the flight of the DC-9. The grains of ice had set up another flow of air that doubled back upon itself within the larger flow of air over and under the wing as part of the aircraft's flight. In setting up a divergent flow that kept feeding back into itself, the impact of a seemingly trivial event became more significant as it gained force.

The instabilities of air flow fed back into movement patterns in such a way as to self-amplify: airflow vortices contributed to further vortical dispersions such that a rhythm of dissipation and turbulence disrupted the previous rhythmic flow and burst forth in the air. Chaos theory has described how turbulence springs from a seed of irregularity, a tuft of resistance, that creates a rift in the linear order of unfolding events. Suddenly, an emergent rhythm of change can engulf the entire system (Briggs and Peate 1990, 24). Through the interconnection of entities—that are more properly seen as events—having a place in larger events which are comprised by the interplay of many aspects of their field-identity, an entity or occurrence that by itself seems to have minimal impact and importance can suddenly bring forth overwhelming change. Most of us still think of science as dealing with changes that are incremental, strictly proportionate to their antecedents, and predictable, at least ideally. To understand how science can now comprehend sudden, disproportionate change and unpredictable transformation, it is important to grasp how the notion of feedback has displaced linear causality insofar as science has begun to look at the world in terms of “open systems.”

In an open system, an entity functions and unfolds only within the interrelated functioning and unfolding of its environment. Thus, whatever one tries to designate as a discrete entity is probably an interrelation of its constituents. The environment is likewise an interrelation of various of its constituents, including the so-called discrete entity. I use the word *interrelated* to designate the case in which the current state between these two entities is fed back into the identity of each and each is transformed by it. This is in contrast to the old mechanistic view of parts affecting each other through a series of impacts whose identity is separable from their relatedness: a cog is a cog or a spring is a spring, no matter what other parts of the machine it is connected to at the moment.

As scientists focused on both more complex phenomena, like the weather, and on living systems, they discovered there were so many high-

energy flows occurring that they were “self-organizing”: their processes became interwoven in order to maintain their identity, using the flux of the total environment to facilitate their own unfolding. From the point of view of the mechanical metaphor with its atomistic assumptions, this sounds anthropomorphic, yet myriad phenomena demonstrate openness to the whole as well as this self-organizing characteristic. However, before discussing this, it may be helpful to hesitate for a moment to consider the other term used above in introducing the notion of open systems: *feedback*.

Feedback phenomena designate the way in which different entities are in a relationship such that the action of the one is factored back into the action of the other. In a “negative” feedback loop, the action of one entity is triggered by the other which in turns regulates the action that triggered it. For example, the rise in the thermostat of my heater is what causes the heater to momentarily stop regulating the very activity that caused the thermostat's thermometer to rise. Each works as a function of the other. In a “positive” feedback loop, an entity, in relation to the activity of a first entity, augments that original activity, is “fed back” into it in such a way that self-amplification is created. For example, when a public address system produces an ear-splitting screech, the output from the amplifier has been picked up by the microphone, fed back into the amplifier and emitted from the speakers as a chaotic burst of sound where each stage of output has become input for new output. These self-regulating and self-amplifying cycles among parts of a system exist as a tension between order and chaos (Briggs and Peate 1990, 25–26). Represented mathematically, feedback gives rise to iterations, to terms repeatedly multiplied by themselves. This aspect of self-ordering allows for both sudden change or turbulence and for maintaining a certain rhythm in a process.

When most people think of factors that are multiplied by themselves, they tend to think this in a linear way, as a value growing in predictable and regular patterns, such that it can even be graphically represented in a progressive and orderly fashion. However, for the complexly interwoven phenomena scientists have turned to exploring, nonlinear equations have proven to be better representations of the interactions involved. In nonlinear equations a small change in one variable can have a catastrophic impact on other variables, correlations that were relatively constant can suddenly demonstrate wildly different behaviors, values that were close together can soar apart, and solutions to nonlinear equations are not generalizable to other nonlinear equations (Briggs and Peate 1990, 24). Unlike the smooth curves made by plotting linear equations, nonlinear plots show breaks, loops, recursions, and various forms of turbulence. The power of iteration—the feedback that involves the continual reabsorption or enfolding of what has come before—mathematically represented, also creates

a sensitivity to initial conditions that seem to get lost in the process of unfolding but then can suddenly reappear again. Even in its mathematical representation, self-amplifying open systems demonstrate an alternation, a tension, of order and chaos.

Without this new paradigm, sudden transformations in the realm of human action were at odds with logic of change within the material world, since its changes were thought to be predictably, incrementally, and mechanically ordered. Given that dominant view, human unpredictability has been explained by recourse to concepts that set the human in opposition to the material world. The sudden transformation in the behavior of a person or a group has often been explained as the result of a faculty transcendent to the plane of earthly life or a result of mystical intervention of a supernatural power or the upsurge of unconscious drives or some sort of demonic possession. However, rather than interpreting the sudden transformability and fragility of human life as designating a realm contradictory to the natural, material realm, a more responsible approach is to include ourselves as part of this turbulently ordered, self-regulating or autopoietic realm of earth, its matter, and its creatures. Here, we can only note the parallel with how air flow bursts out of a flight-enabling trajectory into turbulence whose sudden engulfing power is strong enough to flip a DC-9 into the netherworld of a lumbering bird of death. Kali³ can and does dance in feedback loops, and these changes are awe inspiring enough within the interactions of the material planet of which we are part to preclude having to seek awe in another realm.

Returning to chaos theory, we see that, scientifically, any movement or change can be represented by designating a dimension of space to represent the variables of motion or development. Tracing the pattern of movement creates a "phase space" composed of as many dimensions as are needed to describe a system's movement. Most people are familiar with graphs that trace a movement pattern's unfolding with two variables—or what is called "two degrees of freedom." For example, the unfolding path of vertical versus horizontal distance against the time elapsed is plotted in order to yield a represented trajectory. However, when one starts to trace movements in a more open system, more complex patterns emerge.

