Maurice Merleau-Ponty's late work locates humans within a wild or brute being that sustains a synergy among life forms. His Nature lectures explored the philosophical implications of evolutionary biology and animal studies, and with *The Visible and the Invisible* describe a horizontal kinship between humans and other animals. This work offers a striking alternative to Heidegger's panicky insistence on an abyss between humans and other animals that Derrida questions but cannot seem to discard. For Merleau-Ponty, literary works probe the invisible realm of wildness that is our only environment, a realm full of language and meaningfully experienced by all animals.

Maurice Merleau-Ponty's late work defines a chiasmic ontology in which human experience is part of a wild or brute being that sustains all life and provides a synergy among its distinct forms. His Nature lectures at the Collèg de France explored the philosophical implications of modern science, including evolutionary biology and animal studies, and together with the unfinished manuscript of *The Visible and the Invisible* gestured toward a horizontal kinship between humans. This work offers a striking alternative to Heidegger's panicky insistence on the abyss between humans and other animals, an abyss that Derrida questions but cannot seem to discard in *The Animal that Therefore I Am*.

Matthew Calarco wonders why Derrida would resolutely refuse to abandon the human-animal distinction and "why he would use this language of ruptures and abysses when the largest bodies of empirical knowledge we have concerning human beings and animals strongly contest such language."¹ But Derrida explicitly resists any claims of "biological continuism, whose sinister connotations we are well aware of . . ."² As a Jew he might have been particularly aware of the cruel history of Social Darwinism, eugenics and animal coding for abjecting human groups during the twentieth century. However, accepting a continuum between our species and

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other creatures need not lead to extremes such as Social Darwinism or some of the excesses of sociobiology and Neo-Darwinism which include humans within mechanistic and reductionist descriptions of organic behavior. A continuum would instead imply that many kinds of consciousness and perception evolved over the hundreds of millennia of life's emergence. Human sentience would then be understood as one of many kinds of animal awareness, as the work of Jakob von Uexküll asserts. Neither humans nor other animals could then be dismissed deterministically as mechanisms; instead they would have to be recognized as active participants shaping the many meanings of the biological community. This is the minority position voiced so strongly in the Renaissance by Montaigne in "The Apology for Raymond Sebond" and by Darwin in The Descent of Man in the nineteenth century.  

Evolutionary biology, recent archeological finds, and empirical animal studies have erased much of the distance between homo sapiens and our coevolved animal relatives such as the great apes, dolphins, elephants, and even parrots. The Humanist tradition of insistence on our separateness from the rest of the animal community seems increasingly absurd, in ways that Merleau-Ponty's proto-ecological philosophy anticipated. Although he acknowledged the distinctive qualities of human communication and art, he saw them as having developed from gestural meaning that is fully enmeshed in the phenomenal world. The varieties of human

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3 Calarco sees Derrida's position as a solution to a false dilemma, a choice between extremes of complete separation between humans and other animals, or reductive homogeneity, Zoographies, p. 149.

speech are our particular ways of "singing the world." For him, literary works probe the invisible realm of wildness that is our only environment, a realm that he saw as full of language and meaningfully experienced by all animals.

Strangely, Merleau-Ponty is rarely mentioned by most participants in the recent spate of critical animal studies stimulated by Derrida's reevaluation of Heidegger's position. In these writings, only Donna Haraway, Matthew Calarco, and Cary Wolfe have seriously challenged Derrida's resistance to the idea of biological continuism. Why might that be, when Merleau-Ponty's work so closely accords with much postmodern theory as well as with the concerns of present environmental and animal studies debates? Already in the 1950s he was moving beyond human exceptionism and seriously exploring the philosophical consequences of biological and ethological research. Taylor Carman and Mark Hansen believe one reason is that Merleau-Ponty's premature death prevented the full development of his philosophical project. They also suggest that his reputation fell victim to the radical spirit of 1968 which led a younger generation including Derrida, Lacan, and Foucault to lump Merleau-Ponty together with Husserl and Sartre and to accuse phenomenology of humanist focus on consciousness, or subjectivism.

That charge could not have been made if his late writings and lectures had been well-known. Not only did he reject that kind of focus on human consciousness, but his lifelong engagement with science took him well beyond the positions of other phenomenologists. His

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8 Merleau-Ponty's position on human-animal relations in this late work is complicated by its unfinished
attitude toward scientific thought was not uncritical, however, for he believed it to be limited by objectivism and its failure to acknowledge its situatedness within culture. For him, "classical science is a form of perception which loses sight of its origins and believes itself complete;" its theories and schematizations are "an abstract and derivative sign-language, as is geography in relation to the countryside in which we have learnt beforehand what a forest, a prairie or a river is." But he also saw that scientists provided the most carefully regulated available attention to the natural world. All through his career he closely connected his arguments to relevant scientific research. In particular he relied upon Gestalt psychology and the disciplines of neuroscience during the 1930s and 1940s; and explored physics, animal studies, human physiology, and evolutionary biology in the 1950s. He saw philosophy and science as complementary explorations of the world and thus necessarily engaged in productive dialogue with one another.

