

The Critique of Biology Implied by
The Fundamental Concepts Of Metaphysics

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In what follows, I will offer a reading of a critical program that follows from Heidegger's conception of animal life developed in the Winter Semester 1929–30 lecture course *The Fundamental Concepts of Metaphysics: World, Finitude, Solitude*. It is not my aim, however, to embark on a study of the intermediary status of this conception – and the role it plays – in the lecture course. I will primarily deal with certain possible consequences for the constitution of biological objects of inquiry following from the course, and not with a reconstruction of its structural whole. To be sure, a “critique of biology” is not an explicitly formulated idea in the text published in the volumes 29/30 of the *Gesamtausgabe*. It is an idea that can be derived from Heidegger's way of elucidating the ontological concept of world only by analyzing the sense in which “the animal has and does not have world.” Seen from a broader perspective, a critique of basic biological concepts that supposedly are inherited from – or are at least consonant with – the metaphysical tradition which Heidegger tries to subject to *Destruktion* is consistent with his “path of thinking.” Yet I should clearly state that it is beyond any doubt that Heidegger was never engaged in an attempt to contribute to a “better biology,” provided that such an improvement can be spelled out in epistemological, methodological

or logical terms. A “rational reconstruction” of biological theories was never on the agenda of Heidegger’s preoccupation with the distinctiveness of the living.

According to the central thesis of the lecture course, man is world-forming, whereas the animal is poor in world. This is a metaphysical thesis that has to be worked out in traditional philosophical terms, but at the same time also in a (phenomenological) manner that calls into question the tradition determining the meanings of these terms. Thus, Heidegger sets the post-metaphysical task of overcoming traditional interpretations of fundamental metaphysical concepts. (The metaphysical tradition should be overcome by recasting its fundamental concepts.) More specifically, world-formation is addressed as the ground of the possibility for having *logos*, granted that one can proceed “from the unitary structure of the $\lambda\acute{o}\gamma\omicron\varsigma$ back into the essence of man” (GA 29/30: 486/335). Apophantic *logos* is regarded in terms of the concealed essence of man. Yet *Being and Time* demonstrates that the apophantic *as* is grounded upon the hermeneutic *as* which provides the “*as* structure” of world-formation. It is this structure – or better fore-structure – that enables the revealing and concealing of what can potentially be predicated and expressed by means of apophantic *logos*.

Addressing animal behavior as constantly proceeding in a “captivated and taken manner” brings into focus the way of being which lacks the “*as* structure.” In the lecture course’s scenario, world-formation based on human beings’ free holding themselves toward the “pre-predicative manifestness” of world replaces the captivated behavior, which – in taking place within the sphere of instinctual drives – becomes disinhibited while remaining captivated. Thus considered, what gets replaced is the non-human biological lifeform as “absorbed in its encircling ring.” Since world is the total manifestness of “beings *as* such” (in the sense of both the hermeneutic and the predicative *as*), the focus in studying how man is world-forming lies with the *as* which is conceived to be the distinctive feature of man’s openness for being-in-the-world. As belonging to world-formation, the hermeneutic

as structure fore-structures man's ability to predicate and articulate in a sentential manner. Following the tenet of *Being and Time* that interpretive understanding is always attuned, Heidegger adds a further dimension to this picture: The *as* structure cannot be disentangled from the "fundamental attunements" of man. Thus, world-formation is indispensably "attuned." This claim is exemplified by Heidegger's detailed interpretation of boredom – the most extended treatment of a mood one can find in his whole corpus. But the interpretation of this attunement also has – though indirect – relevance to the treatment of the animal form of life. Let me briefly clarify the issue of this relevance.

Heidegger makes the case that the "fundamental emptiness" of human Dasein is what bores humans. This emptiness is provoked by the absence of any essential oppressiveness in the totality of human existence. According to his argument, the (hidden) absence of essential oppressiveness in Dasein implies that the emptiness of human existence makes humans capable of believing that they should concern themselves "only with learned competencies that can be instilled... Strength and power, however, can never be replaced by the accumulation of learned competencies" (GA 29/30: 245/164). This statement expresses the final moment of Heidegger's analysis of "profound boredom." The analysis makes clear that profound boredom trans-subjectively transcends individual emotionality and manifests itself as an ontologically pertinent phenomenon. By implication, this attunement means "being delivered over to beings' telling refusal to themselves as a whole" (GA 29/30: 243/162). It is the transcendence of individual emotionality that ontologically makes the attunement of boredom the "essential absence of oppressiveness" and "emptiness." In contrast to the individualistic experiences of particular emotions, the attunements always keep a trans-subjective character. Dasein as world-forming, thrown projection is also thrown into trans-subjective attunements. Can one ascribe attuned behavior also to the animal form of life? I will return to this question at the end of the paper where at stake will be the basic deficiency of Heidegger's conception of animal life – the refusal to take the kind of *Befindlichkeit* distinguishing the animal way of being into consideration.¹