Instead of the change being additive, orderly, and external, forging a linear path, the movements of the system shift through patterns of transformations that embody a certain rhythm. Tracings of these changes become loops. Within phase space, in these open systems, one finds not a homogeneous expanse, but a pull toward a certain sector within phase space, a site of returning rhythms of change, a so-called "attractor." Rather than laying out movements indifferent to one another, a "limit cycle" emerges, a way of moving or

changing that is self-directing, learning from its past, and making the path into which it has strayed through the complex interaction its ongoing self-maintaining path. By absorbing itself, it amplifies itself to maintain dynamic equilibrium. Rather than all phenomena returning to near equilibrium states, "far-from-equilibrium" systems (as Prigogine called them)—where energy flows remain hot but dynamically ordering—are prevalent in the complex world.

If existence is a becoming and a folding back on itself, as Merleau-Ponty articulated in his ontology, then the chaos theorists' notion that all iterates itself in a dance of self-reference in which a thing returns to itself as a way of being itself is an appropriate way to express this scientifically. Prigogine called systems that maintained their identity only by remaining continually open to the flux and flow of their environment "dissipative structures." He saw them "emerging everywhere—in biology, in vortices, in the growth of cities and political movements, in the evolution of stars" (Briggs and Peate 1990, 139). Phase space represents dissipative structures and is resonant with a vision within science that discards the notion of self-subsisting and atomistic entities.

For example, the pancreas replaces most of its cells every twenty-four hours, the stomach lining every three days, 98 percent of the brain protein is recycled every month (68). Rather than seeing the so-called "organ" as some sort of given being, Prigogine's sensibility and rationality allows us to see that the organ is a self-amplifying flow, a meeting of variant forces, whose pattern we mistakenly took to be a static being, something substantial. The deepest ramifications of this notion, and a parallel articulation by a modern poet can be seen in the wonderful line written by W. H. Auden in praise of W. B. Yeats: Auden wrote that when Yeats died "a way of happening" ceased. If all entities are events (including human being), ways of self-amplifying themselves within the interplay of open systems, then we are merely "ways of happening," fragile, yet enduring.⁴

It is interesting that the Tao's symbol is the flow of water, a favorite example of ordered chaos. If one throws a rock into the flowing brook, the flow returns to its path after being disturbed. In phase space, the constant velocity of the flow is marked by a single point, a point attractor. In a fast-flowing brook, the smooth flow is warped by oscillation in which stable vortices form. The flow, however, returns to this same basic oscillation, the same vortex, and can be represented by a single limit cycle, a circular path. With increases in speed or disturbances on the flow of the system caused by temperature differentials in the water, further turbulence is generated. The turbulence fits a doughnut-shaped attractor—a torus—in three dimensions. Further increases in flow and turbulence move the tori on to further dimensions of representation. However, instead of the jump from a two- to a three-dimensional system,

the surface of the representation of the movement can get caught between two and three dimensions. The current wanders in byways of "indecision" known as a "strange attractor," which has a traceable path in its unpredictable transformations, in its turbulence. Resting in its becoming, turbulence finds a place in the maps of science as recurring rhythms of instability.

When, at the end of the nineteenth century, thermodynamics led Boltzmann to propose that physics speak of probabilities rather than entities, the Cartesian-inspired layperson assumed that there were certain factors unknown to the scientist in the phenomena being described and that the use of probabilities signalled an approximation based on this incomplete information: an indeterminacy of knowing that now plagued modern science. However, this is a superficial interpretation of a more profound shift in ontology. The turn to probability signalled a new way of thinking about identity and difference. Probabilities function as explanatory principles, a way of representing the notion that entities are processes rather than substances, irregular in their unfolding, open to other events, fluctuating in identity: a knowing of indeterminacy. Such entities are never really anywhere, as discrete, self-founding beings, and the probabilities represent the gaps in their substantiality and in the Cartesian world, rather than designate a paucity of knowledge about the system described.

It is also an emerging belief of chaos theorists that matter might be better represented as a Chinese box in which different levels of magnitude are repetitions of larger structures on different scales. The different levels of structures within other structures would then be yet another kind of self-amplification, but this one an "internal" reiteration on differing scales. Such repetition, multiplied in a diminishing magnitude but a repeated ratio, was called, by Mandelbrot, a "fractal." If a structure is continually iterated at continually diminishing scales, then not only is there a self-similarity between its different levels of structure, but it is one that continues infinitely. However, if the observer can decide that a certain magnitude of detail is the measure, this means that fractals resemble other phenomena of modern science in that the kind of question the observer poses to the observed is part of the outcome. At any rate, with the insight that changes of scale are fractal *cosmoi* identified in their self-similar configurations by nonlinear iterations, then the core of matter is not to be imagined as a constant, a substratum, but rather as spiralling, proliferating galaxies of intermittent identities, self-improvising and organizing as identities-within-difference.

The Greeks, for example, discovered history's most famous scale, the "golden mean," which is created by dividing a line such that the two segments are in the same ratio as that of the larger segment to the whole line. The pro-

portion that is generated is the irrational number 1.618... It has been found that for up to ten generations, lungs branching into bronchial tubes follow this scaling until suddenly, they may dramatically change, which is what happens when irrational numbers are reiterated, they suddenly take discontinuous, irregular turns (Briggs and Peate 1990, 107).

