

Is There Not a Truth of Vitalism? Vital Normativity in Canguilhem and Merleau-Ponty



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Abstract The paper investigates the phenomenon of vitalism through the lens of vital normativity as expounded by Maurice Merleau-Ponty and Georges Canguilhem. I argue that the two authors independently developed complementary critiques of the mechanical-behaviourist conception of life sciences, which culminated in a surprisingly similar notion of life construed as a normative (polarized) activity, i.e., an activity that is not indifferent to its own conditions of possibility. Such an alternative conception of life has far-reaching consequences for the epistemology of life sciences, for it requires it to reconsider not only its object of inquiry - the nature of (the relationship between) an organism and its environment -, but also, since scientists themselves are living beings, the nature of its epistemic practices. What I call the truth of (a specific variety of) vitalism is thus reflected not only in how life is cognized, but also in how life cognizes (itself). This last point is of particular philosophical importance, as it paves the way towards a more dynamic conception of reflection (tentatively called ouroboric thought), which takes seriously that we, as cognizers of life, at the same time live the lives of cognizers.

1 Historical Blindspot: Opportunities Missed, Opportunities Seized

In a sense, this paper is a reflection on a missed opportunity; an opportunity for a productive dialogue between two French thinkers who, working at the same time and in the same intellectual milieu, addressed similar issues and drew surprisingly similar conclusions, but who never, at least to my knowledge, engaged with each other's work directly. The two thinkers in question are Georges Canguilhem and Maurice Merleau-Ponty, and the topic they both grappled with - from two different,

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yet complementary perspectives - is vital normativity and its implications for philosophy and science.¹

This surprising oversight has not gone completely unnoticed and has been acknowledged briefly by at least one of the two protagonists of our story. Thus, in his preface to the second edition of the *Essay on Some Problems Concerning the Normal and the Pathological* (published in 1950), Canguilhem points out that, during the inception of the *Essay* (first published in 1943), he could have profited by drawing on Merleau-Ponty's *The Structure of Behavior* (first published in 1942). However, as it was brought to his attention when the manuscript had already been in print, he could give it but a passing nod of recognition. Yet to his mind, such an omission is not necessarily something to be regretted since, as he puts it, he would much prefer "a convergence whose fortuitous character better emphasizes the value of intellectual necessity to an acquiescence, even fully sincere, in the view of others" (NP, 29–30).

In what follows, I will try to unearth and explore this 'fortuitous convergence', especially as it pertains to the topic of vital normativity and its relation to vitalism. I will draw mostly on the two texts mentioned above, although I will occasionally turn to some later works, particularly Canguilhem's *Knowledge of Life* (first published in 1952) and Merleau-Ponty's *Phenomenology of Perception* (first published in 1945). My approach will not be exegetical, but thematic: by drawing on both authors I will put forward a case for vital normativity which, as I will try to show, lends credence to a general impetus behind vitalist approaches. In so doing, I will, for the most part, skim over many an undoubtedly important difference between the two authors, leaving a more thorough comparative study to those better versed in such undertakings.

2 Dialectical Blindspot: An Immodestly Vitalist Proposal

Before I proceed to the main topic, however, there is one obvious hurdle I need to tackle. This hurdle is related to the fact that, while Canguilhem had been quite vocal in his defense of (some version of) vitalism,² Merleau-Ponty never seems to have ventured down the vitalist path; in fact, he was often openly dismissive of vitalism.³ Doesn't this, in and of itself, undermine the project I have set out to achieve?

¹Despite the thematic convergence of their investigative agendas, there is currently a surprising lack of comparative studies on the topic; a notable exception is Peña-Guzmán (2013).

²For a more in-depth analysis of Canguilhem's vitalism see Wolfe and Wong 2014.

³For instance: "We are upholding no species of vitalism whatsoever here. We do not mean that the analysis of the living body encounters a limit in irreducible vital forces." (SB, 151) And even more radically: "These remarks cannot serve to justify a vitalism, however - even the refined vitalism of Bergson. The relation of the vital élan to that which it produces is not conceivable, it is magical." (SB, 158)

Let us approach this from a somewhat skewed angle. Underneath the thematic polyphony of Merleau-Ponty's work one finds a common methodological thread. The latter is best illustrated by his tendency to flesh out his own views against the backdrop of the antagonistic approaches he is trying to supersede: realism vs. transcendentalism, empiricism vs. intellectualism, naturalism vs. vitalism, etc. Now, while on the surface level this may seem like a fairly trivial strategy - after all, hasn't such a contrastive approach become the gold standard of contemporary academic debate? - Merleau-Ponty supplements it with a unique dialectical twist.⁴ For, instead of simply refuting the two views under scrutiny, he is bent on showing that, while ultimately *erroneous*, they are nevertheless *motivated* errors, "rest[ing] on an authentic phenomenon which philosophy has the function of making explicit" (SB, 216). In other words, while rejecting some aspects of each antagonistic pair, he retains others, and he does so by reintegrating them, in a broadly Hegelian fashion, into a more comprehensive whole, in light of which their meaning undergoes a substantial change. Thus, one finds explicit references to a "truth of dualism" (SB, 209), "truth of sociologism" (SB, 211), "truth of naturalism and realism" (SB, 224), even "truth of solipsism" (PP, 419), as well as claims to the effect that intellectualism/transcendentalism is "less false than abstract" (PP, 143), etc.

However, there is a glaring omission in Merleau-Ponty's strategy, for, although featuring in several of his dialectical arguments, he never raises the question of the truth of *vitalism*. This is all the more striking if we consider that not only is its antagonistic pair, naturalism, afforded ample treatment - the penultimate section of *The Structure of Behavior* even carries the title "Is There Not a Truth of Naturalism?" (SB, 201–221) - but also that, as mentioned, Merleau-Ponty speaks of the truth of sociologism *despite the fact* that sociologism plays a marginal role in his treatise. Is vitalism, that dreaded Urfiend of modern biological science, so flawed in his eyes as to exceed even the rehabilitative scope of the dialectical approach?