My reading of the “biological part” of the lecture course will be guided by a “productive misunderstanding” of the accents set in the text. To reiterate, it is beyond any doubt that the critical analysis of how traditional metaphysics is related to the basic concepts of holistic disciplines like ethology and ecology was not on Heidegger’s agenda. Moreover, his skepticism towards critical projects of “philosophical biology” – even when they were phenomenologically inspired – is well documented, and goes back (at least) to the period of his Cologne talks (1927). But regardless of the intentions behind the course, Heidegger offers an elaborated conception of the living that potentially leads (1) to a substantial revision of basic theoretical concepts of biology, and more importantly, (2) to alternative ways of theorizing in basic biological disciplines. It is my contention that these consequences for a “critique of biology” ought to be studied in their own right, independently of the fact that Heidegger was never interested in developing an alternative (“ontologically grounded”) biological science. An additional argument for laying emphasis on the biological aspects of the lecture course concerns an important – but usually neglected – development in Heidegger’s views about the specificity of scientific (objectifying) inquiry. This development, which will be at issue in the second part of the paper, consists in a significant revision and extension of the existential conception of science developed in *Being and Time*. In the remainder, I will not be interested in whether Heidegger’s ideas about the ontological specificity of animal life are consistent with contemporary biological theories. It is not my aim to evaluate these ideas “from a scientific point of view.” I will exclusively be preoccupied with a depiction of the constitution of biological objects of inquiry that essentially draws on his extended existential conception of science.

What I am going to suggest is not only based on a productive misunderstanding of the ideas worked out in Heidegger’s lecture course. To a great extent, my considerations follow a direction that was constantly rejected by Heidegger – the integration of the ontic-ontological difference with strategies of scientific conceptualization. Roughly, a phenomenological and ontological critique of biology provides the

opportunity for a (critical) biological science that is not only capable of doing research, but also capable of “thinking” why and how it constitutes (or prevents constituting) certain objects of inquiry.² Starting with the “hermeneutics of facticity,” Heidegger never abandoned the insistence on a strong dichotomy between science’s ontic questioning and the ontological task of phenomenology that consists in revealing the meaning of being. However, I will try to show that there is in the *Fundamental Concepts* a hidden tendency to reformulate the science of the living in a manner that would allow the constitution of ontic (theoretically envisioned empirical) objects that can directly be interpreted in terms of phenomenological ontology. The reflexive integration of the ontic-ontological difference with kinds of conceptualization in biology would enable research programs that can master their hermeneutic situations of constituting relevant objects of inquiry.

I. PHILOSOPHY OF BIOLOGY, PHILOSOPHICAL BIOLOGY, AND CRITIQUE OF BIOLOGY

In 1929, the same year in which Heidegger began to deliver the lecture course *The Fundamental Concepts of Metaphysics* at the University of Freiburg, Joseph Henry Woodger (a famous embryologist) published the book *Biological Principles*. Leading figures in science like Joseph Needham and Conrad H. Waddington, but also philosophers of the caliber of Karl Popper, immediately recognized this excellent and highly illuminating book as the first genuine work in the philosophy of biology. Woodger was a champion of axiomatic theorizing. He developed the philosophical study of biology as a quest for metaphysical, epistemological and methodological tenets along the lines of this kind of theorizing. Written in a succinct and elegant style, Woodger’s book set the standard for what at the dawn of logical empiricism was called the “rational reconstruction” of biological knowledge in the analytical philosophy of science. There is no indication that Heidegger was acquainted with Woodger’s book. This fact notwithstanding, his 1929–30 lecture course provides enough arguments that discard the type of philosophy of biology advanced in *Biological Principles*.

