Evolution and Esthesiology: Seeing the Eye through Merleau-Ponty's *Nature and Logos* Lectures

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ABSTRACT

In his late lecture course titled "Nature and Logos: The Human Body" (1959-1960), Merleau-Ponty proposed that we understand human symbolism, language, and reason by viewing the human being initially as a variant on animal embodiment and perception prior to being a rational animal. To elaborate this project, he outlined an "esthesiology" informed by the study of evolution. However, in the sketches that survive of "Nature and Logos," we find neither a detailed explanation of how Merleau-Ponty understood this approach nor its concrete execution with respect to the human body. In this paper I reconstruct Merleau-Ponty's esthesiology. An animate body possesses two "sides": it is a sensing organism open onto the world and a sensible part of the natural world. Visual animals such as humans can see, see themselves, and be seen by others. To understand their way of life, we must study not only the body's capacities for perception and action, but also how those capacities are seen by other organisms, especially conspecifics. The body's visibility shapes the social prospects of a species and its potential for developing complex sociality, language, and cognition. I apply this basic esthesiological principle to study the human eye. Both in its vision and its visibility, the human eye is a distinctive variation on animality and one that conditions and shapes human sociality and cognition. I develop this insight with respect to a central philosophical theme of Merleau-Ponty's late work, the relation of the visible and the invisible. I conclude by discussing the importance of Merleau-Ponty's esthesiology for his late thought and current discussions of the naturalization of phenomenology.

1. Introduction

Various lines of reasoning from Merleau-Ponty's thought can be marshalled in support of the conclusion that phenomenology should, in some sense, be natu-

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ralized. Though the lines of reasoning and the sense(s) of naturalization are various, one central theme is the idea that the mind, and the conscious experience studied by classical phenomenology, are essentially embodied. The body that is internally related with the mind and that informs the givens of consciousness is not a mere projection or concretization of consciousness. Rather, it is, in some crucial respect and perhaps enigmatically, a natural phenomenon, part of a natural world that exceeds and is not simply reducible to consciousness. The natural body and world have their own density, depth, and inertia, and need to be understood on their own terms without the intellectualization that a reflection remaining exclusively within pure consciousness would risk. In his later thought, Merleau-Ponty increasingly came to believe that developing an appropriate ontology of nature through a critical engagement with the natural sciences could help correct the one-sidedness to which a consciousness-centric approach too easily succumbs. As he writes in a working note from 1957, "We expect from an ontology of nature that it will instruct us regarding the modes of connection and a sense of sense that are present at the origins of all human history and the ignorance of which ultimately falsifies our conception of history and the human being."[1]

This, then, is one reason why contemporary phenomenologists interested in naturalism and the naturalization of phenomenology should study Merleau-Ponty's late *Nature* courses, delivered in three series of lectures at the *Collège de France* between 1956 and 1960.[2] In them, Merleau-Ponty explicitly embraces a deep approach to the relationship of phenomenology and naturalism. It cannot only be a question of mutual enlightenment, or of phenomenology furnishing the conceptual foundations of empirical psychology (though an interpretive framework for the human sciences is another valuable contribution of these lectures, as I will attempt to show in this paper). Rather, at stake is a reconceptualization of what we understand nature to be.[3] As Francisco Varela is reported as saying, if phenomenology should be naturalized, nature for its part must be phenomenologized.[4] This undertaking not only corrects a tendency inherent in naturalistic inquiry towards reductionism, objectivism, and scientism. It also corrects phenomenology's own tendency towards intellectualism and old-

[1] Merleau-Ponty, 2008, pp. 52f. – translation mine.
[2] Merleau-Ponty, 2003 – henceforth cited as "N" followed by page number.
[3] This has been identified as a significant aspect of "naturalizing phenomenology" by Zahavi (2017) and Gallagher (2018).
[4] Reported by Zahavi (2017, p. 164).

fashioned idealism, which Merleau-Ponty critiques throughout his work. Finally, the *Nature* courses are of interest because, despite the prevalence of the theme across various late published and unpublished texts, the topic of nature largely falls out of explicit focus in *The Visible and the Invisible* and "Eye and Mind," the two texts typically taken as the main touchstones for Merleau-Ponty's late thought and ontology. As such, the lectures are indispensable for anyone attempting to reconstruct Merleau-Ponty's late thought.

This paper's contribution to that reconstruction comes in part through an engagement with the field of evolutionary anthropology. The field has advanced considerably since Merleau-Ponty's time, and his intense interest in it and related fields (such as primatology and ethology) suggests that he would have enthusiastically engaged with empirical findings and theoretical developments in the area over the past six decades since his death. Indeed, in the introduction to the final *Nature* course, titled "Nature and Logos: The Human Body" delivered during the 1959-1960 academic year, Merleau-Ponty proposes we understand the human being as an evolutionary phenomenon emergent in nature (N 208). This proposal comes against the backdrop of the previous two *Nature* courses, which focused respectively on the general concept of nature and animality. Merleau-Ponty urges that we should seek the subtle emergence of a human logos from within an animal way of life, not as the "imposition of a for-itself on a body in-itself" (208) or as "animality (in the sense of mechanism) + reason" (208). Rather, if we want to understand the human being and its experience as natural, animal, and evolved, we should first attempt to understand humanity as "another manner of being a body—to see humanity emerge just like Being in the manner of a watermark, not as another substance, but as *interbeing*" (208). Specifically, Merleau-Ponty is interested in understanding the human body as another way of being a *perceiving* body. He proposes an *esthesiology*, a comparative-evolutionary study of the senses, to understand the emergence of the human variation on animal being.

Broadly speaking, we could say that in the context of Merleau-Ponty's late thought, "Nature and Logos" provides the outlines of a philosophical anthropology (where no commitment to any form of humanism or any particular understanding of the human is implied). Unfortunately, we only have drafts of these lectures (N 203-284) and a published summary of the course (Merleau-Ponty, 1970, pp. 125–131). What they offer is tantalizing, but largely programmatic, lacking the concrete, detailed interdisciplinary inquiries of the first and second *Nature* courses. We do, however, have Merleau-Ponty's more general

phenomenological philosophical framework from his late thought to work with. We can use these combined resources to interpret the vast array of findings from evolutionary anthropology, primatology, and related fields to realize the path of inquiry he envisioned.