The fractal dimension also operates in the realm of time. Life's most central rhythm is the heart's beat. The Cartesian might dream of a beat that is regular and mechanical, and condemn irregular variations as pathological. However, while each beat of the heart is similar to the last, it is fractally iterated, thus never quite the same. If the heartbeat and respiration were to become highly regular, to assume a constant period in their cycle, the heart rejoins the fate of the machine: death; it ceases in "congestive heart failure." However, if the rhythm becomes too aperiodic, loses the self-similarity of family resemblance or style, then it disintegrates into the aperiodic defibrillation of a "heart attack." As Briggs and Peate phrase it, "the normal 'time' of the heart oscillates in the borderland between order and chaos" (Briggs and Peate 1990, 108).

In general, whether looking at white blood cell levels or other rhythms of change in the body, it is the fractal rhythms that are the norm, and as West and Goldberger conclude, "a loss of physiological variability in a variety of systems appears to be characteristic of the aging process," the loss of spontaneous variation is the running out of life. Or as Briggs and Peate put it, "To be healthy is to be composed of shimmering cycles of fractal time" (Briggs and Peate 1990, 108). It would seem that as an unfolding event, life is an attractor that self-amplifies according to not one, constant, fractal generating factor, but differing, random, fractal generators in the self-iterating processes that allow for a richness of organic rhythms and configurations.

The evolution of complex systems cannot be traced in a linear, causal fashion, because "everything affects everything else," which generates nonlinear change. As much as turbulence or chaos, order may spontaneously burst forth in an open system. Most waves in a body of water dissipate in turbulence. Yet, as the Scottish engineer John Russell noticed in 1834 when, on horseback, he chased a wave that maintained its configuration for a few miles along the Union canal near Edinburgh, the wave continued on its path with a constant shape, not falling into foam nor into smaller wavelets, not losing its energy but rolling off into the horizon. This is an example of a wave phenomenon called a "soliton" that occurs whenever the energy of the wave is not so great that it breaks into turbulence or so little that it dissipates. Instead, in a soliton, nonlinear component waves, rather than fragmenting one another, feed back into one another, coupling the motion of any waves that might otherwise speed up and escape from the soliton. We do notice such waves in water when they aug-

ment into tidal waves. However, whether one points to the atmospheric soliton known as the Great Red Spot of Jupiter, which has been observed for hundreds of years, or to the candle flame that fascinates as its seemingly ethereal form persists, or to the electrical pulses that pass down the human nerves at a constant speed without changing shape, the phenomenon of the soliton is pervasive in the spontaneous emergence of order in the material and biological world about us.

Whether thinking about superconductors, nuclear fusion, automobile traffic, or waves in the ocean, scientists have seen that there is a need to go beyond thinking of atomized parts coming into conflict or collision, and remaining external to one another. For example, intense laser light passing right through an opaque solid can do so because, along the wavefront, a complex nonlinear collective entity is formed that is no longer light nor matter, but a "polariton." Or, cell structure emerges when oxygen using rod-shaped bacteria invade cyanobacteria that are unable to use the oxygen, and feedback loops emerge linking their chemical systems. These linked processes are now identified as mitochondria of the cell.

Probably, the most culturally influential scientific theory of the nineteenth century was Darwin's theory of evolution, which still carries linear, atomistic, and dualistic modes of thinking to the threshold of dealing with a world of becoming. Darwin saw that instead of systems running down into homogeneity, their interactions could token dawning complexity. However, the notion of the "survival of the fittest"—an interaction within the environment created through each species' linear, random proliferations, and resolved through insular, external relations represented by the metaphor of competition—serves as a good symbol of the classical way of thinking, the code of the old fathers. However, by taking nonlinear processes as their paradigm, scientists can now see more cases of emergent symbiosis, changes that occurred within the evolution of systems linking into other systems, achieving feedback and self-regulation, so they might continue. In general, competition can usually be circumvented through an openness to the environment that allows systems variability in their unfolding.

Scientists such as Ilya Prigogine and Isabelle Stengers have declared that the science of the past centuries is no longer their science:

Not because we are concerned today with new, unimaginable objects, closer to magic than to logic, but because as scientists we are now beginning to find our way toward the complex processes forming the world with which we are most familiar, the natural world in which living creatures and their societies develop. Indeed,

today we are beginning to go beyond what Koyre called "the world of quantity" into the world of "qualities" and this of "becoming."
(Prigogine and Stengers 1984, 36)

Identities understood as dynamic and complex processes unfolding require another logic.

Another way of looking at this shift is to appreciate that science is beginning to take time into account in a far more radical manner than classical science. In nonlinear systems in which there is constant transformation, there is no "going back," because there is true "becoming" in the sense of transforming identity. Entities that are processes enfolded within other processes and entering into turbulences have transformed in time, in a way unlike entities comprised of external parts. The latter, at least ideally, could be put into "reverse gear" to reverse their mechanical interaction. However, the complexity of processes means there is no underlying "x" with which to defeat temporal flow as merely illusory. Scientists call this the "infinite entropy barrier."

The paradox of this insight is that in accepting the reality of temporal flow, scientists have discovered that the sudden nonlinear shifts that bring systems back to their past are still present in ongoing reiteration. Systems most open to their environment feed back into themselves and can create an order of autopoiesis and maintain their identity. These same systems may arrive at points in which so many possibilities of feedback loops emerge that the smallest fluctuation in an interacting factor, perhaps as small as a single photon of energy, can be iterated so drastically that the system will sweep into a totally new and unpredictable direction. These are called "bifurcation" points and they represent both the way in which, through iteration and amplification, one future was chosen and others vanished, and also how, through these loops, the past is continually recycled and stabilized through feedback so that the system embodies the exact conditions of the environment at the moment in which the bifurcation occurred.

So, for example, rather than the ocean being a disordered mass, the ocean's surface is so highly modulated in its flow patterns that it, in a very real sense, contains remembrances of its earlier structures, and the giant waves that occur are not brought about by chance but are "a self-focusing or surfacing of the ocean's memory in the form of a soliton" (Briggs and Peate 1990, 127). As Briggs and Peate conclude, "Thus the dynamics of bifurcations reveal that time is irreversible yet recapitulant" (Briggs and Peate 1990, 145). This sense of the world as made of open systems interacting as self-ordering phenomena within a temporal flow brings science to an ontology like that articulated by Merleau-Ponty.