In light of these arguments, the quest for making explicit tacit assumptions in the established theories – Woodger’s main philosophical preoccupation – would imply a vindication of bad prejudices concerning the specificity of biological life. Basically, these prejudices – grounding notorious controversies such as those between mechanism and vitalism, structure versus function, preformism versus epigenesis, and genetic versus epigenetic research programs – are deeply rooted in the metaphysics of presence, and making them explicit axioms would not reform but rather would deform biology. For Heidegger, the reconstruction of scientific theories by means of logical analysis is a gesture of affirming the metaphysical tradition he tries to overcome. The tenor of his denunciation of any philosophy of science based on such an analysis is unequivocal: The task consists not in unearthing the assumptions behind, say, the dichotomy between mechanism and vitalism for the sake of achieving a strong axiomatization of such theories, but in debunking these assumptions as belonging to the tradition in which the question about the meaning of being has been forgotten.³ By discarding any appeal to conceptual dichotomies rooted in the metaphysics of presence, the ontologically reformulated biological science – that is, the outcome of the phenomenological critique of biology – should be guided (in its constitution of objects of inquiry) by a fore-having, fore-seeing, and fore-conception that diverge from those of the objectifying theories.

Roughly, Heidegger’s ideas imply a critique of biology that problematizes and eventually unsettles the groundedness of biology (as a theoretical conceptualization of life) in the metaphysics of presence. He epitomizes the agenda of such a critique by picking out phenomena of which “biology knows absolutely nothing” (GA 29/30: 393/271). A pertinent example is the class of phenomena related to the specificity of the animal’s way of being as characterized by “poverty and deprivation of world.” The existing biological disciplines – from physiology and classical zoology to ecology and ethology – are not able to think, for instance, “captivation” (*Benommenheit*) as the condition of the possibility of poverty in world, since they lack proper ontological assumptions. Captivation stands first and foremost for the instinctual determinateness of the

animal organism within its environment that is adequate to meet the animal's ethological needs. The concept of captivity is a classical case in point for a concept that should be defined by taking into consideration a phenomenological view of what world is. The purely biological meaning of instinctual determinateness within a specific environment should be supplied with a phenomenological meaning of the animal's way of being characterized by having and not-having world. In another formulation, the biological conceptualization of animal behavior is to be complemented by a phenomenological account of how the animal has – within the environment of its ethological needs – accessibility to a limited number of entities, but nevertheless does not have – in the sense of not being able to apprehend – entities that are ready-to-hand or present-at-hand. An ontologically reformulated biology – so the argument following from Heidegger's considerations goes – would be capable of studying how captivity as a general characteristic of the organismic constitution of the animal is the condition of the possibility of “a not-having of world in the having of openness” for whatever satisfies the animal's ethological needs (or whatever “disinhibits its drives”).

Prima facie the critique of biology under scrutiny bears a resemblance to Marx's critique of political economy, de Saussure's critique of linguistics, or Garfinkel's critique of objectivist sociology. However, such analogies are not very instructive. To be sure, the critique of biology must be examined against the background of Heidegger's hermeneutic critique of scientific objectification in general, which, in its turn, is a step in overcoming the hypostatization of the copula “is” and the de-privileging of predication (and formal logic) conceived as the source of the metaphysics of presence.⁴ To stress again, the critical examination of biological concepts precludes the analysis of apophantic *logos* within the overall lecture course's structure. The logical operations as well as the syntheses achieved through sentential predication are enabled by the freedom of choosing possibilities within the world, which is already revealed before any predication takes place. In dealing with the environmental enclosure of animal life, the critical analysis of biological views negatively defines the ontological conditions for having

a revealed world in which the *logos* can operate. This is why the methodological dimension of this analysis – as I will try to show in what follows – has a greater significance than an attempt at detailing the picture of scientific objectification as depicted in various lectures from Heidegger’s Marburg period.⁵

The reading of Heidegger’s conceptualization of animal, organism, and life in *The Fundamental Concepts* in terms of a possible critique of biology essentially differs from two highly influential readings of this conceptualization, suggested by Jacques Derrida and Giorgio Agamben. Roughly, in contrast to these readings, which are seminal for the post-metaphysical reception of the lecture course, my reading is guided only by my interest in the consequences Heidegger’s conception has for (what I will call) the *characteristic hermeneutic situations* in certain domains of biological inquiry. This restrictedness of my interest notwithstanding, several aspects of Derrida’s and Agamben’s approaches to the lecture course are of prime importance for what follows. The point is that Derrida and Agamben – however different their analyses are – allude to the need to make the temporalization of the animal’s life a theme in its own right.