I will pursue a portion of that proposed project in this paper. If successful, this will serve as a proof of concept for the kind of evolutionary esthesiology Merleau-Ponty was developing. I will begin by reconstructing the method of Merleau-Ponty's esthesiology (Section 2). I then apply this approach to develop an esthesiology of the eye, drawing on recent findings from evolutionary anthropology and primatology unavailable to Merleau-Ponty (Section 3). I conclude with some remarks on the importance of esthesiology for understanding Merleau-Ponty's late thought and for contemporary discussions of naturalized phenomenology (Section 4).

2. Evolution and esthesiology: The body as organ of the for-other

Though the Collège de France *Nature* courses meander somewhat, we can roughly summarize their overall trajectory. The first course offers a critical examination of various historical and contemporary conceptions of nature in philosophy and science as part of Merleau-Ponty's effort to develop a novel ontology of nature. The title of the second course promises a study of "animality, the human body, and the passage to culture." However, Merleau-Ponty only manages to discuss animality and does not arrive at the human body and culture. A concluding note at the end of the second course indicates that his intention nonetheless remained the same:

> We have seen the physical, φύσις, and we have just seen animality. It remains for us to study the human body as the root of symbolism, as the junction of φύσις and λόγος, because our goal is the series φύσις–λόγος–History. (N 199)

The third *Nature* course ("Nature and Logos: The Human Body") takes up this transition from the study of animality to that of humanity.[5] On the strength of the studies of animality in the second course, he proposes that we seek to under-

[5] There was a hiatus of one academic year in Merleau-Ponty's teachings on nature as he received teaching leave to work on a manuscript, which survives as *The Visible and the Visible*. The third *Nature* course and its study of the human body exhibit Merleau-Ponty's developing ontological insights from this period.

stand the emergence of the human being as an evolutionary phenomenon. Specifically, he suggests that we understand human being as "another corporeity." We must not *begin* with the classical determinations of the human being as a rational, linguistic animal, as though these "higher" determinations of human being came from above and descended into an animal body. Rather, we must understand how changes in the human way of being an animal body are conducive to and condition our distinctively social and pervasively symbolic, cultural way of being animal.

In the outline that follows, Merleau-Ponty indicates that the first two topics to be discussed in pursuit of this distinctively human way of being a body are (1) the corporal schema and (2) "perception as implied by our body. Esthesiology" (N 208). While the corporal schema will be familiar to readers of Merleau-Ponty previous works[6], the idea of an esthesiology does not occur in Merleau-Ponty's early works *The Structure of Behavior* and *Phenomenology of Perception*. The surviving sketches for "Nature and Logos" do not explicitly clarify what he means by the term. I will begin by elaborating this concept, then, which will in turn help specify the evolutionary dimension of the approach to humanity and the human body. Along the way, I will draw on some insights from the second N*ature* course concerning Merleau-Ponty's understanding of animality and the animal body.

2.1. Esthesiology

We get a first determination of the meaning of Merleau-Ponty's esthesiology from the most literal sense of the term: an esthesiology is a study (*logos*) of the senses and sensing, of perception, or, more broadly, of the esthetic world disclosed by the senses (*aesthesis*). This brings esthesiology close to the title of the course, "Nature and Logos," and continues and deepens Merleau-Ponty's longstanding effort, taken over from Husserl, to unveil the *logos* of the sensible world (e.g., Merleau-Ponty, 1964, p. 173, 2012, pp. lxxxiv/21, 453/492). However, while this formal definition of esthesiology is no doubt a useful starting point it does not yet unpack the entire concretion and specificity of Merleau-Ponty's esthesiological inquiry.

[6] But see Halák (2018) and Saint Aubert (2013) on the developing notion of body schema across Merleau-Ponty's works and against some common interpretations of the concept.

Given the prevalence of the term "esthesiology" in the work of Helmuth Plessner, and a degree of systematic similarity between his and Merleau-Ponty's ideas, one might expect Plessner to be a source for Merleau-Ponty's esthesiology.[7] However, apart from two works coauthored with Frederik Buytendijk referenced in *Phenomenology of Perception* and *The Structure of Behavior* (Buytendijk & Plessner, 1925, 1936), Merleau-Ponty does not appear to have been familiar with Plessner's principal works.[8]

While the term "esthesiology" and its cognates are absent from Merleau-Ponty's earlier works, they occur more frequently in various texts and working notes from his last years.[9] Where they do occur, it is often with an implicit or explicit reference to Husserl. Specifically, Merleau-Ponty is interested in Husserl's account of the experience of other embodied subjects. As Merleau-Ponty writes in "The Philosopher and His Shadow" (1964), a text dedicated to Husserl which appeared in 1959, the same year in which the "Nature and Logos" course began,

> For Husserl the experience of others is first of all 'esthesiological'[.] [...] What I perceive to begin with is a different 'sensibility' (*Empfindbarkeit*), and only subsequently a different man and a different thought. (168)

Merleau-Ponty then goes on to cite from Husserl's *Ideas II*:

> That man over there sees and hears; on the basis of his perceptions he brings such and such judgments to bear, propounds such and such evaluations and volitions, according to all the different forms possible. That an 'I think' springs forth 'within' him, in that man over there, is a natural fact (*Naturfaktum*) based

[7] See especially Plessner's *Die Einheit der Sinne: Grundlinien einer Aesthesiologie des Geistes* (Plessner, 1923), which Plessner references again in his principal work, *Die Stufen des Organischen und der Mensch* (Plessner, 1928, English translation 2019), as he does in a 1925 paper coauthored with Buytendijk, which also includes a few brief discussions of esthesiology (pp. 77, 125). Merleau-Ponty references this paper in *Phenomenology of Perception*, but without mentioning esthesiology.