MERLEAU-PONTY AS PHILOSOPHER OF DISSIPATIVE STRUCTURES

The very pulp of the sensible, what is indefinable in it, is nothing else than the union in it of the "inside" with the "outside," the contact in thickness of self with self—The absolute of the "sensible" is this stabilized explosion, i.e. involving return. The relation between the circularities (my body—the sensible) does not present the difficulties that the relation between "layers" or linear orders presents.

—Merleau-Ponty, "working note," November 1960

Merleau-Ponty's last written sentence in his unfinished manuscript about the nature of truth (published posthumously as *The Visible and the Invisible*) asks the question whether the present terms and contexts of explanation were not "insufficient to define our openness upon 'something'" (Merleau-Ponty 1968, 162). Merleau-Ponty's question highlights the fact that both the nature of the relationship of self and world and the identities of both terms of the relationship have not been properly formulated in the intellectual tradition he inherits. Throughout his life, Merleau-Ponty sought to articulate the same sense of existence that can be summed up by Saint-Exupéry's statement that "man is but a network of relationships"—the statement with which Merleau-Ponty ended the *Phenomenology of Perception*.⁵ Many treatments of Merleau-Ponty's thought seem to emphasize the positive resonance he delineated between the dynamic unfolding of the environment, history, and the affairs of people, that leaves us always at "the first day"—the effulgence of new sense from our intertwining with the world. Nonetheless, Merleau-Ponty's vision of human being "helixed" with the world, in a "chiasm" with the world, as he put it at the end of his life, has a dark side too.

Virginia Woolf's writings, I believe, articulate much of the same sense of embodiment and perception, as well as a nontraditional ontology that parallels Merleau-Ponty's work. Passages from *To the Lighthouse*, for example, provide images of the positive sense of the resources for new meaning in Merleau-Ponty's idea of "reversibility."⁶ However, Woolf's text also provides images of the sense of the intertwining of the unfolding relationship between the perceiver and world that captures the darker aspect of Merleau-Ponty's analysis in its resonance with chaos theory. In the text, Virginia Woolf has just described how sitting down to the candle-lit table has managed to give a sense of solidarity to the group around the table that is facing the large window overlooking the ocean-night:

[F]or the night was now shut off by panes of glass, which, far from giving any accurate view of the outside world, rippled so strangely that here, inside the room, seemed to be order and dry land; there, outside, a reflection in which things wavered and vanished, waterily.

Some change at once went through them all, as if this had really happened, and they were all conscious of making a party together in a hollow, on an island; had their common cause against the fluidity out there.⁷

The reversibility of this moment is apparent. In looking out at the night pressing against the pane of glass, the assembled group sees itself from the perspective that the night would have on them, mere waverings of existence within an encompassing fluidity that is dark, engulfing, and ongoing. This scene expresses the fragility of being a seer only because, as Merleau-Ponty repeatedly states, each seer is caught up in the seen.⁸ As one of the characters, Lily Briscoe, ponders in the next sentences, one can feel connection, meaning, and exhilaration, only as the reverse side, as part of the same movement that also allows solidity to vanish, vast spaces to lay between partners, and the painful weight of destruction to be felt.

This other side of reversibility, the asymmetry, turbulence, loosening of relations, and the breakdown of rhythms where there had been a functioning intertwining or awareness is brilliantly articulated by Woolf in the middle section of the novel, titled "Time Passes." There she writes in the whisperings of the wind, the night, the material shiftings of the world, the rhythms of the seasons, in which the deaths of protagonists of the novel are mentioned in brief parenthetical asides. It seems more than coincidental that this section makes time, in its flow and unfolding (which enfolds surprising phenomena), both the protagonist and title of the section. This emphasis echoes both chaos theorists' assertion that time's flow and its historicity are finally being taken into account by science,⁹ and Merleau-Ponty's initial assertion in *Phenomenology of Perception* that instead of a discrete "subject" of experience, "we must understand time as the subject and the subject as time" (Merleau-Ponty 1962, 422).

For Merleau-Ponty, both terms of the human-world relationship are time: "I myself am time" (Merleau-Ponty 1962, 421) and "time and significance are but one thing" (Merleau-Ponty 1962, 426). Accordingly, he later develops the sense of reversibility and the chiasmaic intertwining in terms of temporal unfolding: "one understands time as chiasm" (Merleau-Ponty 1968, 267).¹⁰ It is only within temporal unfolding that there is the intertwining interplay and generation of overlapping significance designated as "reversibility."

The tradition had maintained its dichotomies between distorting oppositional terms, such as subject versus object or mind versus matter, by taking the instant removed from time as the defining moment.

Woolf writes, at the beginning of the stunning twenty-five-page interlude that details time's passing, that "a downpouring of immense darkness began. Nothing, it seemed, could survive the flood, the profusion of darkness . . . there was scarcely anything left of the body or mind by which one could say, 'This is he' or 'this is she.'"¹¹ It is because each person is only a rhythm in the beating of these forces, a way in which they come into a certain rhythm for a time, known as Mrs. Ramsey or Lily Briscoe, that suddenly, by some absurd little occurrence that rhythm can cease to be.