*The Visible and the Invisible* is unequivocal in asserting the essential wildness of Being and the intertwining or chiasmic relationships among all creatures and things in the dynamic unfolding of reality through evolutionary time. Human beings, like all other living things, are immersed in this *flesh* of the world, within "a spatial and temporal pulp where the individuals are formed by differentiation." Within this flesh, species and individual organisms manifest not only formal resemblances but also identical constituting substances, i. e. atoms, molecules, and 

quality. The posthumously published manuscript of *The Visible and the Invisible* was relatively polished and carefully worked out as far as it went, but as translator Robert Vallier explains, the Nature lectures are preserved only in an anonymous student's notes and Merleau-Ponty's own scribbled notes for the final course of 1959-1960. See "Translator's Introduction," *Nature: Course Notes from the Collège de France*, compiled and with notes by Dominique Sélgard and trans. Robert Vallier (Evanston: Northwestern U P, 2003) p. xiv. Even so, the notes show Merleau-Ponty testing out the meaning of specific research in the life sciences and exploring their philosophical consequences.]

9 *Phenomenology of Perception*, p. 57.
10 Ibid., p. ix.
microorganisms that embody or mirror biological macrocosms. Heidegger would be horrified to think that each human or other animal body was itself a symbiotic community of many tinier bodies. Yet this new understanding would not have troubled Merleau-Ponty, who asked, "Why would not the synergy exist among different organisms, if it is possible within each? Their landscapes interweave, their actions and their passions fit together exactly . . . "\(^\text{12}\) When Alphonso Lingis describes the hundreds of bacteria inhabiting our mouths to neutralize plant toxins or those digesting the food in our intestines,\(^\text{13}\) he is extending this point to recent discoveries about the genetic and cellular make-up of our bodies which came long after Merleau-Ponty's death but which show that the symbiotic intertwinings within each organism do indeed mirror those outside them. But Merleau-Ponty's concepts of écart and dehiscence account for distinctions among living creatures at the same time that there is kinship and continuism. The analogy he uses to explain this situation is that of our two hands both touching and being touched by each other, both parts of the same body but also distinct from each other. As it is with our two hands, so it is also between our conscious awareness of our body and its inaccessible inner thickness, between our movements and what we touch, and between us and other kindred creatures. This is a synergy of "overlapping and fission, identity and difference."\(^\text{14}\)

In the Nature lectures, Merleau-Ponty acknowledged biological continuism by considering the meaning of new work in evolutionary biology and discussing the silent emergence of humans and their horizontal relationship to other species that Teilhard de Chardin had defined in *The Phenomenon of Man*. Teilhard's analogy of human evolution to a flower emerging from a branch as a novel development from the form of a leaf is problematic in its

\(^{12}\) Ibid., p. 142.


\(^{14}\) *The Visible and the Invisible*, pp. 142, 148.
reductionist linearity, as Deleuze and Guattari might point out, for it ignores the "rhyzomatic"
indeterminacy and multiplicity of relationships among living things. But for Merleau-Ponty the
analogy provides a clear illustration of "the strange kinship" of humans and other animals.
Though he completely accepted the idea that biological forms evolved over a period of many
millions of years, he rejected what he saw as dogmatic and mechanistic Darwinian notions of
natural selection that emphasize the activity of the environment upon a basically passive
organism. In doing so, he anticipated discoveries of our own time about evolutionary
flexibility, genetic drift, and internal forces in organisms that are just as formative as external
environmental constraints.

The movement of argumentation in Merleau-Ponty's exploration of Animality in the
1957-1958 Nature lectures (Second Course) begins with what he called "The Tendencies of
Modern Biology" in studies of embryonic development by Gesell and Coghill which depart from
the rigid mechanical traditions of previous biology. Unlike deterministic Cartesian ideas of
bodies as clearly-defined assemblages of discrete working parts, the new biology examines how
complex adult forms emerge from simple beginnings that could never have formally predicted
them or quantitatively produced them. Analyzing such research, Merleau-Ponty shows how the
development of the adult creature is organic, material behavior that is a kind of embodied
meaning unfolding in participation with its environment. The gradual evolution of each
organism from its completely different and rudimentary embryonic shape is a kind of echo
within its body of the long evolutionary history of life on the planet. This is only an analogy,

16 Nature: Course Notes from the Collège de France, compiled with notes by Dominique Sélgard and trans.
17 Gabriel Dover, "Human Evolution: Our Turbulent Genes and Why We Are Not Chimps" in Bryan
however, for Merleau-Ponty does not subscribe to Ernst Haekel's now-discredited claim that ontogeny recapitulates phylogeny. Rather, he implies that similar emergent forces are at work in both. The focus on embryonic growth and change works implicitly to prepare his audience for his later emphasis on human evolutionary emergence from earlier forms. And in fact, the entire discussion of animality is interwoven with commentary on evolutionary concerns.

