# Eating One's Mother: Female Embodiment in a Toxic World

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Breast milk and the placenta are phenomena of female human embodiment that challenge the philosophical notion of separate, sovereign subjects independent of other human beings and an objective world "out there." A feminist phenomenological analysis, indebted to Merleau-Ponty and Irigaray, reveals placenta and milk to be intercorporeal, "chiasmic" forms of shared organic existence. This analysis is a philosophical and psychological exploration of "matrotopy," i.e., the fact that humans eat their mothers through breast milk and placenta. This exploration, however, requires an understanding of the larger environmental field which sustains the female body and its offspring. Environmental degradation, particularly through estrogen mimicking substances in plastics and pesticides, targets the endocrine system of developing fetuses and endangers the future of the human species *from the inside*. Invisible organo-chemical technologies pose a new and immediate danger and ethical challenge to women and men in the twenty-first century. A "placental ethics" respects the insertion of the human being into the dynamic field of nature; it calls for an awareness that, unless we develop a changed attitude toward technology, the gradual *extinction of our species* continues to happen in female bodies today.

*Do a psychoanalysis of nature: it is the flesh, the mother.*

—Maurice Merleau-Ponty[1]

*How many of these places in space have been inside me. . . .*

—Rainer Maria Rilke[2]

## THE TOP OF THE FOOD-CHAIN

The ecologist and writer Sandra Steingraber has a telling anecdote. When she was a graduate student teaching premedical biology, a yellowing poster hung on the wall next to the laboratory where she taught. It depicted the flow of DDT through a marine estuary, from the bottom feeders to the fish, to sea mammals and birds, until

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[1] Maurice Merleau-Ponty, *The Visible and the Invisible,* trans. Alphonso Lingis (Evanston: Northwestern University Press, 2003), p. 267 (emphasis added).

[2] Rainer Maria Rilke, *Sonnette an Orpheus,* pt. 2, v. 1, in *Werke,* 3 vols. (Frankfurt am Main: Insel Verlag, 1996) (original translation; emphasis added).

all the arrows pointed at a muscular male silhouette at the top of the feeding chain. She was startled when during an ecology seminar, a visiting professor remarked in passing: "Man is not at the top of the food chain. His breast-fed infants are."[3] Long-lived pesticides, such as PCBs and DDT do not get diluted in the environment but become more concentrated in the food chain, "smelt to mackerel, mackerel to tuna, tuna to man,"[4] a process that is called *biomagnification*. The poster image of man at the top of the food-chain is obviously and unconsciously sexist. The visiting professor mentions man and his infants, but does not say a word as to where the food for the infant is coming from. Woman is there by implication, since it is her body that produces the milk which feeds the infant—and passes on highly concentrated toxins. The image of the contaminated food chain invites us to think about the pregnant and lactating body as it is lived not just as a *being-in-the-world*, but as a *being-in-a-toxic-world*. When I actually imagine a *woman* at the top of the food-chain it is not so easy to see the human being as the self-owned and self-contained apex of creation. Rather, the female body is open, a conduit for the next generation, as passage for others that stretches through time. There is no hierarchical top of the food chain: woman herself becomes food for her young. She is a link and an integrated element in the chain of those who eat and are eaten.

The growing fetus and the breast-fed infant live from the mother by consuming her substance. Evolutionary biologists call this "matrotopy": eating one's mother. Her substance is continually replenished through fruits and vegetables, fish and fowl, air and water. She then passes herself and the sustaining life forces received from food on to the next generation through the placenta and breast milk. The next generation is merged with her body for almost a year before it takes its own breath, and even longer before it eats foods not made by the mother's body.

However, the fruits and vegetables she eats grow in fertilized and pesticized fields, the air she breathes carries carbon monoxide, ozone, lead, nitrogen dioxide, particulate matter, and sulfur dioxide, and the water she drinks needs to be cleansed of too many chemical substances to list before it can be consumed as drinking water. We know nowadays that asthma, autism, allergies, attention deficit/hyperactivity disorder, leukemia, pediatric brain cancer, birth defects, obesity, and diabetes are childhood illnesses that are linked to environmental toxins. In a review of the research literature on the impact of toxic environmental chemicals on human development Jill Stein and her colleagues summarize their findings:

> This body of research demonstrates cause for serious concern that commonly encountered household and environmental chemicals contribute to developmental disabilities. The developing brain is uniquely susceptible to permanent impairment by exposure to environmental substances during time windows of vulnerability. Lead, mercury, and polychlorinated biphenyls (PCBs) have been extensively studied and found to impair development at levels of exposure currently experienced by significant portions of the

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[3] Sandra Steingraber, *Having Faith: An Ecologist's Journey to Motherhood* (Cambridge, Mass.: Perseus Books, 2001), p. 250.