[8] Plessner himself speculated in the preface to the second edition of *Stufen* whether Merleau-Ponty (and Sartre) might have been familiar with the work (Plessner, 2019, p. xxxv). On the reciprocal influence (or lack thereof) between Merleau-Ponty, Buytendijk, and Plessner, see van Buuren, 2010. On the systematic connections between Merleau-Ponty and Plessner, see van Buuren, 2018.

[9] Alongside "Nature and Logos" and its summary (Merleau-Ponty, 1970, pp. 124–131), see especially "The Philosopher and His Shadow" (Merleau-Ponty, 1964, pp. 168ff.); *The Visible and the Invisible* and associated working notes (Merleau-Ponty, 1968, pp. 147, 152ff., 168, 172, 178, 233, 256 – henceforth cited as "VI"; 2007b, pp. 412, 435).

> upon the body and corporeal events, and determined by the causal and substantial connection of nature[.] (168f., citing Husserl, 1989)

Creatively drawing from Husserl, Merleau-Ponty is here describing the experience of empathy (*Einfühlung*) through which the other is given to us as an animate body (*Leib*) that also perceives and acts. Contrary to classical arguments for other minds based on a cognitive analogical inference, Merleau-Ponty explains that viewed phenomenologically, our experience of other minds occurs primarily on the level of the body and perception. It is esthesiological. It is not initially a question of one mind constituting or positing another, but rather of one human being experiencing another. Only on the strength of this primary, esthesiological *Einfühlung* – the experience of the other as an animate, perceiving-acting subject – is it possible to conceive some animate bodies as also thinking subjects: "If the other person is to exist for me, he must do so to begin with in an order beneath the order of thought. [...] By the effect of a singular eloquence of the visible body, *Einfühlung* goes from body to mind" (Merleau-Ponty 1964, pp. 170, 169). Summing up, Merleau-Ponty writes, "The whole riddle of *Einfühlung* lies in its initial, 'esthesiological' phase; and it is solved there because it is a perception" (170).

In the published summary of the "Nature and Logos" course (Merleau-Ponty, 1970, pp. 124–131), Merleau-Ponty gives a statement of the project of esthesiology in which these Husserlian resonances are audible. At the same time, however, the unique trajectory of the *Nature* courses is also evident here, as are the central themes of Merleau-Ponty's late phenomenological ontology. These came to prominence in the years separating the second and third *Nature* courses during which Merleau-Ponty was working on the manuscript that survives as *The Visible and the Invisible*. Merleau-Ponty states that one of the purposes of the "Nature and Logos" course was

> to describe the animation of the human body, not in terms of the descent into it of pure consciousness or reflection, but as a metamorphosis of life, and the body as the "body *of* the spirit" (Valéry). [This purpose] would demand an "esthesiology," a study of the body as a perceiving animal. For there can be no question of analyzing the fact of birth as if a body-instrument had received from elsewhere a thought-pilot, or inversely as if an object called the body had mysteriously produced consciousness out of itself. We are not dealing here with two natures, one subordinate to the other, but with a double nature. The themes of the *Umwelt*, of the body schema, of perception as true mobility (*Sichbewegen*), popularized in psychology and nerve physiology, all express the

> idea of corporeality as being with two faces or two "sides" [être à deux faces ou à deux « côtés »]. Thus the body proper is a sensible and it is the "sensing"; it is seen and sees itself, it is touched and touches itself, and, in this latter respect, it comprises an aspect inaccessible to others, open in principle only to itself. The body proper embraces a philosophy of the flesh as the visibility of the invisible.[10]

We see in this passage that by this stage of Merleau-Ponty's thought, there can be no tidy separation of phenomenological, empirical, and ontological investigations. The esthesiological inquiry, which one might have thought purely phenomenological, empirical, or a combination of both, demands for Merleau-Ponty a deeper, ontological interpretation. As *flesh*, as interlacing of sensing and sensible, my body is the visible manifestation and locus of an experience of the world, of a sensing that is, strictly speaking, invisible to others.

Esthesiology, then, is a study of the body and its two "sides," sensing and sensible, and how these interrelate and overlap *intra*corporally within one animal body and *inter*corporally across many. The investigation of the sensible nature of our being and its evolutionary ties to the rest of the living and natural worlds deepen the Husserlian insights into the body and intersubjectivity towards an ontology of nature, life, and the human. But to properly situate the *human* body in this context (i.e., to say in what sense it is another corporeity, as "Nature and Logos" promises), studies of nonhuman animal bodies and their appearances more detailed than those undertaken by Husserl are required. Merleau-Ponty finds the required resources and inspiration in Adolph Portmann's work.

2.2. Portmann's Study of Animal Appearance

Several pages of the lecture notes from the second *Nature* course (the one prior to "Nature and Logos") are dedicated to Portmann's *Die Tiergestalt: Studien über die Bedeutung der tierschen Erscheinungen*.[11] Merleau-Ponty is interested in Portmann's study because he sees it as correcting a tendency to neglect the external, visible appearance of the animal in our overall understanding of the organism and its evolution. An animal's appearance has an expressive value that is not of merely secondary interest but rather of deep significance for its behavior and overall way of being. This appearance contains "a reference to a possible eye" (187). The zebra's stripes have their significance with respect to the eye of

[10] Merleau-Ponty, 1970, pp. 128f. – translation modified.
[11] N 186-190, referring to Portmann, 1948, English translation, 1967.

its predators. The predator's vision is confused by the zebra's stripes in motion, especially when there are several zebras in proximity. Conversely, the tiger's orange-black striped coat is camouflage in the grass to the dichromatic vision of its prey (though not to the trichromatic vision of some primates, including humans). Similar remarks hold for the visibility of many flowering plants, much of it wasted on the human eye, to the ultraviolet vision of the bees who facilitate plant pollination. These relations of vision and visibility of living creatures hold both across members of different species and between members of the same species.