From embryology, the lectures go on to consider Jakob Von Uexküll's innovative concept of the *Umwelt*, derived from careful scientific research on perception among many individual species, and then on to several ethologists studying animal appearance and formal mimicry. It culminates in a discussion of Konrad Lorenz's work on instinct. All along he is building a case for the profound interrelationship of creatures with their environments, from simple organisms to more and more complex ones, and finally to our own species and the appearance of our particular way of "being a body,"\(^\text{18}\) with its distinctive consciousness, or what has been called "spirit" in traditional philosophy. This reflective quality of our being has emerged over evolutionary time from the immanent *logos* or meaning of the biosphere, as it too has changed from earliest life forms three or four billion years ago. Our consciousness is thus part of the profound biological continuity we share with other animals, as in the type of "pre-culture" Merleau-Ponty described in the behavior of crabs using shells of other creatures in a variety of ways, as we shall see below.

At the heart of the animality lectures lies the assertion that "animality is the logos of the sensible world: an incorporated meaning."\(^\text{19}\) This meaning is revealed in experiments on axolotl lizard embryos by G. E. Coghill in the 1920s and in work on human embryos by Arnold Gesell and Catherine Amatruda in the 1940s, where development is seen to unfurl in behavior that

\(^{18}\) *Nature*, p. 208.
\(^{19}\) Ibid., p. 166.
anticipates the organism's future forms. The axolotl lizard begins its life as a tadpole living in water and gradually develops legs and moves onto land to grow into a seven-inch long reptile. At first it has no mobility but only muscles that can be excited locally by touch. At this stage its motor system has no connection with its sensory system. Then, as nervous system connections are made in the head, the organism can flex its head. From the head, the nervous system connections move down the body to the tail, allowing first a stage of curling or buckling the body from head to tail and then uncurling and flexing in the other direction. Next the tadpole begins to make an S curvature to one side, in a wavelike movement across the body like a zigzag. When the animal makes several of these S movements from side to side, it is swimming. As embryonic development continues, anterior feet begin to emerge but function within this global swimming behavior of the trunk. Their form anticipates their future function before there is any musculature to make them work independently, though "sketches of motor fibers" begin to appear in the feet. As Merleau-Ponty puts it, "The leg emerges, absolutely subjugated by the trunk, then it battles for its freedom." Coghill is famous for introducing the idea that because the embryo is integrated and has moving gills in the egg well before the nervous system appears, the nervous system "is not the last explanation," or the central place or governing director of movement. Merleau-Ponty believed that the importance commonly assumed for the brain and nervous system comes from the easy way it fits with mechanical descriptions of the body. But the first behavior of the animal is organized "under preneural gradients [chemical, electrical, of temperature, etc.]; the nervous system emerges from a preneural dynamic." In this way the developing embryo is a dynamic system in profound participatory response to its surroundings.

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20 Ibid., p. 144.
21 Ibid., p. 142.
22 Ibid., pp.142-143.
Similarly, Gesell's work defines the animal body as "a take on the exterior world" whose organization is the same as behavior which is dynamically reciprocal with that world. In another example of an animal body developing in order to properly interact with that world, he describes the premature human child who has only a hesitant sleep that is difficult to distinguish from wakefulness, until organic development allows for the gradual development of two different behaviors that Merleau-Ponty explains are "reciprocal terms of a unique function. . . ."\textsuperscript{23}

As in the case of the axolotl feet, animal organs develop before there is a function for them. For example the elements of the human electrocardiogram area appear in their adult state at nine and a half weeks of embryonic development before there is any nervous control of the heart. Form thus anticipates function, carrying a reference to the future and embodying "a project in reference to the whole of [the creature's] life."\textsuperscript{24} Gesell also described the way the elements of the embryo shift and shuffle into new positions, combinations, novel emerging parts and relationships. The stability of the organism is thus in constant flux, endlessly reshaping itself. For these reasons and others, Gesell insisted that "the organism is not a machine but a state of great dynamism."\textsuperscript{25}