The way in which Merleau-Ponty normally speaks of vitalism, namely as a view propounding the existence of an ephemeral supplement, variously called "life force", "élan vital", "entelechy", etc., to the mechanistic processes found in living organisms, lends credence to such interpretation. Thus, by Merleau-Ponty's lights, both naturalism and vitalism subscribe to the "realist postulate" (SB, 46), i.e., they both view the organism as a bundle of interrelated causal mechanisms, with naturalism "juxtaposing separated mechanisms" and vitalism "subordinating them to an entelechy" (SB, 3). However, in his view, both of these conceptions are mistaken, since the proper object of biology is neither (pace naturalism) "the superposition of elementary reflexes" nor (pace vitalism) "the intervention of 'vital' force", but rather "an indecomposable structure of behavior" (SB, 46; more on this presently).

What Merleau-Ponty has in mind when he speaks of vitalism, then, seems to be the run-of-the-mill *substantive* variety (Wolfe 2011) which, in Canguilhem's words, accepts "the insertion of the living organism into a physical milieu to whose laws it constitutes exception" (AV, 69) and tries to underscore the originality of life "by

⁴For Merleau-Ponty's use of "dialectics" see Pollard 2016.

demarcating within the physico-chemical territory [...] enclaves of indetermination, zones of dissidence, or foyers of heresy” (ibid.). Canguilhem agrees with Merleau-Ponty that such ‘vitalism of two empires’ - the empire of physio-chemical processes and the empire of vital-biological forces - leads to philosophical blind alleys, for “there cannot be an empire within an empire without there being no longer any empire” (ibid.). Yet, as Canguilhem is quick to add, the classical substantialist vitalism errs not in pushing its agenda too far - by, say, reverting to supernatural forces - but in *not going far enough*:

If one is to assert the originality of the biological, this must be in terms of the originality of one realm over the whole of experience, and not over islets of experiences. In the end, classical vitalism sins, paradoxically, only in its excessive modesty, in its reluctance to universalize its conception of experience. (ibid.; cf. SB, 158)

There is, then, an *immodest* variety of vitalism, of which Canguilhem explicitly speaks and to which Merleau-Ponty merely alludes, a vitalism that is both less and more radical than its substantive cousin. It is *less* radical in that it does not posit epistemic and ontological cracks in the edifice of scientific knowledge; however, it is *more* radical in that, if taken seriously, it forces us to “‘comprehend’ matter within life, and the sciences of matter - which is science itself - within the activity of the living” (AV, 70). That is, vitalism, in this broader sense, is not a scientific theory, but a persistent demand to inquire into the *existential underpinnings* of scientific inquiry; it has to do not so much with centers of indetermination within the scientific framework as with decentering scientific determinations against the backdrop of vital normativity. And, as I will argue, it is precisely in this epistemic and existential immodesty that, as a germinating seed, the truth of vitalism lies.

3 Mechanical Blindspot: Vital Normativity

I begin with a brief exposition of Merleau-Ponty’s and Canguilhem’s critiques of the mechanist-behaviourist account of life. The two approaches, although waging war against a common foe, tackle the issue from different perspectives, with Merleau-Ponty focusing primarily on the notion of behaviour and Canguilhem dealing with the notion of (un)health and (ab)normality. However, their critiques prove mutually enriching and lead to a strikingly similar understanding of life.

Merleau-Ponty starts his exploration of behaviour with a critical assessment of behaviourism, the prevalent school of thought in the biological and psychological sciences of the time (SB, 4–5). According to the behaviourist, the objective conception of animal and human comportment must be shorn of intentionality, meaning and normativity, and construed solely in terms of mechanical action,

in which the cause and the effect are decomposable into real elements which have a one-to-one correspondence. In elementary actions, the dependence is uni-directional [...] and, even when one speaks of reciprocal action between two terms, it can be reduced to a series of uni-directional determinations. (SB, 160-161)

For the behaviourist, every behavioural act consists of a sequence of causally inter-related mechanical actions which take place in discrete physio-anatomical parts: an outside stimulus impinges on a specific sense organ (affector); this triggers a specific neural pathway (reflex arc); finally, the stimulated pathway brings about the activation of a specific motor unit (effector). Thus, all behaviour is ultimately a summative (re-)action caused by an outside stimulus and mechanically mediated by the activity of independent reflex arcs: “The ‘normal’ activity of an organism is only the functioning of this apparatus constructed by nature; there are no genuine norms; there are only effects” (SB, 9).

However, drawing on the findings of numerous non-reductionist (holist) scientists of the time - primarily Goldstein,⁵ but also Buytendijk, von Weizsäcker, Wertheimer, Köhler and Koffka -, Merleau-Ponty argues that behaviourism is both empirically unsubstantiated and conceptually moot. To begin with, it accords poorly with actual observations.⁶ In words of Noah Brender:

The ‘elementary reflex’ which was supposed to be the basic unit of behaviour [...] turned out to be largely mythical. [...] Instead, the effect of a given stimulus was found to vary according to the presence or absence of other stimuli, the history of the organism, and the activity it was engaged in. (Brender 2013, 251-2)

However, when confronted with such empirical discrepancies, the behaviourist, instead of eschewing his initial (mechanistic) presuppositions, tries to make observational data fit theoretical predictions. It does this by introducing auxiliary, and fundamentally unobservable, processes (inhibition, shunting, etc.), “which are almost in contradiction with it, just as the Ptolemaic system revealed its inadequacy by the large number of *ad hoc* suppositions which became necessary in order to make it accord with the facts” (SB, 16).

An alternative approach, adhering more closely to observational data, portrays behaviour not as something that can be decomposed into a succession of reflexes but as something pertaining to *the organism as a whole*. Even more importantly, behaviour, on this view, cannot be understood by studying processes that are passively triggered in a living being by external influences, but becomes intelligible only in light of *an active engagement of the organism with its environment*. For example, consider a predator observing its prey: “When the eye and the ear follow an animal in flight, it is impossible to say ‘which started first’ in the exchange of the stimuli.” (ibid., 13) One could, of course, say that “the movements of the organism are always

⁵It could be claimed that, since both Canguilhem and Merleau-Ponty were influenced by Goldstein’s organismic biology, we shouldn’t be surprised to find their work cohere in so many respects. However, this is but partly, perhaps only trivially, true; for while it is undoubtedly the case that both drew heavily on Goldstein, it is also the case that each of them not only focused on different aspects of Goldstein’s work, but also expanded and modified them in substantial ways that merit further exploration. While there are some high-quality studies on the impact of Goldstein on each of the two authors individually - see, e.g., Smyth 2017 for Merleau-Ponty and Wolfe 2015 for Canguilhem -, a comprehensive comparative analysis of the two “Goldsteinians” remains yet to be written.