Merleau-Ponty summarizes his reading of Portmann as follows:

> We do not have the right to consider the species as a sum of individuals exterior to one another. There are as many relations among animals of one species as there are internal relations among every part of the body of each animal. The fact that there is a relation between the exterior aspect of the animal and its capacity for vision seems to prove it: the animal sees according to whether it is visible. [...] [There is] a specular relation between animals: each is the mirror of the other. This perceptual relation gives an ontological value back to the notion of species. What exists are not separated animals, but an inter-animality. (N 189)

Though it is not explicitly named as such, we can retrospectively identify here in these "specular relations between animals" the intertwining of vision and the visible. This theme itself anticipates the relations of the visible and the invisible which will be explicitly broached in "Nature and Logos" and Merleau-Ponty's late writings on the flesh. Indeed, some of Portmann's descriptions, such as his treatment of the relations of the visible and the invisible and the inner and the outer (Portmann, 1967, pp. 17ff.), even anticipate and perhaps contributed something to Merleau-Ponty's own late thought and idiom.[12]

What Portmann's study shows is that, far from neglecting the external appearance of animals, nature has lavished great care, even to the point of ostentation, in crafting the visible aspect of its artworks (to indulge Portmann's nature-art analogy). The morphological precision of the visible detail (such as the color and sheen of certain bird feathers which only occurs on the visible part of the feather) and the fact that these extravagances do not serve an immediately preservative function (Portmann, 1967, p. 25) lead us to search for their function elsewhere, namely, in their communicative, expressive, inter-animal significance.

[12] Cf. Fóti (2013, pp. 85ff.) and DeWitte (1998).

Given the range of animal species Portmann draws from in articulating and arguing his case for the importance of exterior appearances in animal life, it is surprising that he has little to say about the human body and its external appearance. Indeed, Portmann even shows a certain reluctance to pursue the question, which he believes would extend him beyond the limits of his study.[13] Still, there is no reason to think that the general principles guiding Portmann's study of nonhuman animals would not apply also to the human animal. While Merleau-Ponty does not mention the human body specifically in the extended discussion of Portmann in the second *Nature* course, he does allude to Portmann in the third course where he turns to the esthesiological study of the human body. Each time, it is to emphasize that the body is an "organ of the for-other" (N 210, 218), an "organ of communication" (225), or an "organ to be seen/of being seen [*organ à être vu*]" (273).[14] Portmann's emphasis on the intertwining of inner and outer and the expressive, communicative, "interanimal" significance of animal appearance deepened and inspired Merleau-Ponty's views on intercorporeity of the body and experience. "Interanimality," Merleau-Ponty summarizes, is "as necessary to the complete definition of the organism as its hormones and its 'internal' processes" (1970, p. 95). Combining Portmann's insights with a phenomenological account of esthesiological empathy, Merleau-Ponty has the resources to explore the distinctively human variation on animal flesh.

2.3. Evolution

Merleau-Ponty's use of Portmann helps us link together the theme of esthesiology with the emphasis on evolution in "Nature and Logos." It is not only that higher animal organisms coincidentally happen to be sensing-sensible creatures, both seeing and seeable. Rather, their external appearance has coevolved precisely alongside the powers of the eyes of conspecifics and other animal species in their milieu.

[13] 156, 198. For Portmann's anthropology, see the essays collected in Portmann (1990). For discussion, see Dufourcq (2016, pp. 99f.)

[14] There is also a significant remark on Portmann among Merleau-Ponty's working notes for *The Visible and the Invisible* from April 1960 under the title "Organs to be seen" (VI 244f.). And the idea expressed in the second *Nature* course and attributed to Portmann, that in the specular relation each animal "is the mirror of the other" (N 189), is echoed in "Eye and Mind," where Merleau-Ponty claims that "man is a mirror for man" (Merleau-Ponty, 2007a, p. 359).

In the introduction to "Nature and Logos," Merleau-Ponty explains why he seeks an evolutionary approach to understanding the human being:

> Regarding the human, the concern is to take him at his point of emergence in Nature. Just as there is an *Ineinander* of life and physicochemistry [...] so too is the human to be taken in the *Ineinander* with animality and Nature. [...] Before being reason, humanity is another corporeity. (N 208)

As we saw above, on Merleau-Ponty's reading of Husserl on *Einfühlung* there is a way of understanding others prior to and preparatory for the cognitive, linguistic level of understanding. Analogously, in the study of the emergence of the human being in nature, in the esthesiological, sensing-sensible body that is prior to rationality, there is a preparation for the evolution of human higher cognition. The method and guiding question of the inquiry proposed in "Nature and Logos" can now be more precisely stated. The question to be answered is, in what way is human corporeality – understood through esthesiology as flesh, as intertwining of the sensing and the sensible, the visible and the invisible, and as a visible body for other seeing-seeable bodies – *another* way of being an animal body? After all, other animal bodies also intertwine sensing and sensible, visible and invisible. The evolutionary approach, the comparison of the emergence of the human body with respect to the bodies of other animals, which are so similar to the human, should give us insight into this emergence of the human variation on animality. As we shall see, the visibility of the human organism has coevolved with the vision of the most important animals in our environment – other human beings – and with the human being's high degree of sociality and dependence on other human beings for survival. [15]

3. An eye for seeing and being seen

Such, then, is the rough approach we can attribute to Merleau-Ponty in "Nature and Logos" for understanding the emergence of the human being. However, in what has been retained of these sketches, we see very little of the concrete realization of this project. There is little discussion of details of human sense organs, perception, and bodily appearance in juxtaposition to our closest non-human animal kin. There is little elaboration of the sensing-sensible nature of the hu-

[15] For Merleau-Ponty's understanding of evolution in the *Nature* courses more generally, see Meacham, 2014.

man body to specify how it and the human way of life constitute a distinctive "variant" (N 208) on this common structure of animate, sensate bodies. Due to Merleau-Ponty's untimely death the year after he delivered the "Nature and Logos" course, the path of inquiry outlined there remained – and largely *remains* – to be executed.