However, it is in the same sense of precarious reversibility, what Merleau-Ponty called a "thread" in the "fabric of the world," that one is also part of a resonating, circulating, and cooperative articulating—dialogically—with the world in perception, in speech, in love, in art, in thought. The illumination and the darkness are inseparable moments of a fragile process, which transforms in differing moments of its shimmering rhythms. Reversibility not only means that both sides of the relationship make each other be what each is in its discrete identity, but also that this relationship is itself double-sided: both comprising the illumination of "this Visibility, this generality of the Sensible" as a shared power of the human world, but also yielding darkness, disintegration, and recalcitrance (Merleau-Ponty 1968, 139). This sense of the world, made of open systems interacting as self-ordering phenomena within a temporal flow, brings science to an ontology like that articulated by Merleau-Ponty.

In the introduction to the *Phenomenology of Perception*, many points take on a different resonance when one keeps the principles of chaos theory in mind. Merleau-Ponty begins by asserting that the individual's identity is a function of a constant retrieval from being caught up within the inexhaustibility of the unfolding world—understood as a weave "incorporating the most surprising phenomena" (Merleau-Ponty 1962, x)—in which "some local circumstance or other seems to have been decisive" (Merleau-Ponty 1962, xxviii), and whose massive indeterminate identity only emerges through a faith that is actually a peculiar iteration: "There is the world; I can never completely account for this ever-reiterated assertion in my life" (Merleau-Ponty 1962, xvii). This assertion, the ever-reiterated factor of perceptual faith, is like the strange attractors that chaos theorists have discovered in the unfolding of complex material interrelations in a far-from-equilibrium flow: a so-named "irrational" value repeating itself within the dynamic interplay of the relations of the open system that causes an indeterminate, intermittent, cycling back of order within chaos, of identity within difference. The reiteration of the world

is the incompleteness—the openness—of human being that makes it always a coming back to itself from its ecstatic being in the phenomena.

In Merleau-Ponty's description of how one is absent from oneself as taken up in an ongoing becoming, the coming back to itself of human being is most tellingly articulated as a "deflagration"¹² or turbulence, in which one is returned to oneself¹³ as a fold in the enfolding-unfolding of the "flesh of the world." This seems to make us, the human—as perceiver, as artist, as scientist—in our perceptual faith and ability to take up the sense of the world in meeting it, in active-passive dialogue or interplay, a constantly recurring dissipative structure.

The human as dissipative structure is echoed even in the way the *Phenomenology's* introduction continues to describe the power of the body pulling seemingly disparate moments into a relatedness in which "chance happenings offset each other, and facts in their multiplicity coalesce and show up as a certain way of taking a stand in relation to the human situation, reveal in fact an event which has its definite outline" (Merleau-Ponty 1962, xviii–xix). From the perspective of chaos theory, perceptual faith is a strange attractor in the circulation of sense, in the interweaving of perceptual and material systems. Intentionality, here, is the means of feeding back the unfolding of itself and the world into its further becoming: the autopoiesis, as scientists call it (Briggs and Peate 1990, 154–55), or the self-organizing aspect of phenomena, as Merleau-Ponty characterizes it.

Merleau-Ponty describes the nature of perception as an intertwining process as early as the chapter "The Thing and the Natural World" in *Phenomenology of Perception*, when he calls the interplay of human and world "certain kinds of symbiosis, certain ways the outside has of invading us and certain ways we have of meeting this invasion" (Merleau-Ponty 1962, 317) which is "a coition of our body with things" (Merleau-Ponty 1962, 320). What emerges from this interplay is a continual becoming whose every fragment "satisfies an infinite number of conditions" and whose temporality is "to compress into each of its instants an infinity of relations" (Merleau-Ponty 1962, 323) as "a single temporal wave" (Merleau-Ponty 1962, 331). As in the flow phenomena described by chaos theory—even the literal flow of water in a stream with its turbulence but also limit cycles—perception emerges as an open system allowing differing rhythms to play into each other but also keeping alive the reiterating factors that were part of its unfolding.

The shift in scientific thinking from substance to event, embracing probabilities as a way of representing presumptive identities within interrelated processes is parallel to Merleau-Ponty's shift away from traditional ideas of substance to a notion in the *Phenomenology* that "the perceptual synthesis is a tem-

poral synthesis, and subjectivity, at the level of perception is nothing but temporality." In trying to articulate what he means by the perceptual "field" that we are, Merleau-Ponty moves to an understanding of process that contains the same paradox as the idea of "dissipative structure": "The world, which is the nucleus of time, subsists only by virtue of that unique action which both separates and brings together" (Merleau-Ponty 1962, 332). The idea of feeding back the world into itself, so that it never literally recapitulates the past but is a novelty that draws on the past, was articulated in Merleau-Ponty's reinterpretation of Husserl's phenomenological notion of "sedimentation" or *Fundierung*. For Merleau-Ponty, sedimentation came to signify the way in which, through the iteration of perceptual faith, novel unfoldings developed previous rhythms in such a way that "a past which has never been a present" (Merleau-Ponty 1962, 242) was "realized" in the present. For Merleau-Ponty, it was a matter of coming to articulate a truer sense of "becoming" than Western philosophy had allowed by positing a Being or consciousness or sense of time and/or space outside the interplay of the sensible-sensing dialogical unfolding. This is precisely the direction in which Prigogine and Stengers see chaos theory leading science: toward a recognition of becoming (Prigogine and Stengers 1984, 310). For Merleau-Ponty, the indirect articulation of the sense of becoming will take him beyond traditional categories of philosophy but, even in the *Phenomenology of Perception*, he is moving in this direction: "under these circumstances one may say, if one wishes, that nothing exists absolutely, and it would, indeed, be more accurate to say that nothing exists and that everything is 'temporalized' (Merleau-Ponty 1962, 332).¹⁴

In *The Visible and the Invisible*, Merleau-Ponty understands the perceiver as perceiving "by dehiscence or fission of its own mass" (Merleau-Ponty 1968, 146), so that the perceived "is not a chunk of absolutely hard, indivisible being . . . but is rather a sort of straits between exterior horizons and interior horizons ever gaping open" (Merleau-Ponty 1968, 132). The perceiver and perceived are "two vortexes . . . the one slightly decentered with respect to the other" (Merleau-Ponty 1968, 138). Like Merleau-Ponty's image of the strands of the chromosome that constitute the chromosome's being in their encircling chiasm in order to represent this perceptual, intellectual, imaginative, emotional, etc., witnessing of the world, his sense of the relationship of the human and world as one in which they are "turning about one another" (Merleau-Ponty 1968, 264) has moved him far from the substance philosophies of the Western tradition.