Earlier, Uexküll had posited a \textit{Bauplan} or implicit intrinsic building plan for each organism, which anticipated such embryonic research.\textsuperscript{26} He had described the functioning of organisms within the particular environments or \textit{Umwelten} created in reciprocity between their own perceptive abilities and the situations in which they are immersed. For each animal or plant, the surrounding habitat is full of "meaning-factors" and "meaning carriers," things recognized in

\begin{footnotes}
\item[23] Ibid., 146-147.
\item[24] Ibid., p. 151.
\end{footnotes}
the subjective *Umwelt* that have significance as food or danger or opportunity according to the coherent functioning of the organism. "The life-task of the animal and the plant consists of utilizing the meaning-carriers and the meaning-factors, respectively, according to their particular building-plan." For Uexküll, "The question of meaning is . . . the crucial one to all living beings," and it is immanent in the world.²⁷

Uexküll's work is particularly important for Merleau-Ponty in its emphasis on the active role of all creatures in shaping their *Umwelten*. This concept shapes an evolutionary understanding which he sees as fuller and less narrowly utilitarian than the popular Darwinian notion of ruthless environmental selection pressures determining which organisms are fit to survive. Merleau-Ponty shows how tautological the narrow Darwinian argument is.

How do we understand this activity that shows an Umwelt? According to Darwinian thinking, there is nothing to understand. Different fortuitous elements are welded together because every other arrangement, or at least every bad arrangement, would not explain the survival of the animal. Only the animals that present extraordinary arrangements were able to survive. The factual conditions exclude every animal that does not present such dispositions. But this said, a Darwinian-type thinking suppresses the problem. We cannot show ourselves how this activity is constituted; we postulate that what is, is possible. Darwinian thinking gives the actual world the power to determine the only possible.²⁸

The result is a Just-So Story or a Panglossian conclusion that whatever is, is right.

As a powerful alternative to such a theory, Uexküll's *Umwelt* concept accounts for the active behavior of the animal defining its territory in concert with the soils and plants and other

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²⁷ *Theory of Meaning*, pp. 36-37.
²⁸ *Nature*, p. 175; further citations of this work will be given parenthetically in my text.
organisms in its community, thus co-creating its world. We might think of an ant building its anthill with its fellows, changing the aspect of the place around it and enlisting other organisms such as aphids in feeding its community. Or we might point to the North American example of beaver ecologies that determined the landscapes of lakes and wetlands in the upper Midwest before European colonization. Corals around the globe make similar profound contributions to the reef systems that become home to a myriad of other animals and plants.

Such phenomena are not merely physical for Merleau-Ponty but also constitute symbolic and cultural behavior. Operating within its own Umwelt, Merleau-Ponty explains, each animal ‘defines its territory as a privileged emplacement’ and functions in a symbolic realm. A crab, for example, can use a sea anemone to camouflage its shell and protect it from predators, or to replace its shell if it has been lost, or it can use the sea anemone as food. "The architecture of symbols that the animal brings from its side thus defines within Nature a species of preculture. The Umwelt is less and less oriented toward a goal and more and more toward the interpretation of symbols" (176). This realm of meaning inheres in the relations among the parts of the organism, in the relations of the organism to its territory, and in the relations of animals among themselves, "so well that we no longer see where behavior begins and where mind ends"(178).

The implication of this research suggests that mind or consciousness has evolved or emerged from tacit beginnings over millions of years, into more and more reflexive abilities in animals.

"What is thus unfurled?" asks Merleau-Ponty. "What is the "subject" that Uexküll speaks of? The unfurling of the animal is like a pure wake that is related to no boat"(176). To answer this question, he reports Uexküll's explanation that a chain of events is unfurled from the egg to the chicken, and that it never becomes an object because its internal law never becomes visible to us. We see only momentary manifestations that are always in the process of changing or even
disappearing as some new shape takes over. Essentially this is not the appearance of a new force, because the living creature works only with "physicochemical elements" in a spacial and temporal field where a "surging-forth of a privileged milieu" causes those elements to join according to unseen relations. Once this occurs, Merleau-Ponty says, "We can at this moment speak of an animal," which is "like a quiet force" regulating, making detours, preserving its own inertia as for example the planar worm does if it is cut in two, each part becoming a whole animal (177).