Derrida explicitly deals with the claim that “biological and zoological sciences presuppose access to the essence of the animal creature, they do not open up that access.”⁶ He hints at Heidegger’s intention to formulate the three theses about worldlessness, poverty in world, and world-formation as scientifically pertinent metaphysical theses. The access to the metaphysical dimension they open is closed for scientific programs that are entirely committed to ontic objectification. However, as a non-quantitative relation to the entities of the world, the animal’s way of being as poverty (privation) of world permits conceptualization in terms of an ontologically reformulated biological research program. Derrida does not *expressis verbis* support such a conclusion. But his analysis of Heidegger’s view of animality invites a special kind of biological inquiry that would thematize the animal-human caesura in a non-reificationist and non-dichotomous manner. Derrida focuses on the special character of potentiality involved in the animal’s being-able-to-have a

world. In so doing, he criticizes Heidegger's "awkward description" of the animal's behavioral absorption. In Derrida's argument, one "cannot say that the animal is closed to the entity. It is closed to the very opening of the entity. It does not have access to the difference between the open and the closed."⁷ Derrida calls into question what is no more and no less than the absolute limit Heidegger draws between the living creature and human Dasein. At the same time, his analysis raises the question as to whether the caesura taking place between animal behavior and existence can be thematized by avoiding any kind of humanist teleology. It is my contention that an ontologically reformulated biological research program is indispensable for properly addressing all facets of this question.⁸

What becomes of the animality of man in post-history is a guiding question of Agamben's work. In drawing insightful parallels between the view of the living being elaborated in the 1929–30 lecture course and Heidegger's later distinction between the earth and the world, he argues that the human being is the place of ceaseless divisions and caesurae. Agamben places his reading of the course's biological part in the context of criticizing the "anthropological machine": The older version of this machine works through the humanization of animality (an outside like slaves and barbarians is incorporated into human nature), whereas the modern version produces the outside through the politics of animalizing the human. The modern anthropological machine functions "by excluding as not (yet) human an already human being from itself, that is, by animalizing the human by isolating the nonhuman within the human."⁹ For Agamben, studying this machine is of prime importance, since its functioning grounds any kind of modern biopolitics (including its most brutal forms in 20th-century totalitarian regimes, making the perfect *conditio inhumana* into reality). The task of comprehending how the anthropological machine works under the conditions when "the post-historical animals of the species *Homo sapiens*" are experiencing new kinds of dramatic instability is now more important than ever. Coping with this task is a prerequisite for becoming able to stop the machine in the time of post-humanism. A biological

inquiry that is able to scrutinize in its own terms the ways in which the anthropological machine works seems to be indispensable for opposing the politically motivated reduction of life to biopolitics.¹⁰

Vis-à-vis the proper contextualization of the critique of biology in Heidegger's work, the conclusion that in the 1929–30 course he seeks to ground the contemporary biological theory of animal life philosophically cannot be accepted without reservation. William McNeill's otherwise superb comments suggest that Heidegger tries to enrich the existing theoretical frameworks by showing the ontological presuppositions concerning the concept of biological life.¹¹ McNeill implies that what biology presupposes can be further "painlessly" grounded in a phenomenological theory of the experience of world. If this were the case, then – to take up my starting point – Heidegger and Woodger would turn out to be close bedfellows. Their programs would have differed only with regard to the kind of grounding analysis: Instead of Woodger's logical analysis of biological knowledge, Heidegger's phenomenological analysis of the biological objects of inquiry should provide the ultimate grounds of theorizing.

On the conception I am advocating, Heidegger is not looking for a deeper grounding of the *existing* biological theories. Overcoming biological science's intrinsic commitment to the metaphysical tradition requires a kind of (post-metaphysical) grounding that substantially revises the conceptual structures of the existing theories. Such a revision is unachievable without scenarios of theorizing that invoke the ontic-ontological difference when constituting proper objects of inquiry.¹² According to a motif mentioned in the introduction of this paper, Heidegger's approach to animal life assumes a conceptualization in which ontic objectification and phenomenological interpretation should be involved in a relation of mutual reinforcement. To be sure, the complementary cooperation of procedural objectification and phenomenological interpretation within biological inquiry might be construed as a kind of grounding. (Heidegger himself often speaks of such a grounding.) Yet, when applied to a kind of scientific research, the central connotation of the term "grounding" is to legitimize an established status

quo by revealing its roots. With respect to biology, such a grounding is by no means Heidegger's intention. He aims at a radical reformulation of biological science's fore-having, fore-seeing, and fore-grasping of the objects of inquiry, i.e. a reformulation of the hermeneutic situation in the constitution of such objects. Thus, Heidegger's phenomenological grounding of biological inquiry consists in defining a new hermeneutic situation of conceptualizing biological life-forms.