[4] Ibid.

general population. High-dose exposures to each of these chemicals cause catastrophic developmental effects.[5]

The list of poisons that sediment and remain in the human body over a lifetime is almost unbelievable. *National Geographic* reporter David Ewing Duncan as an assignment had his blood tested for chemical compounds in 2006.[6] Some of the pollutants found in his body came from his mother's milk; others such as the now banned pesticides DDT and chlordane came from the local Kansas City dump or the fumigated fields where he played as a little boy. He picked up PCBs while a student in college in the contaminated Hudson River Valley, flame-retardant PDBEs from carpets and furniture at home and from frequent airplane trips, phthalates from shampoo and the dashboard of his car, mercury from fish, lead from paint, and bisphenol A, an artificial estrogen and endocrine disruptor, from the plastic water bottles he used during workouts. Many of these chemicals have been banned, and for others there are serious warning signs about their dangerous effect on the endocrine systems of other mammals. The *known* xenobiotics (chemicals foreign to our body) for which Duncan was tested, are only the tip of the iceberg. Two recent studies are just a brief example of the hidden dangers. Winchester and his colleagues discovered that in the U.S. rural population the rate of birth defects such as spina bifida, circulatory, tracheal, gastrointestinal, urogenital, musculoskeletal anomalies, cleft lip, adactyly, clubfoot, and Down's syndrome are significantly higher in women with last menstrual periods between April and July, a time when the concentration of agrichemicals in the environment are the greatest.[7] Anway and Skinner found that the fungicide vinclozolin, when administered to female mice, not only leads to organic defects and infertility in male offspring, but it mutates the DNA sequences of the following generations: endocrine disruptors can have a transgenerational effect on the organ formation of a species.[8] The image of the woman and her infant at the top of the food chain puts an intimate and personal question to women: can we still believe in an ethics that stops at the boundary of our skins?

In some earlier work on breast feeding, I have tried to show that the organismic bond between mother and infant, as can be seen in the phenomenon of milk, can best be understood as a non-dualistic, chiasmic relationship which shows the primary "fit" between maternal and infant embodiment.[9] The research on the benefits of breast feeding supports the argument of the "fit" and the well-being that milk provides: breast-fed babies have fewer ear and gastro-intestinal infections, and later

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[5] Jill Stein, Ted Schettler, David Wallinga, and Maria Valenti, "In Harm's Way: Toxic Threats to Child Development," *Journal of Developmental and Behavioral Pediatrics* 23 (2002): S13.

[6] David Ewing Duncan, "The Pollution Within," *National Geographic* 210, no. 4 (October 2006): 116–43.

[7] Paul Winchester, Jordan Huskins, and Jun Ying, "Agrichemicals in Surface Water and Birth Defects in the United States," *Acta Paediatrica* 98 (2009): 664–69.

[8] Matthew D. Anway and Michael K. Skinner, "Epigenetic Transgenerational Actions of Endocrine Disruptors," *Endocrinology* 147, no. 6, supplement (2006): S43–S49.

[9] Eva-Maria Simms, "Milk and Flesh: A Phenomenological Reflection on Infancy and Coexistence," *Journal of Phenomenological Psychology* 32, no. 1 (2001): 22–40.

on suffer less from asthma, juvenile diabetes, allergies, Crohn's disease, ulcerative colitis, and juvenile rheumatoid arthritis—all illnesses that are due to a misguided immune reaction. Breast milk safeguards against obesity and cancer, and it helps set up the baby's own immune system. Steingraber reports that she even cured a chronic, antibiotic resistant eye infection in her infant daughter by following the old advice (passed down by women) of squirting a few drops of breast milk into a baby's eyes: breast milk contains antibodies that kill bacteria and viruses on contact.[10]

Breast and baby are an intercorporeal form, and breastfeeding reveals the ambiguity and chiasmic entwining of maternal and infant bodies. Maurice Merleau-Ponty's notion of the flesh[11] is a fruitful way of conceptualizing the intercorporeality between lactating woman and nursing infant, where milk is more than a mere metaphor for nourishment and well-being: it is a chiasmic event inscribed in two bodies. Milk redefines the boundaries of the lactating body, and thinking it through leads to a trans-subjective, non-dualistic psychology. I thought at that time that milk is an *a priori*, that it begins in the maternal body and cannot be reduced any further. In 2004, however, the media was awash with news that the breast milk of American women had become toxic. In an article in the *New York Times Magazine,* Florence Williams wrote:

> Your breast milk tells the decades-old story of your diet, your neighborhood and, increasingly, your household decor. Your old shag-carpet padding? It's there. That cool blue paint in your pantry? There. The chemical cloud your landlord used to kill cockroaches? There. Ditto, the mercury in last week's sushi, the benzene from your gas station, the preservative parabens from your face cream, the chromium from your neighborhood smokestack. One property of breast milk is that its high-fat and -protein content attracts heavy metals and other contaminants. Most of these chemicals are found in microscopic amounts, but if human milk were sold at the local Piggly Wiggly, some stock would exceed federal food-safety levels for DDT residues and PCB's. Some of the chemicals I'm mainlining to my one-year-old daughter will stay in her body long enough for her to pass them on to her own offspring. PCB's, for example, can remain in human tissue for decades. On a body-weight basis, the dietary doses my baby gets are much higher than the doses I get. This is not only because she is smaller, but also because her food—my milk—contains more concentrated contaminants than my food. It's the law of the food chain, and it's called biomagnification.[12]