Merleau-Ponty, in articulating this notion of embodiment as part of the flesh of the world—as part of an event of dynamic intertwining of open systems—has decentered the traditional sense of the subject. Criticizing Husserl's still progressive sense of the unfolding of time, Merleau-Ponty anticipates his

own later movement to a view of time lodged within the world in its "wild" being, a "barbaric time," one that is "without fictitious 'support' in the psyche" (Merleau-Ponty 1968, 267). Without its traditional foundation within itself as self-subsistent consciousness, there is no more subject as discrete being, but rather, as Merleau-Ponty stated in the passage cited as epigraph to this section, a "relation between circularities," one that is part of the "return" in "this stabilizing explosion" that is "my body-the sensible" (Merleau-Ponty 1968, 268). In other words—the words of chaos theory—my body in the world is a way of interacting in an open and chaotic system to achieve self-organizing continuance.

Having articulated human being as part of a turbulent but self-organizing event or open system, Merleau-Ponty's later ontology has succeeded in describing how "there is no freedom without a field" (Merleau-Ponty 1962, 439) for human being, as he had claimed almost two decades before. Merleau-Ponty has undermined the materiality-mind split by showing that we are of the same stuff as the world, and that this "stuff" is an intertwining or enlacing open system of transformation:

That means that my body is made of the same flesh as the world (it is a perceived), and moreover that this flesh of my body is shared by the world, the world *reflects* it, encroaches upon it and it encroaches upon the world (the felt [*sent*i] at the same time the culmination of subjectivity and the culmination of materiality), they are in a relation of transgression or of overlapping. (Merleau-Ponty 1968, 248)

Merleau-Ponty has replaced the 2,500-year-old Platonic insistence that we are self-moving creatures of will grounded in transcendent reason by human beings moved within the world like flows of energies—some represented as material, some as mental—so that we are a part and a distinctive self-asserting factor, but no more. Our freedom in maintaining ourselves and in transforming ourselves is only possible because we belong to the flux of the open system of which we are an active constituent.

The notion of intertwining means that Merleau-Ponty has conceived human being to be a fragile being, a vulnerable being. As a dissipative structure, reiterating its faith in recapitulating its rhythmic becoming with others, the human being is always on the brink of being lost in larger cycles and turbulences. This is a philosophy that recognizes our mortality, our fragility, and our openness in a way that is opposed to a long tradition of patriarchal thought.¹⁵ It is one thing to determine that lives are processes, parts of chaotic systems, but another kind of recognition is needed to take to heart the transitory, fragile, and unpredictable nature of our existence.

The ramifications of Merleau-Ponty's ontology and chaos theory's delimitation of systems have been embraced by Susan Griffin in a painstaking examination of hundreds of key texts in the Western scientific and philosophical tradition. Griffin draws the conclusion that the dualistic philosophical and scientific tradition was an effort to separate the "spirit from matter . . . the clean from the unclean. The decaying, the putrid, the polluted, the fetid, the eroded, waste, defecation, from the unchanging."¹⁶ The motivation she finds as a subtext recurring throughout the texts of this tradition is that "the thought of their death terrifies them" (Griffin 1978, 121). The tradition holds philosophy and science apart from the question of facing mortality, as discrete endeavors, but given the way in which each relationship to self and world interplays with all others, can we honestly maintain this separation?¹⁷

EMBRACING INTERWEAVING, FRAGILITY, AND MORTALITY *

If, for the moment, we accept that in articulating an ontology and epistemology that places humans in an interplaying flow with the rest of the planet—as a dynamic, material being—then we must also face the conclusion that we are facing the inherent instability of human existence, its contingency within the vectors of the open system, and our inevitable dissipation. For many contemporary thinkers, this means facing the overflow from the masculine-heroic ideal of overcoming or denying the power of death that has shaped our philosophical and scientific tradition. In her work, *Woman and Nature: The Roaring Within*, Griffin details patriarchy's march of classical rationalistic philosophy and science as a war of denial against matter in its enveloping, cyclic nature, in its promise of interaction with the world and others. If, in a warrior mentality, a vulnerability to death, the devourer, meant defeat, then matter itself becomes an enemy, as well as something from which one must separate—even though this presents an impossible project. The war against matter was also a war against whatever was identified with women, since woman was identified by this same tradition with nature and matter:

He says that woman speaks with nature. That she hears voices from under the earth. That wind blows in her ears and trees whisper to her. That the dead sing through her mouth and the cries of the infants are clear to her. But for him this dialogue is over. He says he is not part of this world, that he was set on this world as a stranger. He sets himself apart from woman and nature. (Griffin 1978, 1)

To see matter as distinct from mind and then to identify mind as the human essence is a *motivated* assertion: it serves the purpose of hiding from mortality. Both Merleau-Ponty's ontology and chaos theory not only face the implications of mortality that undoing the dualistic retreat from matter entails, but both conceive of matter as itself part of a dynamic, unfolding open system of forces. Thus, they reveal, for the first time, the authentic fragility of both human and nonhuman existence. Yet, at the same time, such a system does not consign existence—human and nonhuman—on this planet to an utter foundationlessness nor to a sense of chaos in its oppositional dualism as mere randomness. Rather, in chaos as we have described it in this chapter, there is a self-ordering that promotes both meaning and vitality, but it is precarious.