It would be difficult to find a more dramatic contrast between this sense of multiple, abundant, sentient agency and Heidegger's interpretation of Uexküll's Umwelt as a self-inhibiting ring that fundamentally captivates each animal, thus "withholding the possibility of the manifestation of beings." For Heidegger this means that non-human creatures cannot have genuine perception; they are "poor in world." In contrast to that negative view, recent microbiological research has supported Uexküll's understanding of the active way that organisms shape their worlds, and information theory has extended the ideas about intrinsic meaning and kinds of communication which Merleau-Ponty drew from him. Richard Lewontin, for example, explains that "organisms not only determine what is relevant and create a set of physical relations among the relevant aspects of the outer world, but they are in a constant process of altering their environment." As they consume, organisms and living systems also produce; they are "the transformers of materials, taking in matter and energy in one form and passing it out in another..."
that will be a resource for consumption for another species."\textsuperscript{30} Indeed, "the environment is coded in the organism's genes, since the activities of the organism construct the environment."\textsuperscript{31}

From considering how animals create their Umwelten in interaction with their surroundings, Merleau-Ponty goes on to explore physical resemblances of animals such as butterflies or preying mantises or the Arctic fox to the environments in which they live. For him the existence of the sense organ is similarly a kind of mystery, like the resemblance of the butterfly to its milieu, because it forms before it has anything to sense, as the butterfly forms before it knows what surroundings to adapt to. It is a physical history of relationship at the same time that it anticipates the world it will encounter.

In the final lectures on Animality, Merleau-Ponty considers the work of ethologists such as Niko Tinbergen and Konrad Lorenz regarding instinctive animal behaviors and their relation to language and sentience. As with his analysis of the embryological research of Coghill and Gesell, when discussing Lorenz, Merleau-Ponty emphasizes the way young animals anticipate future situations when they begin to behave in ways they have never seen others perform and for which they have no need as yet. These are fragmentary parts of not yet fully shaped or completed instinctive activities such as nest-building which anticipate their futures. Lorenz gives the example of a young heron that will not build a nest until the following year but "one day perceives leaves, falls in front of them in a sort of ecstasy, then executes the behavioral strategem of accumulation of leaves for the nest, and then falls back into calm. It is not that the instinct is yet there, but that it is announced by partial reactions. Then it is as if this behavior is

\textsuperscript{31} Ibid., p. 100; see also Steven Rose, Lifelines: Biology, Freedom, Determinism (London: Penguin, 1997), pp. 230-249.
erased." For Merleau-Ponty, "The instinct is an activity established from within but that possesses a blindness and does not know its object." It is thus not adaptation but anticipation of a possible situation. In a way it is "a tension that wants to find relief without knowing why" and thus does not aim at the real as much as at something imaginary; it is a kind of drama that is closely related to symbolism that in reproductive rituals becomes "a phenomenon of reciprocal expression"(196-197). Lorenz sees mating behavior as coming close to human language, and his conclusions lead Merleau-Ponty to say that "we can speak in a valid way of an animal culture." While Lorenz does not directly assert the existence of animal consciousness, Merleau-Ponty says that he "practically affirms that none of those who have a familiarity with animals would deny them consciousness." Merleau-Ponty responds to these speculations by concluding the Animality lectures with what he sees as the basic question to be pursued: "Is there an animal consciousness, and if so, to what extent?"(199)

He died before he could go any further. But in fact, he had already implied the answer throughout the Animality lectures. In his discussion of the developing embryo's formal anticipation of its future, he described behavior as a principle immanent to the organism, dynamically and tacitly shaping its emergence. Similar to a dream, such a mode of knowledge is never self-conscious but is part of the relations among the parts of the organism, the relations of the organism to its milieu, and the relations among animals, constituting implicit meanings that emerge in "the higher animals" as instincts and various other kinds of consciousness. Given the way the discussion the Nature lectures move from embryonic development in lizards and humans to research on a variety of insects and mammals, we can infer that the evidence points to many

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kinds of animal consciousness, not simply "an animal consciousness." The extent and explicitness of such consciousness would have to vary widely.

But in the last course focused on the human phenomenon that was the ultimate goal of Merleau-Ponty's investigations of science and evolution, a tinge of human exceptionalism appears. Here in the 1959-1960 lectures on "Nature and Logos: the Human Body," we find an occasional emphasis on "soul" or "spirit" that he seemed to claim as uniquely human. Merleau-Ponty asserts that "we are not animal," and he speaks also of the "strange anticipations or caricatures of the human in the animal" (213-214). When discussing "The Libidinal Body and Intercorporeity" he comments on the union of body and soul, speaking of different kinds of spirit for humans than for animals (224-225). Such distinctions imply a move toward something like what Heidegger sought to capture with the concept of Dasein. But finally, when he directly comments on the evolution of humans, he accepts Teilhard's insistence that there is no rupture in the evolutionary process, no point when we can clearly see humans emerge as a new form of life (267-268). Humans imperceptibly emerged in their distinct form through a lateral kinship which remains with us. Thus, he concludes that "Animality and human being are given only together" (271) and insists that only an understanding of our natal past as a species and our continued existence within "a fabric of preobjective, enveloping being" can give us an adequate sense of who we are" (273).