The ambiguity of Heidegger's position towards the need of the ontic-ontological difference in conceptually coping with the specificity of the living comes to the surface when he displays his discontent with the projects for philosophical anthropology and philosophical biology. In the programs of philosophical anthropology (from the late 1920s), one may find various versions of the so-called "compensatory thesis": Supra-biological (meaning-constituting, cultural, human) existence phylogenetically comes into being as a result of a non-biological compensation for the biological deficiency – supposedly consisting in an insufficiency of the instinctual organization – of the proto-human species from which *homo sapiens* originates and evolves. Since the human being is a "deficient biological being" (*biologisches Mängelwesen* [Arnold Gehlen]), its supra-biological way of biological (phylogenetic) survival involves the replacement of instinctual behavior (as enclosed in its peculiar environment and deprived of world-openness) by a comportment that interpretively constitutes the human being's (open, non-determined) cultural milieus as opposed to the instinctually determined kinds of environmental spatiality like ecological niche, adaptive zone, habitat, etc.

On the compensatory thesis, interpretation (as a basic mode of meaning-constituting existence) compensates for the insufficient instinctual organization. By implication, existence in interpretively constituted cultural (meaningful) worlds can be analyzed in terms of an existential theory of interpretation (conceived of as an interpretive mode of being). Yet, in contrast to Heidegger, the champions of philosophical anthropology – Helmuth Plessner in the first place, who in this regard follows the lead of Georg Misch's criticism of *Being and Time* – do not prioritize

this theory.¹³ The existential ontology of interpretation (if possible at all) should only be conceived of as an integral part of a general theory of (biological and cultural) life. In Heidegger's counterargument, by putting the compensatory thesis first, philosophical anthropology is condemned to confuse ontic (factual) studies into animal life and the phylogeny of *homo sapiens* with the ontological analytic of Dasein's being-in-the-world. This confusion leads to completely illegitimate research scenarios, since the concept of world is an ontological concept that cannot be interpreted by means of ontic (procedurally obtained) factuality. When criticizing philosophical anthropology (in particular, in *Kant and the Problem of Metaphysics*) as an enterprise that cannot aspire to be something more than a "regional ontology of man," Heidegger argues that the ontological difference must not be compromised in favor of the search for a new worldview that will define once for all the "position of man in the cosmos." In trying to bridge biological life with human existence within this worldview, the "idea of a Philosophical Anthropology is not only not sufficiently determined, but also its function in the whole of philosophy remains unclarified and undecided" (GA 3: 212/219).

Heidegger's criticism of philosophical anthropology goes hand in hand with a criticism of the idea of "philosophical biology" – an idea hinted at by Max Scheler, unfolded by Plessner, and advocated within biology by Frederik J. J. Buytendijk. Roughly, this idea consists in the need to articulate – through a kind of phenomenological *Wesensschau* – the essential moments of biological (vegetable, animal, and human) life. Being independent of the disciplinary departmentalization of biological science and theoretical-experimental research programs, philosophical biology should function as a prelude to developing philosophical anthropology. The weak point of this phenomenologically inspired initiative is that it metaphysically assumes a hierarchy of biological life-forms, ending with the top position of the biologically determined yet supra-biological life of the human being. Heidegger adduces a twofold argument against such a hierarchy. On the one hand, he stresses (contra Scheler) that the construal of humans as uniting in their mode of being all the lower levels of being is a fundamental error that prevents one

from having access to existential ontology as metaphysics (GA 29/30: 282–83/192). On the other hand, he supplies the argument with a moral dimension. The animal does not know the states of moral baseness and misery. Because the animal’s mode of being is not distinguished by fallenness (as an *existentiale*), the non-human biological species cannot be regarded as morally lower than the human being. While philosophical biology determines the position of human being in a hierarchical manner, the theory of life Heidegger tries to figure out defines the peculiarity of biological life-forms in terms of their “accessibility of world.” For him, animal life does not represent “something inferior or some kind of lower level in comparison with human Dasein. On the contrary, life is a domain which possesses a wealth of openness with which the human world may have nothing to compare” (GA 29/30: 372/255).