⁶For a comprehensive overview see Sheredos 2017, 194–7.

conditioned by external influences”, i.e., that behaviour is the *effect* of stimulations; but one could just as rightfully say that these stimulations have “been made possible only by its preceding movements which have culminated in exposing the receptor organ to the external influences”, i.e., that behaviour is the *cause* of all stimulations (*ibid.*).

The organism is not akin to a keyboard that reacts, in a predetermined way, to a set of external factors; instead, it actively participates, “by its proper manner of offering itself to actions from the outside”, in the process of *selecting, and structuring of*, the stimuli to which it will be sensitive (SB, 13). This is why the organism does not respond to discrete physicochemical stimuli, as behaviourists would have it, but rather to their frequency, intensity, temporal sequence, etc., i.e., to the complexes of stimuli organized as *structured wholes* (SB, 8). Thus, by shaping and elaborating the stimuli, the organism carves out of the physical domain a unique *virtual domain* - a ‘milieu’ or an ‘Umwelt’ as a domain of structures that are *significant for it*: “One could say that the [milieu] emerges from the world through the being and the actualization of the organism [...] an organism can exist only if it succeeds in finding in the world an adequate [milieu] - in shaping a [milieu]” (SB, 13; quoting Goldstein, cf. O, 85).⁷

This last point is what, in Merleau-Ponty’s opinion, distinguishes vital systems from *all* physical systems, even those that, as suggested by Gestalt theorists, act as organized wholes or as what in modern parlance would be called *complex dynamic systems*. For instance, Merleau-Ponty mentions the formation of a spherical soap bubble (SB, 131, 146) as an example of a physical process that is best described not in terms of causal interactions between discrete particles, but in terms of *dynamic field phenomena* adhering to the *law of minimum energy displacement and maximum level of stability* (SB, 36, 146). Thus, in the soap bubble,

the external forces exerted on the surface of the bubble tend to compress it into a point; the pressure of the enclosed air on the other hand demands as large a volume as possible. The spherical structure which is realized represents the only possible solution to this problem of minimum and maximum. (SB, 146)

When exposed to external influences, dynamic physical systems (re)act as *integrated wholes*: they undergo concerted transformations of their co-determining ‘parts’ which collectively tend towards a mechanical-energetic equilibrium.

Now, the comportment of living beings can be said to resemble that of dynamic physical systems in that it also tends towards an equilibrium: every outside disturbance triggers imbalances in the organism’s sensory parts, which are then compensated by changes in the motor parts, only to trigger further alterations in the sensory parts, and so on (SB, 36–7). However, Merleau-Ponty argues that, unlike physical systems, in which the equilibrium is obtained with regards to *real* (i.e.,

⁷In fact, as both Canguilhem and Merleau-Ponty emphasize, organisms respond to discrete physico-chemical stimuli only in pathological and laboratory conditions, i.e., in conditions that are *abnormal* for the living being. In such cases, the organism can be “momentarily reduced to the conditions of the physical [cause-effect] system” (SB, 150); however, this is not a mode of being that is *proper to the organism* (more on this below).

physico-chemical) conditions, vital systems obtain the equilibrium “with respect to *virtual* conditions which the system itself brings into existence” (SB, 145; my emphasis). Put differently, the equilibrium that the vital system tends towards is not the mechanical-energetic equilibrium, but rather the “vital equilibrium” (SB, 147), which depends on the *organisation, history and activities of the organism*: “[T]he [vital] structure, instead of procuring release from the forces with which it is penetrated through the pressure of external conditions, executes a work beyond its proper limits and constitutes a proper milieu for itself” (SB, 145–6). Thus, whereas actions exercised by the physical system always have “the effect of *reducing a state of tension*, that is to say, of *advancing the system toward rest*” (SB, 145; my emphasis), living beings tend not towards rest, i.e., towards the simplest energetic state with regards to their physico-chemical surrounding, but rather towards the maintenance of a *level of tension that is characteristic for them*. This level of tension is simplest not with regards to physico-chemical factors but *with regards to the organism’s characteristic engagements with its milieu* (SB, 146–7).

According to Merleau-Ponty, then, the comportment of living beings needs to be situated into the virtual domain of significance, which they construct by submitting the external stimuli to their “*descriptive norms*” (SB, 28; my emphasis). Hence, unlike physical systems, whose ‘behaviour’ can be encapsulated in mathematically expressible laws, “organic structures are understood only by a *norm*, by a certain type of transitive action which characterizes the individual” (SB, 148; my emphasis). However, although integral to his argument, Merleau-Ponty never elucidates what he means by “norm”; luckily, Canguilhem’s Goldstein-inspired explorations into the nature of health/disease and normal/pathological provide a much-needed supplement to this interpretative hiatus.

As already mentioned, Canguilhem approaches a similar topic from a different angle, focusing primarily on the question of whether life sciences (medicine in particular) can be couched exclusively in objectivist terms. Now, what exactly would objective science of health and normality amount to? For one thing, it would construe health and normality as *descriptive (statistical) facts* represented by “a canonical collection of functional constants” (NP, 122): body temperature, pulse rate, blood pressure, etc. Analogously, disease and abnormality would be conceived as deviations from the established statistical averages (NP, 151): they would denote *quantitative privations*, i.e., divergences from physiological constants, instead of qualitative alterations, i.e., changes in the manner of being (NP, 42). Consequently, scientific medicine would require that pathology (science of disease/abnormality) be grounded in physiology (science of health/normality), with the latter studying normal (i.e., statistically average) and the former studying abnormal (i.e., statistically divergent) physiological processes.

According to Canguilhem, the ideal of objective medicine harkens back to the grand philosophical narrative, developed by the protagonists of what has been later termed scientific revolution, whose ultimate goal was the all-encompassing mechanization of nature (NP, 128). However, any approach that tries to account for vital behaviour in mechanical terms faces a serious challenge, for it needs to explain why

physical systems are indifferent to their movements, while this is decidedly *not* the case with living systems:

In establishing the science of movement on the principle of inertia, modern mechanics in effect made the distinction between natural and violent movements absurd, as inertia is precisely an indifference with respect to directions and variations in movement. Life is far removed from such an indifference to the conditions which are made for it; life is polarity. The simplest biological nutritive system of assimilation and excretion expresses a polarity. (ibid.)