The news that my own breast milk, in all likelihood, had been contaminated with environmental pollutants challenges on some fundamental level the relationship I have to my own body and to the well-being of my children. "When it comes to persistent organic pollutants (POPs), breast milk is the most contaminated of human

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[10] Steingraber, *Having Faith,* p. 233.

[11] Maurice Merleau-Ponty, *The Visible and the Invisible*, trans. Alphonso Lingis (Evanston: Northwestern University Press, 1968).

[12] Florence Williams, "Toxic Breast Milk?" *New York Times Magazine*, 9 January 2005.

foods," says Steingraber.[13] She reports that the concentration of organochlorine pollutants in human milk is ten to twenty times higher than those in cow's milk, and she quotes a leading researcher who concluded: "Breast milk, if regulated like infant formula, would commonly violate Food and Drug Administration action levels for poisonous or deleterious substances in food and could not be sold."[14] The certainty that air, food, and water sustain human life as we know it is no longer a given.

Like breast milk, the placenta is the other organ of the body where environmental degradation impacts the human species most directly and insidiously. On a deeper organic level the poisoned placenta reveals the insertion of the body into the web of natural forces and into the temporal flow of human generations. The poisoning of the female body through the food chain poses a series of philosophical challenges. How do we understand the relationship between the female body and nature? What do gestation and birth contribute to our understanding of being (from a female perspective)? Are there concepts that allow us to raise the question concerning technology from a fresh angle? Does Merleau-Ponty's concept of the flesh, which is so clearly displayed in the phenomenon of breast milk, receive another dimension if we look at it from within the womb, through the placenta?

## METAPHORS OF THE FLESH

George Lakoff and Mark Johnson have argued that the basic concepts that govern our thoughts and organize our experiences are "fundamentally metaphorical in nature."[15] Metaphors are not just poetic adornments, but they allow us to work within familiar conceptual systems and create new ways of thinking. Feminist phenomenology has the task to explore female embodiment and spatiality in order to create, in language, metaphors that can encompass female experience and out of them new philosophical concepts that complement and complete the (androcentric) history of philosophy.

In *The Visible and the Invisible,* Merleau-Ponty describes the relation between colors and the visible as "the tissue that lines them, sustains them, nourishes them, and which for its part is not a thing, but a possibility, a latency, and a *flesh* of things."[16] In this passage, the term *flesh* is used for the first time in the text to indicate the ontological dimension of connectedness between body and world, perceiver and perceived, visible and invisible. It is significant that this first appearance of the *flesh* follows an evocation of the placenta, "the tissue that lines . . . , sustains . . . , nourishes," which belongs neither to the mother's body nor to the embryo, but is

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[13] Steingraber, *Having Faith*, p. 251.

[14] Ibid.

[15] George Lakoff and Mark Johnson, *Metaphors We Live By* (Chicago: University of Chicago Press, 1980), p. 3.

[16] Merleau-Ponty, *The Visible and the Invisible*, pp. 132–33.

made by both: "Inside a placenta are only capillary filled fetal branches soaked by spumes of mother's blood."[17] Besides the placental metaphor, Merleau-Ponty's discussion of the flesh ontology is full of images that evoke the female reproductive body. The visible is described as "a sort of folding back, invagination, or padding."[18] The term *pregnancy* is used to describe the "logos that pronounces itself silently in each sensible thing,"[19] and it designates a "productivity (*praegnans futuri*), fecundity"[20] within each act of perception. *Pregnancy* is the "more" that announces itself and comes into play in each act of perception without rendering itself perceptible.

Luce Irigaray points out that many of the images in *The Visible and the Invisible* describe the visible in terms of "intrauterine nesting" and other maternal metaphors.[21] Merleau-Ponty's flesh ontology is permeated with images of gestation. But he never lingers to explore these maternal metaphors. The flesh is discussed in the context of the interplay of colors, the process of visual perception, and the experience of two hands touching, but never through the image of the original chiasmic life of the human body coming into being inside the body of another—through the placenta.