The specificity of human Dasein within the totality of biological life is to be addressed not in ontic terms – in particular, through a narrative unfolding of a compensatory motif – but via developing the ontological concept of world. This is why the biological forms of life are to be conceptualized with regard to their relatedness to the world, whereby the phenomenological conception of animality becomes, as it were, congruent with Heidegger’s earlier concept of facticity. Thus (ontologically) reformulated, *the science of the living would consider biological life and human Dasein in a philosophically unified perspective, which would not imply, however, a unified theory of the non-human and human lifeforms*. This would be a phenomenological science of the living relevant to the agenda of *Being and Time*, but by no means a continuation of hermeneutic phenomenology. Moreover, this science would retain its status of empirical (experimental) inquiry. In other words, a science of the living – centered around the ontological concept of world, and understood as a theory of life’s basic phenomena that can be further developed in various research programs – would be able to construct anew its pertinent (experimental) factuality by making sense of the distinctiveness of life in relation to human existence.

The research programs of existing biology – as predominantly rooted in the metaphysics of presence – are more or less unable to see

and “save” (theoretically and experimentally) the phenomena mentioned. The ontologically reformulated theory of biological life is, of course, not looking for proto-cultural modes of the world’s meaningful articulation within animal behavior – an initiative that belongs to the post-war programs for naturalizing social and cultural theory. (Nonetheless, Heidegger’s theory has much better chances for conceptually coping with the proto-cultural forms of animal life than the purely naturalist-objectivist theories.) One might assume that the task of the phenomenological theory of the living is to assist the existential analytic by properly addressing features of biological life presupposed by the ontological position claiming that human existence is distinguished by world-formation. (To reiterate, *The Fundamental Concepts of Metaphysics* does not support this task.) Yet Heidegger supports the view that a phenomenologically reformulated theory of life must in its own terms reflexively conceptualize not the (ontic) contrasts between animal and human biology, but those contrasts which make human existence ontologically distinctive. Thus, to reiterate an argument formulated earlier, instead of reconstructing (ontic) presuppositions of existing biological theories, the phenomenological theory of the non-human forms of life seeks to bring to light ontological meanings of phenomena characterizing the living that are at odds with the “background metaphysics” of these theories. (Heidegger alludes – on various occasions – to the possibility of transforming this meta-scientific theory into research programs capable of producing procedurally objectified factuality.)

The preceding considerations suggest that the lecture course introduces the triad of worldlessness, poverty in world, and world-formation in order to make the conception of animal life germane to the ontological turn of phenomenology. It is by means of this triad that the phenomenological concept of world has to be implemented in the reformulation of concepts like organ, biological capacities, living body, animality, the self-production of organism, the internal teleology of living systems’ self-preservation, the openness within the captivity of behavior, and the living being as a self-regulating whole. All non-organismic entities

are worldless since their way of being lacks the accessibility of other entities. At the other pole is human existence, which is by no means determined (instinctually) from within or (manipulatively) from without, and is characterized by the freedom to constantly form and articulate the world. While animals are doomed to have a purely behavioral mode of being enclosed in (captured by) their respective environments, humans are doomed to have a being-in-the-world by interpretively articulating the world. The critique of biology has to elucidate life's poverty in world as an intermediate state between worldless entities and human existence's world-formation.

"Accessibility of world" is an expression that provides a cue for coming to grips with this intermediate position. The talk of accessibility (as involving potentiality and temporality) is directed against philosophical biology. On a basic claim of Plessner's philosophical biology, nonhuman living creatures are characterized by either passive (plants) or active (animals) positionality to their environments.¹⁴ None of them is able to achieve "eccentric positionality" as a characteristic of wittingly reflexive life. Heidegger replaces the controversial notion of positionality with that of accessibility to other beings. Though animals have accessibility to things in their respective environments, they do not have world in the sense of a totality of meaningfully constituted things that can manifest themselves as things. The things involved in animal behavior – by playing a role in disinhibiting and releasing the inhibitedness of the instinctual drive – are always withdrawing themselves. Animals have a world only within the "encircling ring" of their behavior. The animal surrounds itself with a disinhibiting ring which prescribes what can affect or occasion its behavior. This encircling belongs to the innermost organization of the animal. The instinctual encircling of animal behavior makes possible the relatedness to (or the accessibility of) other things. Yet the instinctual behavior becomes "absorbed" in the totality of entities to which it has access. The way of its absorption is the way of producing a peculiar form of behavior. The animal's behavior is not encapsulated within its specific environment,

but is open to what disinhibits its capability for being absorbed in a certain way.¹⁵