This last point is crucial. Whenever we try to develop a strictly descriptive science of health and normality, we implicitly presuppose that certain states are deemed (un)desirable by, and thus normative for, the living being (NP, 222). Put differently, the reason why, say, a given physiological state is considered pathological is not because it statistically diverges from certain physiological averages, but because the living being itself shows us, by means of its behaviour, that these statistical divergences are *significant for it*. So, instead of being descriptive facts, health/disease and normality/pathology turn out to be *normative concepts*: “[M]edicine exists as the art of life because the human being himself [or, as he later adds, living beings in general] call[s] certain dreaded states or behaviors pathological (hence requiring avoidance or correction) relative to the dynamic polarity of life” (NP, 126).

By characterizing life as *dynamic polarity*, Canguilhem points to what he feels is “the fundamental fact that life is not indifferent to the conditions in which it is possible” (NP, 127): the organism’s engagement with its surrounding is never neutral but involves “preference and exclusion”, “propulsion and repulsion” (NP, 136). Because interactions with matter *matter* to the organism - they are literally a matter of life and death - *living* is a fundamentally *normative activity* (NP, 123, 126, 228). Canguilhem is adamant that the term ‘normative activity’ doesn’t stand solely for the human faculty of producing normative judgements, i.e., judgements that evaluate facts in light of norms, but rather refers to something much more fundamental, namely “that which establishes norms” (NP, 127). The organism’s engagements with its surrounding take place against the backdrop of “a permanent and essential vital need”, the *vital need for self-maintenance/–perseverance*, as expressed in “reactions of hedonic value or self-healing or self-restoring behaviour” (NP, 127).

From the point of view of mechanical science, anchored in statistical and descriptive analysis, there can be no difference between anomaly and abnormality (NP, 155): why are some statistical divergences (anomalies) considered normal, while others (pathologies) are considered ab-normal? According to Canguilhem, this question can be adequately addressed only if we admit of a *new point of view*:

That point of view is that of vital *normativity*. [...] It is because the anomaly has become pathological that it stimulates scientific study. The scientist, from his objective point of view, wants to see the anomaly as a mere statistical divergence, ignoring that the biologist’s scientific interest was stimulated by the normative divergence. (NP, 136)

Objective science, like Minerva’s owl, is always too late: it embarks on its investigative journey with the falling of the dusk, when the vital norms have already been established. Hence, although statistical constants investigated by the physiologist

have epistemic merit, they do so only if set against the backdrop of the organism's engagements with its milieu: "Taken separately, the living being and his [milieu] are not normal: it is their relationship that makes them such." (NP, 143). For it is only *when life has already asserted itself*, i.e., when the organism has established a suitable milieu for itself, that it is possible to undertake the study of physiological constants which are the *expression*, and *not the bearer*, of vital normativity (NP, 165, 171, 175).

We can see, then, that Merleau-Ponty and Canguilhem, although traversing different paths, arrive at a similar conclusion: in order to properly understand vital phenomena - behaviour and health, respectively - the notion of vital normativity requires that we consider the *whole mode of life of the organism*⁸ as expressed in-and-through *the history of its engagements with its milieu*. In the words of Paola Marrati and Todd Meyers: "[L]iving beings are not, and cannot, be indifferent to the conditions of their life, both the internal conditions of the organism [...] and the external conditions by the natural and social milieu in which they interact" (2008, ix-x). Just as it is inadequate to think of organismal behaviour as a mechanical process governed from the outside, so it is inadequate to think of organismal well-being (health) as being determinable solely from the inside; instead, the organism and its milieu constitute two aspects of an integrated whole.

4 Knowing Life: The Vital In-Between

Understanding life as normative (polarized) activity has far-reaching consequences for the knowledge of life, construed both as the "knowledge we have of life when we take it as an object" (*objective* dimension) and as the "knowledge that life itself produces" (*transcendental* dimension) (*ibid.*, ix). The truth of immodest vitalism, as we will see shortly, is thus reflected not only in *how life is cognized* but also in *how life cognizes (itself)*. In this segment, we will focus on life as the object of knowledge, leaving the question of life as the transcendental condition of knowledge for the next section.

The critique outlined above has underscored a profound ambiguity surrounding the notions of 'organism' and 'milieu', an ambiguity which has to be dispelled if life sciences are to acquire a more solid epistemological footing. Let us look at each of the two notions in turn, starting with 'organism'. In the mechanical-objectivist picture, the term 'organism' stands for "a segment of matter", "a sum of physical and chemical actions" (SB, 151). However, this conception is problematic for at least two reasons. Firstly, since all organismal processes are couched in physico-chemical terms, the normal/pathological distinction becomes meaningless (*ibid.*). For

⁸Note that this is exactly how Canguilhem and Merleau-Ponty, again following Goldstein, understand the term 'behaviour'. See for instance: "We have spoken on several occasions of the *modes of life*, preferring this expression in certain cases to the term *behavior* in order to emphasize better the fact that life is dynamic polarity." (NP, 205; my emphasis)

instance, the build-up of waste in the organism, which, if not prevented, leads to deterioration and ultimately death, still proceeds in accordance with physico-chemical laws (NP, 128–9). Physico-chemical regularities are oblivious to biological realities, as vividly expressed by Canguilhem’s music analogy: “[T]he states of an organism are like those found in music: the laws of acoustics are not broken in cacophony - this does not mean that all combinations of sounds are agreeable” (NP, 56).

Secondly, and relatedly, the mechanical point of view threatens to eliminate the very object it sets out to elucidate. In Merleau-Ponty’s words:

A total molecular analysis would dissolve the structure of the functions of the organism into the undivided mass of banal physical and chemical reactions. [...] In order to make a living organism reappear, starting from these reactions, one must trace lines of cleavage in them, choose points of view from which certain ensembles receive a common signification and appear, for example, as phenomena of ‘assimilation’ or as components of a ‘function of reproduction’; one must choose points of view from which certain sequences of events, until then submerged in a continuous becoming, are distinguished for the observer as ‘phases’ - growth, adulthood - of organic development. (SB, 152)

Or as phrased more colourfully by Canguilhem:

The laws of physics and chemistry do not vary according to health or disease. But to fail to admit that from a biological point of view, life differentiates between its states means condemning oneself to be even unable to distinguish food from excrement. Certainly a living being’s excrement can be food for another living being but not for him. What distinguishes food from excrement is not a physicochemical reality but a biological value. (NP, 220)

All partitive analysis implicitly presupposes another understanding of the organism, one that doesn’t conceive of it as a bundle of anatomico-physiological apparatuses, but as a “general attitude towards the world” (SB, 148) and a “center of actions which radiate over a ‘milieu’” (SB, 157). The organism, on this reading, is not a thing, but a *center of normative (polarized) activity* (NP, 131), and as such, engenders a *form of (rudimentary) intentionality*, a directedness-towards-the-milieu. This intentionality, however, is not of the order of intellection, but of affect and action; it is not related to notion, but to (e)motion.