Irigaray faults Merleau-Ponty for conceptualizing the flesh mainly through visual perception; he begins with an analysis of the sense of touch, but soon subsumes it, by analogy, under the tangibility of the visual. Irigaray objects: "The visible and the tactile do not obey the same laws or rhythms of the flesh."[22] Her own reading replaces the images of one hand palpating the other with the image of two hands joined (as in prayer), "palms together," which "evokes, doubles, the *touching of the lips* silently applied to each other,"[23] a key image in her understanding of female embodiment. There can be touching without recourse to seeing, intercorporeality without vision. "Her claim, in brief, is that the visible requires the tangible, but the tangible is perfectly capable of an existence autonomous from the visible."[24]

Thinking the flesh in terms of vision, as Merleau-Ponty does, leads to the positing of the seeing subject, which, according to Irigaray, "remains in an incestuous prenatal situation with the whole"[25] and caught up in the fantasy of maternal primacy and wholeness. Irigaray accuses Merleau-Ponty of being so caught up in the Western male fantasy dynamic of merging with the mother that he is blind to other forms of being a subject:

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[17] Steingraber, *Having Faith,* p. 34.

[18] Merleau-Ponty, *The Visible and the Invisible*, p. 152.

[19] Ibid., p. 208

[20] Ibid.

[21] Luce Irigaray, *An Ethics of Sexual Difference*, trans. Carolyn Burke and Gillian C. Gill (New York: Cornell University Press, 1993), p. 152.

[22] Ibid., p. 162.

[23] Ibid., p. 161.

[24] Elisabeth Grosz, "Merleau-Ponty and Irigaray in the Flesh," in *Merleau-Ponty, Interiority and Exteriority, Psychic Life and the World*, ed. Dorothea Olkowski and James Morley (Albany: State University of New York Press, 1999), p. 158.

[25] Irigaray, *An Ethics of Sexual Difference*, p. 173.

> In a certain way, this subject never enters the world. He never emerges from an osmosis that allows him to say to the other "Who art thou" But also "Who am I?" What sort of event do we represent to each other when together? Irreversible events except where death is concerned. The phenomenology of the flesh that Merleau-Ponty attempts is without question(s). It has no spacing or interval for the freedom of questioning between two. No other or Other to keep the world open. No genesis. No grace. Having become a god, man works and plays with the world until it is worn out? Very carefully. But not without a certain ennui? By himself.[26]

Irigaray's two-hands touching, on the other hand, propose an image of non-invasive togetherness, a separate yet connected ensemble of two subjects in whose gestures the realm of signification and language opens. In the interstice between two distinct but joined palms, I assume, the freedom of questioning is born, and in the other's language the world becomes open and plentiful.

Merleau-Ponty and Irigaray outline different utopias. While Irigaray's utopia, based on the metaphor of the touching hands, is one of language and critical thought, Merleau-Ponty's tries to excavate the pre-verbal and pre-conceptual immersion of the human being in the structures of the world. While Irigaray wants to reify the separate, independent, speaking subject through the conceptual metaphors of lips and mucous membranes, Merleau-Ponty evokes the totality of being through flesh and chiasm. The important question Irigaray raises, however, is whether the metaphor of vision, which has primacy in Merleau-Ponty's late work, falsifies the phenomenon of the chiasm.

Irigaray, on the other hand, although recognizing the female metaphors in Merleau-Ponty, thinks that the female body ends at the edge of the skin. In her discussion of the placenta in *Je, Tu, Nous*, for example, Irigaray stresses the division between infant and mother at the level of the placenta, and her interview partner (a biology teacher, Hélène Rouch) is at pains to explain that the placental economy is "one not in a state of fusion, which respects the one and the other" and hence a model for the "almost ethical character of the fetal relation."[27] Irigaray's vision allows for the flesh between self and other through touch, but it ultimately remains anthropocentric and logocentric: there is no room for the nonhuman world and an *ecological* ethics. Merleau-Ponty's discussion of the flesh grants a chiasmic relationship with other humans, but also with spaces, things, and nonhuman beings. It makes it possible to think about our insertion into the field of nature from out of our own organism, and with this human consciousness has the possibility to understand itself as a participant, rather than as a distanced, idealized spectator of the natural world.

The challenge is to take Irigaray's critique seriously, but also to maintain Merleau-Ponty's central insight about the flesh. *The flesh* is a term in Merleau-Ponty's work that radically alters the perspective of the subject and opens a new philosophical way of thinking about the continuity and kinship between nature, body, and human consciousness. The flesh is

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[26] Ibid., p. 183.

[27] Luce Irigaray, *Je, Tu, Nous* (New York, London: Routledge, 1993), p. 41.

> this generality of the Sensible in itself, this anonymity innate to Myself . . . , and one knows there is no name in traditional philosophy to designate it. The flesh is not matter, in the sense of corpuscles of being which would add up or continue one another to form beings. Nor is the visible (the things as well as my own body) some "psychic material" that would be—God knows how—brought into being by the things factually existing and acting on my factual body. . . . the flesh is not matter, is not mind, is not substance. To designate it, we should need the old term "element," in the sense it was used to speak of water, air, earth, and fire, that is in the sense of a *general* thing, midway between the spatio-temporal individual and the idea, a sort of incarnate principle that brings a style of being wherever there is a fragment of being.[28]

In the following, I attempt to think the flesh neither through vision nor through touch, but through the first metaphor that accompanies it: the placenta. I present a phenomenological hermeneutics of the placenta and its psychological significance, and develop a fuller metaphorical and conceptual account of Merleau-Ponty's placental nature of the flesh. This account also provides the opportunity to develop Irigaray's barely begun discussion of a placental ethics.