33 Bryan Smyth insists that Merleau-Ponty's position "remains indelibly humanistic," even though he sees it as potentially open to wider considerations of human-animality kinship. "Merleau-Ponty and the Generation of Animals." *PhaenEx* 2, 2 (2007), p. 204. But if we look at how his description of human uniqueness is contextualized, I think we must conclude that he could not have meant that humans alone have consciousness or spirit. Ted Toadvine suggests that he "recognizes that our intertwining with animality requires a new understanding of reflection, . . . since treating the power of reflection as the distinguishing mark between humans and animals risks returning to a philosophy of consciousness that alienates humanity from life." *Merleau-Ponty's Philosophy of Nature* (Evanston: Northwestern U P, 2009), pp. 95-96).
It seems reasonable to assume that in the Nature lectures Merleau-Ponty was still working out his thinking on the human place in the animal world and Nature more broadly, and that he would have eventually acknowledged the continuum of various kinds of consciousness emerging through the evolution of myriad animal species. Indeed, in a short radio presentation about animal life which he gave in 1948, he criticized traditional mechanistic theories about animals and said that nonhuman animals "proceed to trace in their environment, by the way that they behave or act, their very own vision of things" and thus manifest "a kind of interiority."\textsuperscript{34}

The proliferation of animal studies in the decades since his death begins to show us in remarkable detail how this is the case with a wide range of other animals, from parrots to dolphins, dogs, and our cousins the great apes. Because we evolved together with the other animals from simple microorganisms millions of years ago and have similar brain structures and organs and social habits, we can understand each other's behaviors and subjective states that are in many ways like our own. Evidence for Uexküll's claims about overlapping \textit{Umwelten} is now widely available in the scientific literature, and the kinds of cross-species mirroring and exchange which Giles Deleuze and Felix Guattari called "becomings" are being described in greater and greater detail and frequency.\textsuperscript{35}

The question of language has always been central to disputes about the relation of humans to other animals, with scientific and philosophical tradition firmly resistant to suggestions that other animals can communicate in complex ways as we do. Merleau-Ponty's

\textsuperscript{34} Quoted in Toadvine, \textit{Merleau-Ponty's Philosophy of Nature}, p. 85

linguistic theories stand outside that tradition. He believeed that that language is embodied, an organic and physical part of the natural world. Because he saw humans as part of the evolutionary continuum of life forms in a meaningful universe, his work provides some philosophical anticipations of the remarkable advances in animal language studies of recent decades. The final section of this discussion will introduce the main aspects of his position, but first we must confront the problem of what counts as language.

Typically, when a previously unknown communicative ability is discovered in an animal community, skeptics rush to discount its validity by detailing ways in which it differs from human language in complexity of syntax, creativity, or indication of independent agency. A classic example is the waggle dances of honeybees whose communicative functions were described by Karl von Frisch from the 1920s through the 1940s and have been carefully studied by other scientists since that time. Obviously bees do not speak in voices like ours, and their methods of signaling information are very different from human gestures. Yet as Donald Griffin explains, in spite of some remaining skepticism, it now seems quite certain that bees and some other social insects like ants communicate to nestmates various kinds of information about food sources, possible dangerous intruders, and locations for possible new homes for swarms. Inside the hive communication occurs through odors and ingesting behaviors to indicate whether more nectar is needed or whether pollen or water are required instead. The remarkable discoveries of Sue Savage-Rumbaugh about the linguistic abilities of the bonobo Kanzi are much easier to accept as related to human language, though she too has faced skeptical arguments from scholars who demand evidence of grammatical structures and category formation like those in human

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language. Because he was raised among humans and surrounded by speech as young children are, he learned to understand spoken English and to respond using a keyboard of symbols. Kanzi can understand a complex range of sentence types and create statements of syntactic complexity and novelty to express his desires, his plans, memories and activities (64-69). He also talks to himself by using the keyboard with his back turned to human companions or by moving to a place where he thinks the symbols he is touching are not visible. Sometimes Savage-Rumbaugh could tell that he was thinking to himself about plans to misbehave which he later carried out (52). His ability to comprehend is similar to that of a two-and-a-half-year-old human child, though his ability to produce language is limited by the number of symbols on his keyboard and the time it takes him to search among them to find what he wants to say (69, 73). Even with the rich body of evidence such research has produced, some skeptics continue to deny genuine linguistic status even for Kanzi's abilities and those of other species like elephants, whales, and dolphins who have intricate communication systems that scientists are only just beginning to recognize or "hear."

We have to decide whether to define language in a narrow anthropocentric way or instead to define it more broadly to include complex communication systems of animals whose linguistic activities we are only beginning to understand. As Derrida said,

The idea according to which man is the only speaking being, in its traditional form or in its Heideggerian form, seems to me at once undisplaceable and highly problematic. Of course, if one defines language in such a way that it is reserved for what we call man, what is there to say? But if one reinscribes language in a network of possibilities that do

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not merely encompass it but mark it irreducibly from the inside, everything changes.