Now, concerning the concept of ‘milieu’, it can be said that the ‘world’ inhabited by the organism is not the “system of mechanical, physical and chemical constants, made of invariants” (NP, 197); instead, it is its *Umwelt* - “a being-for-the-animal,” i.e., “a certain milieu characteristic of species” (SB, 125). In words of Canguilhem:

The living creature does not live among laws but among creatures and events which vary these laws. What holds up the bird is the branch and not the laws of elasticity. If we reduce the branch to the laws of elasticity, we must no longer speak of a bird, but of colloidal solutions. (NP, 197-8)

The milieu, then, is “a world of qualified objects” (NP, 198), a domain of what Merleau-Ponty calls *sens*. The word is particularly fitting, for it designates both ‘meaning’ and ‘direction’ (cf. PP, 229). Thus, while structures in the milieu have *significance* for the organism, this is not an intellectual-conceptual but a *motor-affective* significance: they excite and orient the organism’s interest, they function as solicitations and constraints, as demands and prohibitions. A given significative

structure is thus neither (*pace* mechanist) “physicochemical reality” devoid of value (NP, 220) nor (*pace* intellectualist) “logical signification” (PP, 7) with an “encyclopedic value” (NP, 98), but a biological reality imbued with “affective”, “expressive” and “vital value” (NP, 136; PP, 7).

With these new conceptions of ‘organism’ and ‘milieu’ in place, the *relation* between them needs to be recast as well. According to Merleau-Ponty, causal explanations - even of the bidirectional type - are ill-suited for the task at hand, for they fail to account for the *relations of significance* that are characteristic for the organism-milieu interactions. For instance, a cat which, in the first trial, is taught to pull the string attached to a piece of food with its paw, is able to pull it in the second trial with its teeth with no additional training (SB, 96). The two movements, while *physiologically different*, i.e., involving different neuromuscular pathways, share the *same significance*, i.e., involve performances that have the same meaning for the organism. In other words, behaviour does not conjoin effective reactions and individual stimuli, but expresses a dialectic (internal, meaningful) relationship between an *aptitude* and a *typical situation*, “which are like two poles of behavior and participate in the same structure” (SB, 161).

Reverting once again to the comparison of the physical and the living systems, we can now better appreciate the fact that, in the latter but not in the former, the aptitude and the situation, the organism and the milieu, *constitute a new integrated whole*:

In a physical form, dialectical relations between ‘parts’ stand out against a background (the environment) which is not part of the [...] form. In vital forms, both the organism and its milieu are ‘parts’ of one form. We perceive organisms as bound up with and engaged in their milieu as a place of relevance. (Sheredos 2017, 212)

The appropriate understanding of a given organism is predicated on our being acquainted with its vital norms as expressed in-and-through its interactions with the virtual milieu it lives in. This *qualitative (normative) aspect* of biological phenomena is ineradicable: “Quantity is quality denied, but not quality suppressed” (NP, 110). Thus, when a given state is described as ‘biological’ or ‘physiological’ by a scientist, it is, at least implicitly, evaluated as *positively qualified* by the organism in question (NP, 110–1). Quantitative inquiries are of course both useful and valid - both Merleau-Ponty (SB, 132) and Canguilhem (NP, 122) are adamant about that -, but they are so within the parameters implicitly set by the life form under scrutiny and intelligible to the life form performing the scrutiny.

5 Living Knowledge: From Technognosis to Metanormativity

Conceiving of life as polarised activity - as a dialectical *in-between* of the organism and its milieu - has another, and even more radical, corollary, for it casts fresh light on the fact that life appears in life sciences not only as an object (objective

dimension) but, being an enterprise undertaken by scientists who themselves are living beings, also as a subject (transcendental dimension). Here, we touch upon an issue that has caused quite a stir in (at least French and German) philosophy, namely the issue of a (seeming) conflict between knowledge and life. This issue is usually depicted as allowing for (again, seemingly) only two resolutions: either *eradicating life through knowledge* and reverting to “a crystalline (i.e., transparent and inert) intellectualism,” or *deriding knowledge through life* and plunging into “a foggy (at once active and muddled) mysticism” (TL, xvii). However, construing life as normative activity enables us to carve a *middle ground* between the two extremes, for it shifts our attention from the (seeming-but-non-existent) conflict between life and knowledge to the (difficult-but-tractable) tension between human being and its milieu (ibid.).

5.1 *In the Beginning Was the Deed: On Technognosis*

Can life be eradicated through knowledge? Let us start with an almost trivial observation that a scientist, being a living being himself, is, like all other living beings, actively involved in establishing and/or maintaining a dynamic equilibrium with his environment. As such, all his activities, scientific or otherwise, need to be situated against, and understood from, this general background. For instance, a physiologist examining the physiological constants and classifying them as (ab)normal,

does more - not less - than the strict work of science. He no longer considers life merely as a reality identical to itself but as polarized movement. Without knowing it, the physiologist no longer considers life with an indifferent eye, with the eye of a physicist studying matter; he considers life in his capacity as a living being through whom life, in a certain sense, also passes. (NP, 222)

This has at least two significant implications. Firstly, and crucially, it follows that *life grounds, and calls forth, knowledge*. Thus, it is “life’s setbacks” (ibid.) - the *disequilibria* between the human being and his environment - that pave the way to cognition in general and scientific inquiry in particular. Canguilhem, for instance, underlines the epistemic import of *disease* for (life) sciences:

Disease is the source of the speculative attention which life attaches to life by means of man. If health is life in the silence of the organs, then, strictly speaking, there is no science of health. Health is organic innocence. It must be lost, like all innocence, so that knowledge may be possible. Physiology is like all science, which, as Aristotle says, proceeds from wonder. But the truly *vital wonder* is the anguish caused by disease. (NP, 100-1; my emphasis)

This notion can be generalized. It is when the vital in-between is disrupted, that reflective inquiry, begotten from vital wonder, comes to the fore. Thus, if considered from the genealogical perspective, objective knowledge cannot be value-free; instead, it is *poli-valent (meta-normative)* in the sense that it allows transitions between different normative frameworks (more on this below).