## THE TWO THAT ARE ONE

Ten days after conception the human germinal cells burrow into the uterine wall and the placenta is formed. Steingraber compares its appearance to a maple grove:

> The long columns of cells sent out by the embryo into the uterine lining during the first weeks of pregnancy quickly branch and branch again until, by the third month of pregnancy, the treetops of an entire forest press up against the deepest layers of the womb. Meanwhile the open taps of the uterus' spiral arteries send jets of blood spurting between these arboreal structures. [29]

As an organ specifically created during pregnancy, the placenta pumps oxygen, nutrients, and hormones from the mother's blood into the fetal blood stream. The placenta is *the only mammalian organ made up out of the cells of two separate organisms*. Awash in placental blood, the first organic chiasm between two beings takes place, and in this entwining a human embryo can come into embodiment and existence.

The womb is a complex space with beautifully timed and ever-flowing exchange processes between fetus and maternal body. When the womb is represented in textbooks or media, we usually are shown the amniotic sack, the umbilical cord, and part of the placenta. This representation provides the illusion that it is a separate space, independent of the larger maternal environment. The idea of the "placental barrier" reinforces this perception: physicians used to think that the placenta was

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[28] Merleau-Ponty, *The Visible and the Invisible*, p. 139.
[29] Steingraber, *Having Faith,* p. 31.

impermeable and protected the fetus from harmful substances. Even though the placental membranes keep out bacteria, they do not protect the fetus from toxic chemicals. The myth of the placental barrier was shattered in the 1960s with the thalidomide catastrophe, when thousands of mothers who had received a drug that reduced morning sickness in early pregnancy gave birth to infants without arms or legs. DES, an artificial estrogen developed in the 1930s and widely prescribed for thirty years to pregnant women to prevent miscarriage and make better babies, was finally linked in the 1970s to unusual cancers and deformities of the reproductive systems of teenagers and young adults. "If thalidomide exploded the myth of the inviolable womb forever, the DES experience toppled the notion that birth defects have to be immediate and visible to be important."[30] *The placenta is not a barrier, but a place of exchange.*

Through technological manipulation human beings have created substances that deceive the placenta into letting them pass. Pesticides and methyl mercury become even more concentrated during the placental exchange, and can be found in higher concentrations in umbilical cord blood than in the mother's bloodstream.[31] The infant's uterine ecosystem is embedded within the larger field of the mother's bodily environment. Contaminants in the mother's air, food, and water pass the placental barrier: mercury, lead, PCBs, pesticides, and other toxic chemicals lead to birth defects, premature birth, or long-term impairments of physical and psychological functioning of the child. The fearful list of environmental pollutants and their impact on fetal development is extensive. The fetus' health and the well-being of future generations are intimately entwined with the health of our planet. The infant is the missing ecological link between human beings and the natural world: the damage to our environment is not just "out there," but it goes as deep as our placentas.

## AFTERBIRTH

The placenta is the membrane of connection and separation between mother and embryo. It allows mammalian mothers to carry their young inside their bodies and feed them continuously without fear of egg-loving predators and without the need to find specialized food for underdeveloped digestive systems. The maternal body protects and feeds. German has an evocative word for the placenta: *Mutterkuchen*, "mother cake," which evokes the flat, cake-like shape of its base, but also the special nature of this generous food gift. Filled with my blood and nested inside my womb, the placenta is invisible to me, just as my bowels and my heart are invisible. But unlike the other organs, the placenta has a presence that is more obviously temporal: it comes into being when pregnancy begins, and dies as the "afterbirth" when the infant takes its first breath. After the infant, I give birth to the placenta. When the

[30] Theo Colborn, Dianne Dumanoski, and John Myers, *Our Stolen Future* (New York: Dutton, 1996), p. 51.

[31] Steingraber, *Having Faith,* p. 34.

umbilical cord is cut, the placenta leaves my body. Like menstrual blood and tissue, the placenta is a trace of events inside my body, an interior organ that is now visible outside. It announces that time has passed, a process is completed, a part of me has died in order to give life. With each new conception a new placenta is born, during each pregnancy it matures and ages, and with each birth it dies. Every child has its own home organ within the mother's body, its own feeding ground, and its own umbilical anchor.