As "outcasts" from the insulating power structures of patriarchy, Griffin maintains that many women have been consigned by the weight of history to enter what she calls "the room of the undressing." This is a recognition of vulnerability and interconnectedness with the rest of the planet—its creatures and material beings. Marked by the dualisms of the scientific and philosophical tradition, women have been targets of exploitation and devaluation in ways parallel to aspects of the material environment. However, like Woolf and Merleau-Ponty in the passages quoted above, Griffin recognizes that in being forced—even coerced—to face the vulnerability of our material being in kin with other entities on the planet, there is also a wisdom gained that had been ignored by the tradition: "Where we go in darkness. Where we embrace darkness. . . . The shape of this cave, our bodies, this darkness. This darkness which sits so close to us we cannot see, so close that we move away in fear. We turn into ourselves. But here we find the same darkness, we find we are shaped around an emptiness, that we are a void that we do not know" (Briggs and Peate 1990, 157–59). Although obtained at the cost of oppression, the insight is valuable. The freedom from a substantialist view of reality, the return to indeterminacy and interweavement, betokens a vulnerability that Griffin sees emerging by different avenues in modern science. Ironically, Western science, as one of the systems that helped to devalue both the status of materiality and women has been forced by its own conceptual impasses to move toward insights that closely parallel the journey that women's spirituality has had to make in dealing with its difficult history.

Then the fractal reiterations of chaos theory take on a different weight, the weightiness of being embodied without the guarantee of linear order and the eternity of substance. Dissipative structures and sudden catastrophic change suddenly take on a different sense when it is the rhythm of my heart that may be swept up suddenly in a vortex of turbulence and I will be no more. Philoso-

phy since Plato has sought to create an infinite distance between our "true being" and nonbeing, in which realm we are temporarily residing. However, chaos theory, Merleau-Ponty's ontology, and Griffin's conviction that "We are nature seeing nature. We are nature with a concept of nature. Nature weeping. Nature speaking of nature to nature . . . and when I see the arc [of the bird's flight] . . . I fly with her . . . leave myself, die for an instant, live in the body of this bird whom I cannot live without, as part of the body of the bird will enter my daughter's body . . ." (Griffin 1990, 226–27) suggest that this gap does not exist: life is death in nonlinear iterations smiling through the face of time.

These reflections bring us back to the image with which this chapter began: the dead father. If traditional science and philosophy were part of an articulation of the human identity that sought to screen out the threat of uncontrollable, unpredictable change, and death, they also erected a barrier to embracing the source of dynamism and transformation which is the heart of vitality. In the denial of death, the father was creating what he feared:

No one can remember when he was not here in our city positioned like a sleeper in troubled sleep, the whole expanse of him running from the Avenue Pommard to the Boulevard Grist. Overall length, 3,200 cubits. Half buried in the ground, half not.

At work ceaselessly night and day through all the hours for the good of all. He controls the hussars. Controls the rise, fall, flutter of the market. Controls what Thomas is thinking, what Thomas has always thought, what Thomas will ever think, with exceptions. The left leg, entirely mechanical, said to be the administrative center of his operations, working ceaselessly night and day through all the hours, for the good of all. In the left leg, in sudden tucks or niches, we find things we need. . . .

We want the Dead Father to be dead. We sit with tears in our eyes wanting the Dead Father to be dead—meanwhile doing amazing things with our hands.¹⁸

The corpse of the dead father kept blocking the avenues of thought: in science, philosophy, politics, economics, religion, and all avenues of human expression. This rule of a certain linear logic was often thought to be an enlightenment, a boon for the good of all, by those who proclaimed its universality. But this spirit of disconnection and inertness cast the only life left in his own image: a death in life.

Merleau-Ponty's last, unfinished manuscript was a long meditation on his frustration that notions of the thing, of the world, of psychology, and many of the key concepts of the Western tradition had been arrived at by a refusal to enter into the interrogative and involving nature of experience. The positivity, plentitude, and self-identity of concepts referring to things were the result of

"threatening the things with our non-recognition of them": "The thing thus defined is not the thing of our experience, it is the image we obtain of it by projecting it into a universe . . . where the spectator would abandon the spectacle" (Merleau-Ponty 1968, 162). This is the detached stance of patriarchal philosophy and science—Barthelme's image of the dead father—that does not want to be implicated in a system that is contingent, interdependent, and unpredictable. Instead of maintaining this traditional distance, Merleau-Ponty called for facing up to the reality that "the thing, the pebble, the shell, we said do not have the power to exist in the face of and against everything; they are only mild forces that develop their implications on condition that favorable circumstances be assembled" (Merleau-Ponty 1968, 161). This vision of interplaying forces, even of the most "solid material objects," as radically open to the fluctuations of other forces, leaves us without the firm foundation of the tradition. So Merleau-Ponty notes of the recognition necessary to open this new vision: "we learn to know the fragility of the "real" (Merleau-Ponty 1968, 40).

Merleau-Ponty struck a blow against the dead fathers when he claimed that "perceiving, speaking, even thinking" are experiences "both irrecusable and enigmatic" (Merleau-Ponty 1968, 130). The intellect and other modes of apprehension and articulation are not vehicles to remove us from being caught in interdependent and fluctuating processes, they only involve us more completely in a shared fragility with other beings. Thus, rather than certainty and security, Merleau-Ponty saw the fruit of inquiry to be "the insistent reminder of a mystery as familiar as it is unexplained, of a light which, illuminating the rest, remains at its source obscurity" (Merleau-Ponty 1968, 130). This is a different vision than that of an illumination that dispels doubt and allows for control of the planet and our existence.