The second implication is that the relation between technology and science becomes much more nuanced than the standard view would have it. Usually, technology is construed as a practical application of science: we need to know in order to be able to act (NP, 99, 104–5). However, such a view errs in at least two respects. To begin with, it ignores the constitutive role of technology in the epistemic enterprise. Technology is not simply “a docile servant carrying out intangible orders,” but rather an “advisor and animator”: it confronts us with concrete problems and urges us to tackle them without paying heed to the theoretical solutions which will eventually spring forth out of these encounters (NP, 101; cf. 105).

Secondly, by putting the cart (science) before the horse (technology), the classical approach severs life from knowledge, transposing it, in theory if not in practice, into the crystalline realm of intellectualism, in which disembodied gaze hovers over the mechanical world. However, it is possible to bridge this noetic chasm if technology is considered not as a product of science, but as a complexification and elaboration of

vital impulses at whose service it tries to place systematic knowledge. [...] All human technique, including that of life, is set within life, that is, within an activity of information and assimilation of material. It is not because human technique is normative that vital technique is judged such by comparison. Because life is activity of information and assimilation it is the root of all technical activity. (ibid.)

If knowledge is to be situated into the framework of life and action, more emphasis needs to be given to its *implicit*, *practical*, and *technical aspects*. That is to say, the ideal of *episteme* needs to be set in close(r) relation to the facticity of “praktognosia” (PP, 162), the *logos* furnished by the behavioural complexes of our biological bodies and their numerous culturo-technological extensions (habits, tools, institutions, etc.). If we overlook this constitutive relevance of *technognosis*, we are likely to misapprehend the domain of mind and thought.

5.2 *Minded Life: On Hypervirtuality and Metanormativity*

However, does this mean that science can be simply reduced to vital polarity, that mind is ultimately nothing but an extension of life? And if so, haven’t we been impaled on the other horn of dichotomy, namely that of ‘foggy mysticism’? It is true that Canguilhem and Merleau-Ponty both argue that (human) knowledge has to be understood against the backdrop of (vital) normativity, which makes it, first and foremost, a *new mode of behaviour*, “a new equilibrium with the world, a new form of organization of [human] life” (LT, xvii). However, this does not preclude a *qualitative* difference between life and mind:

An organism’s behavior can be in continuity with previous behaviors and still be another behavior. The progressiveness of an advent does not exclude the originality of an event. (NP, 87)?

To get a better handle on this delicate issue, let us look at Merleau-Ponty's account of the relation between what he calls the "vital order" (life) and the "human order" (mind). His contention is that, on the superficial level, the human order may look simply as a *variation* of the vital order: just as, say, animals live in their unique *organic* milieus, so human beings live in their admittedly more diversified, but structurally similar, *culturo-social* milieus:

If life is the manifestation of an 'interior' in the 'exterior,' [human] consciousness is nothing at first but the projection onto the world of a new 'milieu' - irreducible to the preceding ones, it is true - and humanity nothing but a new species of animal. (SB, 162)

However, and crucially:

[T]his lived consciousness does not exhaust the human dialectic. What defines man is not the capacity to create a second nature - economic, social or cultural - beyond biological nature; it is rather the capacity of going beyond created structures in order to create others. (SB, 175)

Thus, the difference between the two orders lies not so much in the greater complexity of human *Umwelten* but rather in the distinctly human ability to *transcend and modify* these selfsame *Umwelten*. According to Merleau-Ponty, what is characteristic of human behaviour and seems to be lacking in the comportment of non-human animals, is a certain *multiplicity and mobility of perspective*, which he expounds in his commentaries on Wolfgang Köhler's famous experiments on chimpanzees.⁹

In one set of experiments, chimpanzees, when confronted with a puzzle, had grave difficulties in alternating their viewpoint. For instance, having learned how to use a rod to obtain a piece of fruit, a chimpanzee left alone with a dried bush was unable to use its branches for the same purpose: "The tree branch as a stimulus is not even the equivalent of a rod, and the spatial and mechanical properties which permit it to assume this function are not immediately accessible to animal behavior" (SB, 113–4). Similarly, the animal did not use a branch as a tool - even if it had learned to do so in the preceding trials - as long as another monkey was sitting on it: "It leans against it; thus it cannot be said that it has not seen it; but it remains for him a means of support or rest; it cannot become an instrument" (SB, 114).

What are we to make of this? In Merleau-Ponty's view, the rod is not given to the chimpanzee in the same way as it is to the human observer, that is, as a *discrete thing* that can be seen from different perspectives and manipulated in different ways; instead, it is "invested with a 'functional value' which depends on the effective composition of the field" (SB, 116–7). More specifically, the situation in which the animal finds itself is given to it as a structured whole, in which the significance of each aspect is co-specified with the significance of all other aspects. Hence, if one segment of the situation changes, so do all the others. This is why, for the chimp, the branch-as-seat and the branch-as-instrument are not two aspects of the same thing, but literally *two different things* (SB, 145). Further, the motor-affective significance of the situation is predicated on the motor-affective aptitudes of the animal; it "is not

⁹For reasons of space, I provide but a brief overview of these experiments; for a more thorough and interpretatively brilliant account see Moss Brender 2017.

an object of knowledge for the chimp [...] Rather, the chimp lives its situation as an immediate call to action, an imperative or compulsion that cannot be denied” (Moss Brender 2017, 145).

In human beings, on the other hand, this motor-affective dynamism undergoes an important transformation, brought about by what Merleau-Ponty calls “multiplicity of perspective” (SB, 122). In words of Moss Brender:

Like the chimpanzee, we experience our situation as Gestalt, an organized and oriented whole. But unlike the chimp, we are able to reorganize or reorient this whole, to ‘Gestalt-shift’ more or less at will between different possible configurations of the situation. (Moss Brender 2017, 146).

There is, then, a certain *distance* or *remove* from the motor-affective significance of a situation, which allows us to resist its imminent demands, to vary our perspective, and finally, to thematize it (more on this below).