Some carnivores eat their own placentas, but in most human pre-industrialized societies delivery and disposal of the placenta is of grave concern. Sixteenth-century herbals, for example, prescribe a wide variety of herbal medicines to facilitate the birth of the placenta. In most cultures the placenta is either highly charged with magical power and so must be disposed of in a very strict ritualistic way, or it is seen as a sign of defilement and is discarded without ritual, as in Western hospitals today. Jones and Kay report that the people of Ganda in Africa call the placenta "the second child" and believe that afterbirth it immediately becomes a ghost, who lives in the plantain tree under which it is buried. Pawnee midwives placed placentas wrapped in buffalo hide into trees so that they remained untouched and would gradually turn into dust.[32] They also addressed the placenta directly in a ritualized speech, pleading with it to protect the mother's next birth. In many Southeast Asian cultures the placenta is seen as the semi-human sibling of the fetus: in Malaysia the placenta was given a ritualistic burial, which included traditional burial gifts such as salt, tamarind, and a small piece of white cloth. These ritualistic acts honor the intimate connection of the living infant to the dead placenta and its counterpart in the spiritual world. The placenta—as the first ground and place of human existence—has power: it is intimately entwined with the life of the new infant, and it is sacrificed so that the child can live. In many cultures the gender of the infant determines location and manner of disposal of the placenta.[33]

What makes the afterbirth uncanny and a sign of defilement? The afterbirth brings to light an organ that was hidden within the female body for nine months. It is a raw, bloody, tissue cake. In its birth the female body reverses itself, turns itself inside out. Like the infant, the placenta is born into a social world, caught and handled by human hands other than the mother. Her invisible body becomes public, her blood stains other skins. The born placenta implies the extraordinary ability of the female body to grow and discard a body part in a cyclical way and its power to bring life and death out of itself.

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[32] Elaine Jones and Margarita A. Kay, "The Cultural Anthropology of the Placenta" in *The Manner Born: Birth Rites in Cross Cultural Perspectives*, ed. Lauren Dundes (Walnut Creek, Calif.: Rowman Altamira Press, 2003).

[33] Janet U. Schneiderman, "Rituals of Placenta Disposal," *American Journal of Maternal Child Nursing* 23, no. 3 (May-June 1998): 142–43.

## THE GATE

The image of man at the top of the food chain creates the illusion of a closed system that ends at the apex with the super predator who consumes the distillate of all below. Since Rachel Carson's *Silent Spring* we know that DDT and PCBs pass through the food chain and end up in unlikely places: children living in the pristine snow of the arctic take in seven times more PCBs through their breast milk than an infant in California or New York. Inuit children have compromised immune systems and often do not produce the necessary antibodies when they are vaccinated for smallpox, polio and other diseases.[34] Like the mothers of children exposed to thalidomide or DES *in utero*, Inuit mothers go about the business of caring for their pregnant selves in the traditional ways, and do not know that they have been contaminated and invaded. Their placentas do not recognize persistent chemicals: many synthetic chemical compounds in plastics or pesticides mimic the female hormone estrogen (such as DES and PCB) and interact with estrogen receptors, while others target other aspects of the endocrine system. DDT which has accumulated in a mother's fat can disrupt her hormone levels, which in turn affects fetal development: "Vanishingly small amounts of free estrogen are capable of altering the course of development in the womb."[35] Many scientists think that the drastic reduction in male sperm count and the rise in infertility in the Western world is due to these hormone disrupting synthetic chemicals which were developed after World War II.[36]

Over the millennia, the human placenta has adapted to threats in the natural environment, but the new chemical compounds are unrecognizable as invaders and destroyers. Xenobiotics invisibly attach themselves to our food through pesticides, fungicides, and plastic containers. We do not see, hear, touch, taste, or smell them. In the placenta they interact with the delicate processes of embryonic development. In milk they enter the metabolism of the infant.

The placenta is the place where the forces of nature unfold their developmental thrust toward a future and build a new organism. The female womb is the gateway to the future, the door through which all human generations have come. I was attached to a placenta I shared with my mother, she came from her mother, and my daughter might one day give birth to the next woman in our line. My life *is testimony to an uninterrupted evolutionary line stretching to the beginning of our species and beyond.* Women are the gate through which the human race passes. This linear progression through time, however, is not the only story. The sojourn in the womb is not merely a matter of the relationships of a series of female bodies with their fetuses. *The fetal ecosystem is nested in the ecosystem of the mother's body, which is nested in*

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[34] Colborn, Dumanoski, and Myers, *Our Stolen Future,* p. 107.

[35] Ibid. p. 141.

[36] E. Carlsen, A. Giwercman, N. Keiding, and N. E. Skakkebaek, "Evidence for Decreasing Quality of Semen during Past Fifty Years," *BMJ* 305, no. 6854 (1992): 609–13.

*the larger ecosystem of the Earth*. The generational progression of birthing women through time is accompanied by an evolving system of natural processes that provide air, food, and water, and which also has its temporal flow. When we alter nature through the introduction of artificial compounds, we also alter the female body and the bodies of generations to come.