In this section I will initiate the project of esthesiology for the human eye and vision. I begin with a brief discussion of the distinctive characteristics of human see*ing* (3.1.). I then discuss the "cooperative eye hypothesis," which holds that the especially see*able* appearance of the human eye evolved precisely to facilitate human nonverbal communication – to render seeable human seeing (3.2.). I close the section with a discussion of how esthesiology opens onto the more overtly ontological and philosophical problematic of Merleau-Ponty's late thought (3.3.), with consequences for the discussion of naturalizing phenomenology which I will pursue in Section 4.

3.1. An Eye for Seeing

Let us begin with the sens*ing*, perceiv*ing* powers of the human eye. We sometimes denigrate the human senses, lamenting our poor hearing or smell, for example, compared to those of many nonhuman animals. But statistically normal human vision is nothing to despise. Human daytime visual acuity is unparalleled among mammals and scarcely bettered in the animal kingdom. The compound eye of insects does not resolve well because of the small size of its multiple lenses (Land, 2014, pp. 14f.), and the fish eye's resolution is limited by its spherical lens. Among mammals only primates have a hyper-sensitive foveal region in the retina to support such precision (p.39). In the broader animal kingdom, only birds of prey have significantly better daytime acuity than humans (Bringmann & Wiedemann, 2022), though with considerably less binocular and foveal binocular range. In addition to their visual acuity, humans also possess better color vision than most other mammals, among whom only some primates have trichromatic color vision.

Our keen, trichromatic vision no doubt played an important role in various aspects of hominin evolution, such as fine tool manufacture and the development of symbolic and esthetic culture. Our eyes are astonishing organs of discrimination and differentiation. As Merleau-Ponty puts it, playing on the literal sense of the term "acuity," the movements of our eyes "cut up" the environment

(*Umwelt*) (N 217). But from the perspective of our esthesiology, such keen vision would be of little use for our relationship with our conspecifics if it were not see*able* for other seers. And in this respect, too, the human eye is remarkable.

3.2. An Eye for Being Seen

What if the external appearance of the human eye was like the glossy, domed, compound eye of insects?[16] Or what if evolution had outfitted us with a kind of biological one-way mirror covering our eyes, like the one on Darth Vader's helmet that conceals his eyes? Such an eye would not be a window onto the soul. It would not show us the other seeing the world. If we caught a glimpse of ourselves in that mirror, we would not see ourselves seen by the other. Rather, we would see ourselves and our seeing strangely unseen in the murky opacity of an almost unreachable other. Or, at least, we would not have that perceptual faith in being seen that we typically enjoy with other humans. For human beings, who live in the eyes of others, such an eye would alienate us from the network of self-other-world, rather than deepen our inherence in it.

By contrast to such fictional and natural other eyes, the outward morphology of the human eye renders it an organ for being seen, an "organ of the for-other." Compared to the eyes of other animals, including those of our closest primate cousins, the human eye exhibits much starker chromatic contrasts between pupil, iris, sclera, and surrounding skin or fur. Further, our eyes protrude more from our skulls, are more horizontally elongated, and are placed more horizontally within the skull, while still being frontally placed, thus allowing both eyes to be seen simultaneously from a wide range of angles. The eye socket opens laterally exposing our eyes to a greater degree to the side, facilitating both seeing and being seen at and from the periphery (Kobayashi & Kohshima, 1997). Kobayashi and Koshimi (2001) speculate that while the eye morphology of other primates has evolved to *disguise* gaze direction from conspecifics and predators (the "gaze camouflage" hypothesis - see Mearing et al., 2022), the morphology of the human eye has evolved precisely to *reveal* gaze direction to conspecifics. The cooperative eye hypothesis (Kano et al., 2022;

[16] The compound eyes of some arthropods display a dark black spot that always stays roughly in the centre of the eye with respect to the perspective of the observer. This gives the impression of a pupil staring back at the observer. In fact, the black spot appears at the point of maximum light absorption from any given angle. It does not express the animal's visual orientation or emotional state, as does the pupil of the human eye.

Tomasello et al., 2007) argues that the human eye allows members of our largely prosocial species to communicate better with one another. I can follow your eye movements more easily precisely because your eyes so ostentatiously advertise what they are looking at. Human infants learn from a very young age to follow not only head movements but also eye movements to see what others are looking at. Nonhuman primates, by contrast, typically rely on head movements. Following eye movement allows a tremendous improvement in precisely tracking the direction of a conspecific's gaze. This plays a critical role in normal first-language acquisition and in facilitating the triadic, self-other-world structure of joint attention, so vital to the human form of life.

But the external morphology of the human eye does more to shape a human way of being animal than just facilitate joint attention. The eye is also, as we have said, a window onto the soul of the other, onto the other's inner state. Experimental research shows that human subjects can detect fear in human eyes, even when these are abstracted from the surrounding face, simply from the contrast of the sclera and the colored portion of the eye. The ability is not entirely conscious, but it is precocious, evident already in seven-month-old infants (Jessen & Grossmann, 2014). With further information, humans can even begin to discriminate complex emotional states from the eyes, eyebrows, and surrounding fascial muscles, still excluding the mouth and the better part of the forehead (Baron-Cohen et al., 2001). Here the nearly furless face and distinctive eyebrows of the human morphology also have a role to play. Only certain primates have similarly reduced facial fur, and no others have eyebrows. Finally, as if the morphology of the human eye and surrounding areas did not already do enough to expose our inner state, there is yet another uniquely human rouse of the eye that humans employ to convey emotion: crying.[17]

Of course, these external manifestations are by no means infallible indexes of internal states. A good actor can fake tears, widen the eyes in terror, or contract the muscles surrounding the eyes for the most genuine of fake smiles. As for perception, I need not be directing my attention to the object my eyes are focusing on. I could really be attending to some other part of the visual field, or to the song I'm humming in my head, or to the pain in my knee. There is variation from individual to individual and culture to culture in the expression of emotion. But we do not need invariable correlations between perception and emotion,

[17] Vingerhoets, 2013. Though other animals produce tears to lubricate their eyes, only humans shed emotional tears.

and their manifestations in the externally appearing body. It suffices for purposes of our human way of life that we read the basic bodily intentions and expressions of others accurately enough most of the time. Indeed, it is only because we do this so reliably and so often that breaking the rules can be effective, as in pretense.