The second example is even more telling. In one experiment, Köhler placed a piece of fruit behind a grill and taught the chimpanzee to use a stick to pull it within its reach. In another trial, he placed a three-sided frame around the fruit, whose open side was facing away from the animal. So, to get to the fruit, the chimp had to first push the fruit away from itself, then move it around the frame, and finally pull it towards itself. However, Köhler observed that the chimp had great difficulty in completing the task and was stubbornly trying to pull the fruit towards itself. This may strike us as odd for, while the chimp had enormous difficulties in moving the fruit along the required path, it is clear that it could have easily retraced the same route with its own body if the conditions allowed it to do so (SB, 117).

What to us look like two identical paths - from A to B and from B to A - are apparently not identical for the chimpanzee. Again, what are we to make of this? Merleau-Ponty’s contention is that space for the chimp is not *geometric* but *corporeal*, i.e., space that has a “null-point”, namely the chimp’s own body (SB, 117). For this reason, the chimpanzee “does not experience itself as an object moving through a fixed landscape; rather, it is the landscape that shifts around the animal in response to animal’s movements” (Moss Brender 2017, 148). In other words, movement for the chimp does not mean a *change of position* (a change *in* space) but rather a *change of situation* (a change *of* space).

To get a better understanding as to how this differs from human perception, let us consider what it actually takes to successfully solve the puzzle in question. To begin with, it requires that one dissociates oneself from one’s embodied perspective and “take(s) up the object’s point of view” (ibid., 149). Further, it requires that one sees oneself - one’s own body - as yet another object, which stands in multiple relations with other objects. And finally, it requires the ability to translate a motor sequence that would be carried from the *object’s* point of view into a visual sequence that would be seen from *our current* point of view, i.e., to “transcribe a kinetic melody into a visual [sequence] [...] establishing relations of reciprocal correspondence and mutual expression between them” (SB, 118). In short, the solution to the problem requires “mobility of perspective” (Moss Brender 2017, 149), which allows one to not only alternate perspectives from the same point of view (i.e., multiplicity of

perspective) but to also *alternate the point of view itself* and imagine the action-to-be-taken “*from a perspective outside of the movement itself*” (ibid., 151; emphasis in the original). Note that this is not to say that human beings no longer have a center, but that, in our case, the center is *mobile*, and that we are able “to take up a virtual point of view without actually moving our body to that location” (ibid., 149).

What is of particular importance is that these two abilities - the multiplicity and mobility of perspective - allow for what Merleau-Ponty calls *symbolic behaviour*, i.e., a mode of behaviour in which behaviour itself becomes “the proper theme of activity” (SB, 103). The task of performing a detour in the example above requires that we “trace by our very gesture the symbol of the movement which we would have to make if we were in its place” (SB, 118). Put differently, to execute a detour requires establishing correspondences between various patterns of behaviour executed from various centers: the (actual) gesture I perform with my hand when I move the fruit along the relevant path *expresses the same significance* as the (virtual) movement of my body traversing the selfsame path. Symbolic behaviour thus stands for the ability to take up a *common significance* of various - *actual* or *virtual* - behavioural structures, and express it in (other) gestures, pictures, or words; these then stand as *symbols* or “structure(s) of structures,” i.e., as structures expressing structural correspondences between various sensorimotor patterns (cf. Moss Brender 2017, 152).

The capacity of establishing “relations between relations” (SB, 118) is at the core of what we call *reason(ing)*. But note, firstly, that while not identical with vital behaviour, reason(ing) still is, essentially, a *form of behaviour*, a *new mode of being*; and secondly, that once constituted, it is *not* simply a contingent addition to former modes of behaviour, but rather a *novel structuration*, a transformation of the vital organisation *in its entirety*:

Mind is not a specific difference which would be added to vital or psychological being in order to constitute a man. Man is not a rational animal. The appearance of reason and mind does not leave intact a sphere of self-enclosed instincts in man. [...] But if the alleged instincts of man do not exist apart from the mental dialectic, correlatively, this dialectic is not conceivable outside of the concrete situations in which it is embodied. (SB, 181)

Non-human living beings are embedded in their virtual domains of significance, but these domains are fixed by each organism’s organization - the “a priori of the species” (SB, 122) - and are (almost) always given from a single perspective: “The animal *lives* in the meaning of its immediate situation without *perceiving* this meaning as such.” (Moss Brender 2017, 146; emphasis in the original) In the case of the human mind, this vital dynamism is sublimated into a new structure: significance is not only *enacted* but also *thematized*. More specifically, human bodily attitudes are open to regular modification, whereby motor-affective significances in the human milieu also become modified. This is why, instead of “aptitudes,” Merleau-Ponty uses the Hegelian term “work,” which denotes “the ensemble of activities by which man transforms physical and living nature” (SB, 162). Work opens up not only the possibility that *something* can have more than one meaning, but also a realization that this shift in meaning corresponds to the alteration of the (bodily) attitude taken

by *someone*: “It is only at the level of symbolic conduct [...] that, instead of seeking to insinuate his stubborn norms, the subject of behavior ‘de-realizes himself’ and becomes a genuine alter ego.” (SB, 126).

Let us now, by way of summary, underline three main points that emerge out of these reflections. Firstly, a non-human living being is capable of *experiencing* in the sense of establishing meaningful relationships between physico-chemical stimuli and shaping them into structured wholes, its *Um-welt*; a human being, on the other hand, is capable of *reasoning* in the sense of establishing “relation(s) between relations” (SB, 118), and thus recognizing, beyond its current milieu, a *Welt* (SB, 176), “universe” (SB, 176) or “world of things” (SB, 175) - a virtual framework of constancies underpinning all possible body-situation alterations. Secondly, life is intrinsically *normative*, i.e., it is a polarized (non-neutral) activity whose dynamic equilibrium pertains not to physico-chemical conditions but “to *virtual* conditions which the system itself brings into existence” (SB, 145; our emphasis); mind, on the other hand, can be said to be intrinsically *metanormative*, i.e., it is a polarized (non-neutral) activity that can thematize and, to a certain degree, modify its virtual conditions of possibility. Finally, while non-human beings live in a domain of virtuality, human beings can be said to live in a *domain of hypervirtuality*: they live among meaningful structures of the second order, among *symbols* and *things*. Human beings can create, destroy, and re-create different virtual domains - the worlds of myth, art, science, etc.; put differently, they can enact multifarious virtual habitats, the outermost horizon of which - the virtual domain in which perspectives, constitutive of other virtual domains, coalesce - is what is called the ‘objective world’.