A placental ethics understands the human being as a pass through. The substances that we take into our bodies do not stay there. The antibiotic I take for my sinus infection does not end existing as soon as it enters my stomach, even though we prescribe it as if it does. Through digestion, elimination, and our own death we return elements back into the natural environment which are then taken up by other living beings. What is true for mackerel and smelt is also true for us: we are part of the food chain. The ethical call that issues from this insight is the demand to move beyond individualism toward an ecological responsibility for the whole field of being and begin to understand ourselves and act as an integrated part.

## TECHNOLOGY

The toxicity of placenta and breast milk raises fundamental questions about the function of technology and how it is inserted into the natural world and human existence. Let us take an example of a toxic substance that not only crosses the placental barrier, but is released into children's bodies on a daily basis. The chemical compound bisphenol A, also called BPA, can be found in many household plastics: baby bottles, water bottles, the lining of metal food cans, and even dental fillings. It functions as an artificial estrogen and endocrine disruptor; there are indicators that it disrupts human development on the fetal level, as well as in infancy and childhood because it interferes with the action of estrogen, which is an important regulator of development and reproduction.[37] Recent studies have shown that BPA increases the risk of developing metabolic disorders in adults.[38] Plastic technology has created food containers that make the carrying of liquids easy to deal with: plastic bottles can be heated, they are lightweight, easy to mass produce, and are virtually indestructible. Zuckerman et al., however, quip: "Wouldn't it be ironic if the most popular water bottles for athletes contribute to obesity and diabetes?"[39]

Traditional theories of technology in the continental tradition[40] suggest that technology exploits and transforms the powers of nature into a pre-determined, useful

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[37] Diana Zuckerman, Paul Brown, and Laura Walls, "Are Bisphenol A (BPA) Plastic Products Safe for Infants and Children?" *Issue Brief,* National Research Center for Women and Families, 2 June 2009, http://www.center4research.org/BPA.html.

[38] Iain A. Lang, Tamara S. Galloway, Alan Scarlett, and William E. Henley, "Association of Urinary Bisphenol a Concentration with Medical Disorders and Laboratory Abnormalities in Adults," *JAMA* 300, no. 11 (2008): 1–10; Frederick S. vom Saal and John Peterson Myers, "Bisphenol A and Risk of Metabolic Disorders," *JAMA* 300, no. 11 (2008): 1353–55.

[39] Ibid., p. 2.

[40] Martin Heidegger, *Being and Time* (San Francisco: Harper and Row, 1962); Martin Heidegger, "The Question Concerning Technology," in *Basic Writings*, ed. David F. Krell (San Francisco: HarperCollins Publishers, 1993).

product, such as electricity or plastic. The human mind imposes its own order on the processes of nature—such as the artificial chemical structure of bisphenol A on the elements carbon, hydrogen, and oxygen—and frames and values natural processes only in terms of their contribution to the human project. Humans play God and place themselves above nature and "look upon nature as subservient to one's own bidding."[41] The essence of modern technology is "to seek to order everything so as to achieve more and more flexibility and efficiency,"[42] which Heidegger calls "enframing." Not only nature, but the female human being herself has to be enhanced through technological implements and becomes a resource to be used.

One principle that has governed the spread of technological devices in the twentieth-century is that their effects transcend the intention and knowledge of their human creator, and that the "enframing" is never complete. Modern technologies have brought with them a whole host of unintended social practices: the automobile led to the building of roads and highways and the appearance of suburban lifestyles in the U.S.; television changed the social structure of local communities by reducing the time people spend actively engaged with their neighbors. This principle of the unintended, transcendent effects of technology also holds true for xenobiotics. But while the effects of transportation and information technologies on the social structure become visible over time, the unintended effects of chemotechnologies on the organic structures of human, animal, and plant bodies remain mostly invisible and therefore deniable. The endocrine effects of BPA were not intended: it seemed merely a good substance to provide waterproof containers and coatings—and the plastic industry still denies that it is a toxic substance, as the list of articles reaffirming the safety of BPA on the website of the industry sponsored Polycarbonate/BPA Global Group shows.[43]

Heidegger diagnosed the dangers of technology not as a problem with the technological implements, but with the basic attitudes and limitations of modern human beings:

> The threat to [humans] does not come in the first instance from the potentially lethal machines and apparatus of technology. The actual threat has already afflicted the human being in [his or her] essence. The truth of enframing threatens human beings with the possibility that it could be denied to them to enter into a more original revealing and hence to experience the call of a more primal truth. Thus where enframing reigns, there is *danger* in the highest degree.[44]

The insidiousness of chemical technologies is that they operate on the substructure

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[41] Richard Rojcewicz, *The God's and Technology* (Albany: State University of New York, 2006), p. 77.

[42] Hubert L. Dreyfus, "Further Reflections on Heidegger, Technology, and the Everyday," *Bulletin of Science, Technology and Society* 23, no. 5 (2003): 341.

[43] Polycarbonate/BPA Global Group, http://www.bisphenol-a.org/index.html.