I have here only mentioned a few factors concerning the sensible appearance of the human body's sensing, and the specifically human morphology that facilitates its sensible appearing. My comments have focused on the eyes and immediately surrounding region. But already there is something of an induction basis to support a broader hypothesis: what if the human being evolved to be the naked ape it is – its fur thinned out allowing the flesh to be seen, to be touched – in order that the human body would be more expressive, more communicative, more of an organ "to be seen," and a more of an "organ of the for-other"? The current dominant theories purporting to explain human furlessness propose that our fur thinned out to facilitate thermoregulation or to make our bodies less hospitable to parasites. This may well be true, and it is not mutually inconsistent with the hypothesis that human fur loss also served a social function. Further development of the hypothesis is required, development that would be well guided by the Merleau-Pontian framework for thinking about the appearance of the human body as a sensing-sensible, intercorporal, intervisible flesh.

3.3. The visibility of the invisible

The external appearance of a sense organ, then, conveys something about the internal state (perceptual, emotional) of the embodied subject. That is, something that is, in a sense, *invisible* ("subjective" states) attains, in a sense, its unique sort of *visibility* ("objective" appearance) in the sense organ. The human eye is exemplary with respect to other animal eyes (it is "another corporeity") in rendering visible this invisible. This exemplarity is not uniqueness, and the difference is one of degree rather than kind. Other nonhuman animal eyes also render visible their respective invisible (Ueda et al., 2014). Further, other animal sense organs possess their own mode of opening onto the invisible which may be exemplary in comparison to the human counterparts. Echolocation, for example, may render the invisible *audible* in a dense, intercorporal intimacy that is more exemplary in that sensory modality than anything the human sense of hear-

ing can rival. To understand a dolphin or a bat and their mode of life would require an esthesiological study of how their sensing-sensible flesh opens onto that of other animals and the world.

In approaching the theme of the visible and the invisible through esthesiology we broach a challenging topic of interpretation in Merleau-Ponty's thought, one to which it will not be possible to do full justice here. The embodiment of perception and emotion is only one aspect of this complex of relations between the visible and the invisible. Nonetheless, it offers a paradigmatic case of the intertwining of the visible and the invisible for opening up this problematic. It could thus be systematically and pedagogically useful for exposing broader questions of the visible and the invisible, such as the givenness of concealed aspects of the object of visual perception, and the nature of symbolism, linguistic meaning, and ideality.

We can get a sense for Merleau-Ponty's position on the visibility of the other's invisible vision by contrasting it with that of Sartre, so often Merleau-Ponty's covert interlocutor and foil especially in his teaching and unpublished writing. In *Being and Nothingness,* Sartre maintains a strict and irreconcilable opposition between the body as I live and experience through it, my body as my opening onto the world and the locus of the actualization of my freedom, on the one hand; and my body as experienced from the outside, as an object for consciousness, on the other hand. For Sartre, when I see a body, whether another's or my own, I see it merely "as a thing, not as a being of reference" (Sartre, 1992, p. 469). There is no system of equivalences or exchanges between the seeing and the seen body such that I could be said, in any appropriate sense of the term, to see the other seeing. As such, Sartre thinks that philosophers and psychologists who have made much of the phenomenon of "double sensation" (i.e., the sensing-sensed, self-sensing character of the body) and its role in understanding self and other have grossly overstated its importance and "shown themselves up as understanding nothing about the question" (p.468). Though Sartre does not name any particular scholars, this applies to Husserl and (anachronistically) to Merleau-Ponty.[18]

For Merleau-Ponty, there is something right and something wrong in Sartre's position. In a strict sense, I never experience the other's vision in its original mode of givenness. I never live it "from the inside," as it were. Invoking

[18] Merleau-Ponty's own first discussion of the topic appears in *Phenomenology of Perception*, which appeared two years after *Being and Nothingness*.

Husserl's idiom, Merleau-Ponty states that the other's sensing is, strictly speaking, the "*Nichturpräsentierte*" (that which is not presented in an original way – N 209), or even the "*Nichturpräsentierbare*" (that which *cannot be* presented in an original way).[19] To that extent, Sartre is correct. However, even the *Nichturpräsentierbare* has its specific *Urpräsentierbarkeit* (its possibility of being originally presented precisely *as* that which cannot be presented in an original way). And the flesh, as intertwining of the sensing-sensible, is precisely this paradoxical givenness of the invisible in the visible that we have been exploring in our esthesiology:

> My body [understood as] standing in front of the upright things, in a circuit with the world, *Einfühlung* with the world, with things, with animals, with other bodies (as having a perceiving "side" as well) [is] made comprehensible by this theory of the flesh. For the flesh is *Urpräsentierbarkeit* of the *Nichturpräsentierten* as such, the visibility of the invisible–[we require an] esthesiology, the study of this miracle that is a sense organ. It is figuration in the visible of the invisible "becoming aware [*prise de conscience*]." (N 209 – translation modified)

This and similar passages from "Nature and Logos" indicate that Merleau-Ponty saw esthesiology as providing an alternative route into the "properly philosophical" and ontological problematic of his late thought. His introductions and drafts for the course indicate that fully tracing the route from esthesiology to a philosophy of the visible and the invisible would require several intermediary steps beyond what I have outlined above.[20] We would need to develop an esthe-

[19] VI 217, 228, 249f. It is not clear from the "Nature and Logos" sketches and the working notes for *The Visible and the Invisible* that Merleau-Ponty was making a clear distinction between the *Nichturpräsentierten* and the *Nichturpräsentierbaren*. The distinction does, however, roughly correspond to a distinction he entertains elsewhere between what is invisible as a matter of fact and what is invisible as a matter of principle. In a note from January 1959, prior to his use of the German terms just mentioned, Merleau-Ponty writes, "Husserl: human bodies have an 'other side'–a 'spiritual' side––(cf. the mode of being of 'hidden sides,' hidden forever or provisionally– the mode of being of antipodes–the difference is that *by principle* the 'spiritual' side of a living body can be *selbstgegeben* to me only as an absence) (VI 168). See also *Husserl at the Limits of Phenomenology* (Merleau-Ponty, 2001, pp. 24, 68, 71), the lecture course delivered in parallel with "Nature and Logos," and de Saint Aubert, 2004, p. 154.