We can now better understand what was said at the beginning of this section, namely that the position defended by Merleau-Ponty and Canguilhem transforms the question of life *vs.* knowledge into that of organism *vs.* milieu:

Thought is nothing but a disentangling of man from the world that permits us to retreat from, to interrogate, and to doubt (to think is to weigh, etc.) in the face of obstacles that arise. [...] It is not true that knowledge destroys life. Rather, knowledge undoes the experience of life, seeking to analyze its failures so as to abstract from it both a rationale for prudence (sapience, science, etc.) and, eventually, laws for success, in order to help man remake what life has made without him, in him, or outside of him. (TL, xvii)

The relation of mind to life is the same as that of life to matter: it is a *novel structuration*, where the dialectical pair ‘aptitude-situation’ (normativity-virtuality) is restructured into the dialectical pair ‘work-world’ (metanormativity-hypervirtuality). What is crucial, however, is that, in this view, the originality of life (*a propos* matter) and mind (*a propos* life) is not one of *addition* but one of *transformation*, one of “a [wholesale] retaking and a ‘new’ structuration” of the preceding structural dynamics (SB, 184). Mind, for instance, is neither a non-material add-on to, nor a mere quantitative complexification of, life; instead, it is a new dynamic equilibrium, a qualitatively novel integrated whole. According to Merleau-Ponty, when it comes to such structural shifts (from ‘matter’ to ‘life’ and ‘life’ to ‘mind’), “[i]t is not a question of two *de facto* orders external to each other, but of two types of relations, the second of which integrates the first” (SB, 181). This sits well with Canguilhem’s

claim that *quantitative continuity* doesn't preclude *qualitative discontinuity*: "The progressiveness of an advent does not exclude the originality of an event" (NP, 87).

It is not so much that, in living beings, physical phenomena are supplanted with novel vital phenomena, but rather that, after achieving a certain level of complexity, the behavioural pattern characteristic of physical things undergoes a wholesale transformation, whereby all constitutive processes acquire a new significance. And this, as we saw earlier, includes both continuity and discontinuity: the higher order "eliminates the preceding one as an isolated moment", yet it also "uses and sublimates it", "conserves and integrates it". There is, in short, a "double aspect" to the said relation, for it "both liberate[s] the higher from the lower and found[s] the former on the latter" (SB, 207, 208).

6 Conclusion: Life's Fecundity and Ouroboric Thought

Let us now return to the question of vitalism. We have seen that both Canguilhem and Merleau-Ponty agree that vitalism, when cast in the scientific mould, is false, even blatantly so; yet it is still a motivated error, one that "rest[s] on an authentic phenomenon" (SB, 216). There is more to vitalism than meets the scientific eye, which is why, as Canguilhem points out, it cannot be placed on the same footing or be refuted in the same way as, say, phlogiston or geocentrism (AV, 60–1). But what is this *more* that separates vitalism from the aberrant theories of old? What is the authentic phenomenon which vitalism so immodestly expresses?

The answer I have tried to sketch points in the direction of vital normativity. The latter, as we have seen, manifests itself in (at least) two aspects that are central to vitalism. The first aspect is the appreciation for *the generative and spontaneous dimension of life*, for the unexpected leaps, shifts, and transformations that characterize organic dynamism:

It is certain that, for vitalists, the fundamental biological phenomenon [...] is the phenomenon of generation. A vitalist [...] is a man who is led to meditate on the problems of life more by the contemplation of an egg than by handling of a winch or iron bellows. (AV, 64)

The normativity of life manifests itself as *life's fecundity* (AV, 66–7), as life's capacity of both establishing *and transcending* new norms and thereby new life-forms, in relation to which (objective) knowledge always alights too late:

Life is the formation of forms; knowledge is the analysis of in-formed matter. It is normal that an analysis could never explain a formation and that one loses sight of the originality of forms when one sees them only as results whose causes or components are to be determined. Because they are totalities whose sense resides in their tendency to realize themselves as such in the course of their confrontation with their milieu, living forms can be grasped in a vision, never by a division. (TL, xix)

The second, and in my opinion more important aspect, is best approached through Canguilhem's claim that vitalism "is first and foremost a *demand* [...] a] need to keep the question of the sense of the relation between life and science open" (TL:

ix; my emphasis). There is, as we have seen, an ineradicable recursivity in all reflection on life: it is the impetus of vital normativity that calls forth knowledge, which, through its techniques and practices, recursively alters the dynamics of vital normativity. This idea, if taken seriously, has important implications on how we understand our epistemic practices and urges us to make conceptual space for a more dynamic type of reflection, which I would like to call *ouroboric thought*. We find references to ouroboric thought, under different labels, in both thinkers. Canguilhem speaks of *reasonable rationalism*, a rationalism that is able to “incorporate the conditions of its practice” by recognizing “the originality of life,” and therefore acknowledge that “the thought of the living” ultimately takes “from living the idea of the living” (TL, xx). Similarly, Merleau-Ponty speaks of *radical reflection* (PP, 61–3) or *hyper-reflection* (VI, 38, 46), i.e., reflection that “knows itself as as reflection-on-an-unreflective experience” (PP, 72), and that “elucidate[s] the unreflective view which it supersedes and show[s] the possibility of this latter, in order to comprehend itself as a beginning” (PP, 73).

The crucial point is the same: Since we, as cognizers of life, at the same time live the lives of cognizers, our reflection, like the mythical snake of Ouroboros, must encompass not only its own embeddedness in the prereflective dynamism of life, but also how, in and through its operations, it modifies that selfsame dynamism in which it is embedded, thus altering both its conditions of possibility and its subsequent operations - and so on, indefinitely. It is here, I think, that the truth of immodest vitalism lies. Put simply, it is the *truth of vital wonder* (NP, 101), the truth of an existential blindspot of all our epistemic endeavours; it is the recognition that “one must know how to cede a place to the irrational, even and especially when one wants to defend rationalism” (MO, 95), that one must make room for “the darkness needed in the theatre to show up the performance” (PP, 115). Hence its epistemic immodesty, hence its existential impudence.

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Abbreviations

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