[44] Heidegger, "The Question Concerning Technology," p. 333 (I have changed the gender designation of "man" in this translation).

of visible and temporal experiences: they cannot be directly experienced and they appear in the food chain long after their makers have died. In this respect, chemical technology functions on the "occult," i.e., on the hidden spatio-temporal level, of our organic being. The "danger" in Heidegger's sense lies in the "enframing" control that we apply to the micro-organismic level without understanding the consequences of our manipulation. I am reminded of Goethe's poem, "The Sorcerer's Apprentice," in which the apprentice uses magic to animate a broom to fetch water for him, and the broom brings more and more water into the house. Not knowing the magic words to break the spell, the apprentice breaks the broom only to have now two brooms carry water into the already flooded house.

In his later years, Heidegger came to understand the challenge and promise of technology as the possibility that humans might reveal the world in a new and more truthful way:

> The essential unfolding of technology gives man entry into something which, of himself, he can neither invent nor in any way make. *For there is no such thing as a man who exists singly and solely on his own.*[45]

Keeping watch over the unconcealed *and* the concealed is the possibility and the call of the project of technology. The saving power arrives alongside the danger when human beings understand that there is a transcendent dimension beyond human control. *We do not exist singly and solely on our own.* The placental imagination challenges us to widen our scope beyond the human being and grasp our existence as entwined with the forces of nature and the invisible web of relations between human and nonhuman beings.

## PSYCHOANALYSIS OF NATURE

Understanding the womb as a nested ecosystem changes the way we conceive of the human being. We are woven into the field of nature, and our cultural products impinge on the natural processes that happen within our bodies and the bodies of our children. This intimate bodily connection is a feminist issue. The female body is the place where the chiasmic connection between human being and earth becomes apparent. In the late notes of *The Visible and the Invisible,* Merleau-Ponty challenges himself to "Do a psychoanalysis of nature: it is the flesh, the mother."[46] One key insight of Merleau-Ponty's "psychoanalysis of nature" is to posit that the openness of the body to the exterior world, particularly in the processes that surround gestation and birth, blurs the Cartesian distinction of thought and thing.[47] There is no independent, self-enclosed world out there. The structures of the body are entwined with the structures of nature through air and food. Humans have to open

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[45] Ibid., p. 337 (emphasis added).

[46] Merleau-Ponty, *The Visible and the Invisible*, p. 267.

[47] M. Merleau-Ponty, *Nature: Course Notes from the College De France*, trans. Robert Vallier (Evanston: Northwestern University Press, 2003).

their bodies in more intimate ways than through perception: we eat the world and take it into ourselves. We conceive and are changed by the growing being within us. The placental image, more than vision or touch, evokes the ground and genesis of being, the location where two bodies are "*Ineinander*"[48]—one in the other—while allowing for difference to evolve. The mother's body does not consume or digest the foreign body of the fetus, but supports and nourishes it. Merleau-Ponty's notion of the flesh, when seen through the placenta, becomes a true ontology which encompasses not only human consciousness, perception, and relation with others, but implies the chiasmic bond with nonhuman being. It challenges us to think being from a perspective that transcends the human subject. Placental transcendence, however, is not immense and beyond a wide horizon, as visual transcendence has it. It is intimate, inside us, deep, and invites us to think ourselves out of ourselves.

## THE ENIGMATIC OBJECT

A psychoanalysis of nature in Merleau-Ponty's sense calls for a psychological exploration of the intersection between human being and the realm of nature at the level of the organism. "The flesh/the mother"[49] is the ground where the entwining of the instituted with the uninstituted, the customary with the wild, and the discursive with the silent can be found: "Nature is an enigmatic object, an object that is not an object at all; it is not really set out in front of us. It is our soil—not what is in front of us, facing us, but rather, that which carries us."[50] The depth analysis of the flesh through the phenomena of lactation and placental emplacement is the first step toward such a psychoanalysis of nature. It begins with female experience, but soon moves into the trans-human realm of organic processes as the ground of natural forces that drive human development. The lacto/placental imagination shows the human being woven into the larger patterns of nature.

Female bodies live the openness of the human body and its insertion into the life of other beings viscerally. They bear and feed other human beings, and the health and well-being of infants is closely related to maternal health and well-being. But today the invisible, intangible toxicity of female blood and milk force us to think beyond the boundaries of our skins, and to consider relationships that go beyond the human. We are part of the larger ecosystem, and a placental, ecological, feminist ethics must address this more than human relationship. Through our chemo-technologies we have debased and distorted the gift of air, food, and water through which the earth has sustained us for millennia. While it is easy to depersonalize the extinction of other species as the erasure of "objects," "set out in front of us," the toxic placenta affords us no such luxury: the extinction of *our species* is happening in our bodies.

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[48] Merleau-Ponty, *The Visible and the Invisible*, p. 181.
[49] Ibid., p. 267.
[50] Merleau-Ponty, *Nature: Course Notes from the College De France*, p. 4.