[20] See the outline for the course provided in the Introduction (N 208) as well as the section headings in sketches 1, 2, 3, and 8. I plan to pursue this reconstruction further in a monograph in the coming years.

siology of the other sensory organs and modalities in their synesthetic overlapping with one another. We would need to explore the *libidinal* dimension of the esthesiological body that is implied in the body's desire for intercorporeity and communion with others and the world. Finally, we would need to articulate the passage from the natural, esthesiological communication of the senses to properly symbolic and linguistic communication.

Based on the preliminary foray into esthesiology presented above, then, there is only so much that can be done to reconstruct Merleau-Ponty's final philosophical vision. In the following section, however, I will attempt to explore some of the ontological and methodological consequences of "Nature and Logos" and the *Nature* lectures more broadly for our understanding of the relationship between phenomenology and the natural sciences.

4. Esthesiology, ontology, and phenomenological naturalism

"Nature and Logos" echoes recurrent themes from Merleau-Ponty's thought concerning the dialogue between phenomenology and the natural sciences. It includes, first, an implicit critique of objectivism in the study of sensing, animate beings. The eye cannot be treated as a pure object, neither for the being who sees through it, nor for the being who sees it, including for the scientist who studies the eye. As Aristotle would say, a hand severed from a body, and hence not animated by the *psyche*, is a "hand" only in an equivocal sense. For Merleau-Ponty, an eye not seen as the intertwining of sensing and sensible aspects is an "eye" only in an equivocal sense. A survey of the recent debate surrounding the cooperative eye hypothesis reveals the importance of this theoretical insight for empirical inquiry. Some critics have claimed contrary to the cooperative eye hypothesis that human ocular morphology is not in fact more conspicuous than that of nonhuman primates (e.g., Perea-García et al., 2019). However, the methods used in these studies involve reducing still images of gazes to greyscale and subjecting them to a quantified analysis to yield a ratio of scleral-to-iris contrast for different species. Doing so abstracts the experienced phenomenon from its natural environment as it is experienced for a seer, reducing it to a mere quantified, objective stimulus. The phenomenon thus obliterated, it is no surprise that the relevant difference in visible ocular morphologies is also lost. A critical consideration of these limitations (Mearing & Koops, 2021), and actual experiment and observation in more natural settings (Kano et al., 2022), begin to restore it. Ultimately, this objectivism is only overcome when, in Evan

Thompson's words, phenomenology shows the sciences of life and mind "how our self-experience as living beings inescapably and necessarily constitutes our understanding of life as an object of scientific investigation" (2011, p. 118)

The counterpart of the critique of objectivism in Merleau-Ponty's thought, though, is a "truth of naturalism" that phenomenological philosophy should take away from its encounter with the natural sciences. Various of the sketches for the "Nature and Logos" course include detailed discussions of evolutionary theory as a propaedeutic to the investigation of the emergence of the human being from an evolutionary perspective. Commenting on this emphasis, Merleau-Ponty notes,

> It is to give this depth to the human body, this archaeology, this natal past, this phylogenetic reference, to restore it in a fabric of preobjective, enveloping being, from which it emerges and which reminds us at every moment of its identity as sensing and sensible, that we have given such a large place to the theory of evolution. (N 273)

Here as elsewhere in Merleau-Ponty's work, the thorough but critical study of the empirical research prevents phenomenology from regressing into a philosophy of pure consciousness that sees its domain as radically separated from that of nature. The neglect of these natal and natural depths of the human "falsifies our conception of history and the human being." Classical phenomenological approaches have tended to focus on the phenomenal, sensing aspect of experience to the neglect of the objecttive," sensible aspect of the flesh. Esthesiology, by contrast, reminds us that the relations between the sensing and sensible are not external but internal. They are, to use one of the images of this dual-aspectivity that informs Merleau-Ponty's thought, the two sides of a sheet of paper: what happens to one side has consequences for the other. The seemingly methodological points concerning the critique of objectivism and the truth of naturalism, then, have an ontological bearing that is exhibited in the complex and reciprocal relations between the sensing and sensible aspects of the flesh. It is no mere phenomenological psychology that Merleau-Ponty is entertaining here, but rather a rethinking of the very ontological underpinnings of our understanding of consciousness and the human, and their place in nature.

This aspect of the "Nature and Logos" lectures remains somewhat underdeveloped in the concrete esthesiological investigations presented in the previous sections of this paper. How more specifically does esthesiology deepen our understanding of the *ontological* intertwining of the sensing and the sensible? How does it help us appreciate that the sensing and sensible are not merely

parallel but that their relations are truly intertwining, *chiasmic*, as Merleau-Ponty's late thought holds? Merleau-Ponty's outline for the trajectory of "Nature and Logos" indicates that he thought the study of esthesiology could lead through a natural progression to a properly philosophical study of the visible and invisible (N 208). But the sketches for the lectures are more suggestive than explicit on this point.

One proposal we might further develop is the idea that the sense organs, these loci of the intertwining of sensing and sensible, operate by an "institution of nature" (N 219, 222, 226, 306). There is a double allusion in the term "institution" to Husserl and Descartes, as well as to Merleau-Ponty's critical and constructive encounters with each. For Descartes, the "institution of nature" is in fact an institution established by God, allowing for the impressions of the corporeal, extended world operating upon the bodily sense organs to be translated into the utterly incommensurable language of thought and perception. But this institution of nature, the marvel of the esthesiological body as intertwining of sensing and sensible that Descartes resolves *deus ex machina*, is precisely the mystery that Merleau-Ponty wants to explore. He proposes that we seek to understand it "by penetrating it as an opening to Nature" (306 – translation modified).[21]

For Husserl, institution is paradigmatically achieved by consciousness, whether in active or passive synthesis. Institution is also an intersubjective phenomenon. We may take over historical institutions, as in the analyses of "Origin of Geometry" that Merleau-Ponty was examining in a course parallel to "Nature and Logos" (Merleau-Ponty, 2001). But the transition from active institution, to passive institution, to past historical institutions (roughly, from static, to genetic, to generative phenomenology) would seem to only push the series of institutions back further. For even the mythical founder and *Urstifter* of "Origin of Geometry" established institutions against the background of a more or less coherent and meaningful experience of the world achieved in part owing to the natural functioning of perception.