. . . And what I am proposing here should allow us to take into account scientific knowledge about the complexity of "animal languages," genetic coding, all forms of marking within which the so-called human language, as original as it might be, does not allow us to "cut" once and for all where we would like to cut . . .

It is easy to keep changing the definition of language to exclude modes not exactly like our own, but that practice is not very useful in view of what we are learning about other animals' remarkable communicative abilities. Nor does it help us account for how our particular primate branch developed its present array of languages between 100,000 and 50,000. Christine Kenneally explains that after one hundred years of philosophical and scientific refusal to consider the evolution of language, the subject has recently opened up with discoveries in paleoarchaeology, cognitive neuroscience, evolutionary genetics, linguistics, and the kinds of animal studies we have been discussing. Interdisciplinary cooperation among these fields now supports the view that "human language lies on a continuum that includes other human abilities and the abilities of non-human animals" and that it took some six million years to co-evolve with and then differentiate from common mammalian traits. Distinctive human speech and cognition developed gradually out of gesture and the kinds of primitive vocalizations we shared with other primates, taking on distinctive forms in a kind of co-development with the creation of flaked tools, cooperative foraging and hunting activities, and cultural behaviors like painting and

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sculpture and music.\footnote{Ibid., pp. 122-141, 188.} We developed the ability to vocalize in ways primates cannot because of changes in the position of the larynx and tongue over time, and because of cognitive differences.\footnote{Savage-Rumbaugh, "Bringing Up Kanzi," p. 12; Kenneally, The First Word, pp. 141-153. The issue is still a matter of debate, with such scientists as Dorothy L. Cheney and Robert L. Seyfarth claiming in "Constraints and Preadaptations in the Earliest Stages of Language Evolution," The Linguistic Review 22 (2005): 151-152 that apes have the physical ability but lack "a theory of mind" to recognize thoughts in others.} Of course Kanzi's or Alex the parrot's abilities to use English are not exactly the same as human language, but it seems obvious that both animals have communicated using our linguistic tools in rudimentary ways documented by extensive scientific observation. Savage-Rumbaugh and her team as well as other primatologists are now working to learn ape languages by carefully studying facial expressions, eye movements, gestures, and vocalizations. Other animal scientists are seeking ways of understanding the communication systems of species such as dogs, elephants and dolphins.

The relatively new field of biosemiotics helps to theorize a wider understanding of language by making connections among biological sciences, linguistics, and cultural studies to focus on communication and signification in living systems. This discipline grew out of Uexküll's \textit{Umwelt} theory, the work Charles Sanders Pierce on linguistics, and Thomas Sebeok's creation of the subfield of zoosemiotics. In her recent book, \textit{The Whole Creature}, Wendy Wheeler draws from biosemiotics as well as from complexity theory and Raymond Williams's appeal to evolutionary science in \textit{The Long Revolution}, to assert the semiotic nature of all life.\footnote{The Whole Creature: Complexity, Biosemiotics, and the Evolution of Culture (London: Lawrence and Wisart, 2006), pp. 14-21, 120.} She sees a paradigm shift underway in science, philosophy, and cultural studies, towards the view that "Articulate language is an evolutionary accomplishment in which the semiosis that is
apparent in all nature achieves a new, and more complex, level of articulation.\textsuperscript{43} As we have seen, Merleau-Ponty began to anticipate such ideas in the Nature lectures, examining particular scientific research from the 1920s-1940s to show how meaning and a kind of proto-culture exist throughout the natural world. His ideas are congruent in many ways with what animal language studies are demonstrating about communication between many other creatures, and with biosemiotics.

The core of Merleau-Ponty's linguistic philosophy appears as part of his work on embodiment in \textit{The Phenomenology of Perception}. There he defined human speech as essentially gestural, part of our physical life rather than belonging to some disembodied activity of mind. Thought is therefore not the representation of some pre-existing idea but is constituted simultaneously with expression. In speaking and thinking we behave according to social laws we do not consciously know, "when our cultural store is put at the service of this unknown law, as our body suddenly lends itself to some new gesture in the formation of a habit." He insists that "The spoken word is a gesture, and its meaning, a world."\textsuperscript{44} This is because "It is through my body that I understand other people, just as it is through my body that I perceive 'things.' The meaning of a gesture thus 'understood' is not behind it, it is intermingled with the structure of the world outlined by the gesture, . . ."\textsuperscript{45} Speaking subjects share a common gestural world that has been established by previous acts of expression within the evolving biosphere. They are part of a dynamic cultural texture that has been passed on from one generation to another for thousands of years.\textsuperscript{46}