The body, on Merleau-Ponty's account, is not separate, quantifiable, and ultimately mechanical, as is the corpse-body of the dead father. Instead, Merleau-Ponty postulates that "our own body is in the world as the heart is in the organism" (Merleau-Ponty 1962, 203). This metaphor can be seen as a sign that Merleau-Ponty was willing to let blood back into philosophy—its vitality—and think matter, not as inertness, but in the ensnaring pulsation of the "flesh of the world." Within the way of flesh in which selves and world entwine, he saw the chaos that is not the opposite of order, that is not blind randomness, the dead father's projection of fear, but rather, is a "winding," a "*serpentelement*," the serpent, the ancient Goddess symbol of fecundity, of the risk of dissipation as part of ongoing cycles of creation and dissipation. The way to see this creative spiralling is not to pay attention to the stare of the dead father into the heavens, but to focus on our bodies within the matrix of the world, on how we are "meanwhile doing amazing things with our hands."

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NOTES

Author's Note: This essay is dedicated to the fond memory of Linda Singer. Her inspiration continues, and her thoughts helped form many thoughts in this essay (as she remains part of the process described here). However, the directly embodied presence of her shining spirit is sorely missed.

1. That is, in what Merleau-Ponty would call a chiasmatic relationship, as the two strands of chromosomal material entwine each other, neither two nor simply one.

2. John Briggs and F. David Peate, *The Turbulent Mirror* (New York: Harper and Row, 1990), p. 13.

3. Kali is the wild, erratic, dancing Hindu goddess of death and destruction.

4. If one looks at the supposed entity called a "lake," one finds various transformations interlocked in rhythmic patterns of ongoing transition or what Merleau-Ponty called "passage." One aspect of these fluxes is constituted by the population of pike preying on the population of trout. If one stocks the trout, the feasting pikes' numbers balloon. However, the now scarce trout spell the spiralling decrease of the pike. In turn, this ebb of pike only means the beginning of the curve upward of trout numbers in phase space. Yet, this spiral is a tale too simple to do justice to the complexity of the biosphere, to the fecund perceptual world. Frog-insect cycles also call for a meeting with pike-trout cycles and the representational spirals blossom into tori, doughnut shaped spaces of mapped rhythms. The movement within orders is fed into the movement among orders, the complicated cycles are not random, do not wobble off into sheer dissipation, but they too find a way, settle into a path of an "attractor." This bit of phase space seems to "pull" the system into patterns of change. The "pull" is a way of expressing that perturbations in the system that could have caused change or a new direction if merely added as external units, instead events are resisted from having this effect by the system feeding back into itself, allowing self-regulation or auto-ordering. What emerges in the represented change of the system is a circling on the surface of the sketched doughnut, a wavelike line that circles the doughnut without closing its path. This tracing a way in the phase space of events never quite links up with itself, and slinks unendingly around the surface of the torus chasing itself in a nonperiodic return: an identity of rhythm, which is not self-coincident (Briggs and Peate 1990, 37-40).

5. Maurice Merleau-Ponty, *Phenomenology of Perception*, trans. Colin Smith (New York: Humanities, 1962), p. 456.

6. See especially chapters 2 and 3 in Mazis, *Emotion and Embodiment: Fragile Ontology* (New York: Peter Lang, 1994).

7. Virginia Woolf, *To the Lighthouse* (New York: Harcourt, Brace, and World, Inc, 1927), p. 147.

8. "Thus since the seer is caught up in what he sees, it is still himself he sees: this is the fundamental narcissism of all vision. And thus, for the same reason, the vision he exercises, he also undergoes from things, such that, as many painters have said, I feel myself looked at by the things, my activity is equally passivity—which is the second and more profound sense of the narcissism . . . so that the seer and the visible reciprocate one another, and we no longer know which sees and which is seen" (Merleau-Ponty 1968, 139).

9. "The conceptual evolution we have described is itself embedded in a wider history, that of the progressive rediscovery of time. We have seen new aspects of time being progressively incorporated into physics, while the ambitions to omniscience inherent in classical science were progressively rejected" (Ilya Prigogine and Isabelle Stengers, *Order out of Chaos: Man's Dialogue with Nature* [New York: Bantam, 1984], p. 208).

10. For an extended treatment of how reversibility is about temporal intertwining see Mazis, "Merleau-Ponty and the 'Backward Flow' of Time: The Reversibility of Temporality and the Temporality of Reversibility," in *Merleau-Ponty: Hermeneutics and Postmodernism*, ed. Busch and Gallagher (Albany: State University of New York Press, 1992), pp. 53-68.

11. Woolf, pp. 189-90.

12. "Eye and Mind," trans. Carleton Dallery, collected in *The Primacy of Perception and Other Essays*, ed. James Edie (Evanston: Northwestern University Press, 1964), p. 180.

13. "Now perhaps we have a better sense of what is meant by that little verb 'to see.' Vision is not a certain mode of thought or presence to self; it is the means given me for being absent from myself, for being present at the fission of Being from the inside—the fission at whose termination, and not before, I come back to myself" (Merleau-Ponty 1964, 186).

14. "The ideal of objective thought is both based upon and ruined by temporality. The world, in the full sense of the word, is not an object, for though it has an envelope of objective and determinate attributes, it also has fissures and gaps . . ." (Merleau-Ponty 1962, 333).

15. See Mazis, *The Trickster, Magician, and Grieving Man: Reconnecting Men with Earth* (Santa Fe: Bear and Co., 1994), especially "Part One," which traces from Plato and the Greek reinterpretation of the "heroic," the genesis of a dualistic tradition that maximizes a sense of autonomy of self in order to negate the threatening sense of dispersion in mortality.

16. Susan Griffin, *Woman and Nature* (New York: Harper and Row, 1978), p. 95.

17. See also chapter one, Mazis, *Emotion and Embodiment: Fragile Ontology*.

18. Donald Barthelme, *The Dead Father* (New York: Simon and Schuster, 1975), pp. 10-11.