[21] In fact, Merleau-Ponty sees more ambiguity and promise than this in Descartes' understanding of the soul-body relationship, but the details are not relevant for present purposes. See N 9-20, and the discussion in "Eye and Mind" (Merleau-Ponty, 2007a). For Descartes on the institution of nature, see Mantovani (2022). Merleau-Ponty mentions the institution of nature in connection with Descartes in a number of writings from around this period (VI 168; 1964, p. 167; 2007a, p. 365).

It is this primordial ground of institution – an institution not instituted by deliberative, human consciousness – that Merleau-Ponty seeks in the *Nature* courses, and that he alludes to with his claim that the human senses function by an "institution of nature." His *Collège de France* course on institution, delivered in 1954-1955, defines institution broadly enough to allow for impersonal, passive, or "anonymous" instituting (Merleau-Ponty, 2010, p. 13). The first concrete investigations into institution there treat nonhuman animal life as already involving institution (Merleau-Ponty, 2010, pp. 16ff.), a theme that returns and is deepened in the second *Nature* lecture course, where nonhuman animals are seen as capable of institutions and symbolic activity (N 190ff.). Ultimately, the *Nature* courses push institution even deeper, recognizing Nature itself as "autoproduction of meaning" (N 3), independent of thought or consciousness, non-constructed, and non-instituted (4).

Not instituted, that is, by human being (N 3). Yet Nature, as the auto-generation of meaning capable of accretion over evolutionary time, lays down institutions that sentient beings take up. To pursue esthesiology, then, to explore this "opening into nature" that is the natural institution of the senses, is to catch a glimpse of this primordial, meaning-generating, instituting power of nature. The eye is an emergence of vision within the visible world, born of the same stuff as nature. Of course, one must learn to see. But thanks to the institution of nature, this learning occurs through a natural maturation of the body in normal animal ontogeny, not through a deliberate or explicit effort to learn to see. The seer who operates – or *co*-operates – the eye assumes a natural institution that has been refined and evolved in nature over the course of hundreds of millions of years and that functions almost by itself, almost in spite of the conscious seer's obliviousness and ignorance of its functioning. Today's seer takes up the institution of nature as the modern geometer takes up the thousand-year institution of her discipline. But with the eye, there is no real or mythical first seer who instituted the eye, much less a divine architect who established its network of internal relations with sentient seeing. There is only Nature's auto-generation of meaning and institution (cf. Morris, 2018 esp. chapters 6 and 7).

Further, if it is "impossible to separate behavior and morphology" (Merleau-Ponty, 1970, p. 95), it is likewise impossible to separate the interanimal, communicative dimension of our bodily institution from our overall understanding of the sensing-sensible organism. As our discussion of the cooperative eye hypothesis has revealed, this instituted sense organ entails not only the pos-

sibility of perceiving oneself and the natural world. It is also a means of communication with fellow animals, human and otherwise. The human senses, that is, are natural-social institutions. In the esthesiological body, there is a "natural rooting of the for other" (N 210). Human communication is as "'natural' as the functioning of the senses" (225). This natural institution is the true first language, a language of perception and action to which our conventional languages are like "second bodies" (211). It forms the implicit, unacknowledged basis for the human institution of conventional languages (211f., 219).

Esthesiology, then, as an "opening onto Nature," reveals to us the depths of human-animal sensible being that are instituted and operative, albeit usually unconsciously, in all sensing and conscious human experience. It reveals to us nature as "the other side of human being," as Merleau-Ponty put it in one of his last working notes for *The Visible and the Invisible* (VI 274 – translation modified). To understand the human-nature relationship in these terms is to understand consciousness, the traditional subject domain of phenomenology, as invested in and invested by forces that are beyond the scope of its usual method of self-reflection on consciousness. The "truth of naturalism," then, would be an ineliminable truth for phenomenology, just as the truth of my sensible body is the ineliminable reverse side of my sensing experience of the world. To avoid the confusion that the term "naturalized phenomenology" inevitably engenders, however, we might prefer "phenomenological naturalism" as a name for this position. To this author's ear, at least, the latter term, unlike the former, cannot be taken as suggesting that the phenomenal and phenomenological could ever be eliminated or reduced in their methodological and ontological intertwining with the natural.

I close with one final observation on the state and content of Merleau-Ponty's various late works. The manuscript of *The Visible and the Invisible* contains little explicit mention of the problematic of nature. This is curious, given that many earlier working notes (e.g., those from early 1959) suggest that the interrogation of the concept of nature should play a central role in the project (sometimes still referred to under the title of "The Origin of Truth"), as does the very late working note I quoted just above (VI 274). Indeed, while the working title of the one division of *The Visible and the Invisible* for which Merleau-Ponty completed a draft is "The Visible and Nature: Philosophical Interrogation," we do not find the sustained, rich, historical and conceptual interrogation of the concept of nature that the *Nature* courses offer. This is surprising, given that the 1959-1960 "Nature and Logos" course still treats the ontology of Nature as a

"way toward ontology [...] that we prefer because the evolution of the concept of Nature is a more convincing propaedeutic" (N 204). On the one hand, this does suggest that the path into ontology through nature is just a propaedeutic to ontology proper. Even if Merleau-Ponty continued to view it as preferable to other possible means of entry, which we simply do not know, it may not itself be the only viable propaedeutic. On the other hand, given the centrality of these discussions in his late work, and the incomplete and tentative state of the manuscript for *The Visible and the Invisible*, it could still be contended that any attempt to reconstruct Merleau-Ponty's late philosophy that does not take the concept of nature seriously will be inadequate.

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