\textsuperscript{43} Ibid., p. 21.  
\textsuperscript{44} \textit{Phenomenology of Perception}, pp. 183-184.  
\textsuperscript{45} Ibid., p. 186.  
\textsuperscript{46} Kenneally discusses Terence Deacon's view that gesture was the evolutionary scaffolding on which language began to develop among our ancient primate ancestors, \textit{The First Word}, p. 246.
The individual human infant develops language by being bathed in such gestural and auditory behavior from the moment of birth. In *Consciousness and the Acquisition of Language*, Merleau-Ponty explains that the polymorphous and spontaneous babbling of all infants during the first months of life is the ancestor of language in the developing individual. It emerges simultaneously with gestures and facial expressions such as smiles in response to the facial expressions and other body language of adults who are gazing at the child, touching it, and interacting with it verbally in dynamic interrelations that gradually develop into mimicry.47 Speech addressed to the child excites him, and this acoustic sensation in turn stimulates the infant's limbs and phonotory organs.48 In Merleau-Ponty's view we make use of our bodies as "a way of systematically going toward objects;"49 in the infant this means working with the whole body to participate in the linguistic activity around him.50 The child is enticed by the style of the surrounding language "until a single meaning emerges from the whole," because meaning "is immanent to living speech as it is immanent to the gestures by which we point out objects." Sue Savage-Rumbaugh describes a very similar situation as having given rise to Kanzi's ability to communicate with lexigrams representing English words and phrases.51

In *The Visible and the Invisible* Merleau-Ponty further developed the embodied, gestural definition of speech from the earlier works. The speaking word continues to be seen operating as part of the texture of social life with all its cultural accumulations, in a chiasmic overlapping

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49 Ibid., p. 35.
50 Kenneally comments in *The First Word* on developmental psychologists' present theory of the cross-modality of language that causes it to emerge "in the child as an expression of its entire body, articulating both limbs and mouth at the same time," p. 134.
with the visible world. Thus the use of one's native language is "the folding over within him of the visible and the lived experience upon language, and of language upon the visible and the lived experience . . . ."\textsuperscript{52} Language is the body's way of moving its participation in the visible natural world into the realms we cannot see. Merleau-Ponty realizes the difficulty of understanding this "bond between the flesh and the idea" but cites Proust as having gone farthest in "describing an idea that is not the contrary of the sensible, that is its lining and its depth."\textsuperscript{53} 

*The Search for Lost Time* achieves what the best music, art, philosophy, and science achieve. These human ways of singing the world disclose to us some of what we understand or seek to know through our bodies' experience, shaping the cultural texture of generations of human experience.\textsuperscript{54} Merleau-Ponty never directly explored the relation of human speech and writing to other species' ways of "singing the world", but the synergy he described among living creatures hints at a kinship among all these kinds of animal communication. Other animals surely also have ways of perceiving and communicating realities that are not obviously tangible or visible.\textsuperscript{55} Animals' alarm calls heralding the coming of earthquakes might be an example of such singing the world. Communication among migrating birds and butterflies participate in similar "natural magic" that Merleau-Ponty defines as intrinsic to speech. Literature is the recorded creation of such culturally evolved meanings for humans, and it one of our distinct ways of singing the world to each other. Some writers, such as Virginia Woolf and Yann Martel, have attempted to

\textsuperscript{52} The Visible and the Invisible, p. 126.
\textsuperscript{53} Ibid., p. 149.
\textsuperscript{54} George Lakoff and Mark Johnson have explained in *Philosophy in the Flesh: The Embodied Mind and its Challenge to Western Thought* (New York: Basic Books, 1999) how bodily experience can be seen to shape all thought. See also how Johnson moves from such assumptions to an exploration of the arts in *The Meaning of the Body: Aesthetics of Human Understanding* (Chicago: University of Chicago Press, 2007).
\textsuperscript{55} Ted Toadvine's careful examination of Merleau-Ponty's views on animal access to language in *Merleau-Ponty's Philosophy of Nature*, pp. 89-96, does not posit as full a linguistic or communicative synergy among animals as I am suggesting. Indeed, he does not believe that Merleau-Ponty extended the kind of self-reflexive thought to other animals that he described for humans as the basis of our language.
describe our complex intercommunications with other animals.\textsuperscript{56} We can hope that scientific work with many other species will continue to help us better understand their kinds of language, so that we can include their voices more fully in our writing and understanding. Then perhaps we shall see what Merleau-Ponty meant when he said that "the whole landscape is overrun with words as with an invasion, it is henceforth but a variant of speech before our eyes, . . . And in a sense, as Valéry said, language is everything, since it is the voice of no one, since it is the very voice of the things, the waves, and the forests."\textsuperscript{57}


\textsuperscript{57} \textit{The Visible and the Invisible}, p. 155.