The animal's relatedness to other things consists in a kind of being taken by that toward which the animal directs itself in its orientation. With regard to this kind of being taken, the animal's behavior is spatially characterized, but does not constitute the spatiality of meaningful appropriation and articulation. (Put in terms of *Being and Time*, the animal is not able to make room as a kind of spatializing its own mode of being. "Existential spatiality" does not only consist in the spatiality of the bodily activities, but also involves the spatiality created by the ready-to-hand equipment with which the human body is ecstatically united. Existential spatiality is always already constituted by Dasein's being-thrown into interrelated practices.) The space of the animal's behavior belongs to its captivation, and cannot be taken up in isolation. To reiterate, this behavior is eliminative in the sense that it relates itself to things, but the beings to which it is related can never manifest themselves as things. The claim that the intrinsic self-encirclement of the animal is not a kind of encapsulation is of crucial importance to Heidegger's conception of animal life. The behavior's leeway and plasticity are to be accounted for in terms of the organism's potentiality and specific regime of temporalizing. I will discuss this subject in more detail at the end of the paper. Yet an aspect of it should be addressed now. Heidegger raises the claim to a non-Darwinian understanding of behavioral adaptation. The process of adaptation is not an external and additive, but an intrinsic process. Furthermore, he is discontented with the claim that the organism is an independent entity that in its independence subsequently seeks to adapt itself. In criticizing Darwinism, Heidegger accepts Uexküll's line of argument.¹⁶ The organism's self-retention within its interaction with entities in its environment and the absorption of the animal into itself are expressions that supposedly describe a non-Darwinian scenario of adaptation – a scenario in which the animal organism plays an active role in adapting the environment to its ethological needs.

Doubtless, like several other phenomenologists – Max Scheler and Maurice Merleau-Ponty, to mention two of them – Heidegger is influenced by Uexküll’s pioneering ideas about the environment-world (*Umwelt*) as constituted by the specific way of uniting the spaces of all sensory perceptions.¹⁷ Yet his reception of the Estonian biologist’s ideas is essentially critical. Heidegger’s criticism of Uexküll involves an accusation of a non-radicality in the treatment of the relational structure between the animal and its environment. The question of whether the animal is able to apprehend something *as* something is the one which Uexküll’s approach cannot resolve. It remains to be seen, however, whether Heidegger’s own approach can suggest an appropriate solution to that question. Be this as it may, the criticism of Uexküll provides an important clue to the way in which Heidegger figures out a solution to the issue of behavior’s plasticity within its captivity. In his early work, Uexküll admits that beside the environment-world, the animal possesses an inner world.¹⁸ It consists of all effects on the nervous system caused by the environmental factors. Like the environment-world, the animal’s inner world depends on what Uexküll calls the “constructional plan” (*Bauplan*). The admission of the animal’s *Innenwelt* follows from Uexküll’s Kantian worldview. For Heidegger, this is an example of a misuse of the concept of world in biology. Addressing the behavioral openness in the animal’s captivation does not bring into play the possibility of an inner world.

An organism is neither a complex of instruments working in concert, nor a union of organs, nor a bundle of capacities. It is a “particular and fundamental way of being” (GA 29/30: 342/235). Heidegger insists that the unit of biological life is not the cell. We are told that both “unicellular and multicellular living beings have a specific essential wholeness by virtue of the fact that they are organisms” (GA 29/30: 312/212). Only an organism can possess organs. There are no organs without organism. Heidegger’s treatment of animal organism as distinguished by poverty of world is informed by his argument for the irreducibility of the organ to an instrument.¹⁹ In this argument, serviceability as a potentiality – i.e. being serviceable by having a possibility – is the common denominator of the instrument and the organ. At the same time, the *specific possibility* of

serviceability within the organism is what makes the organ distinct. The possibilities of serving a function are quite varied in their character of potentiality, depending on whether the function is accomplished in or out of the organism. The organ is not serviceable because it is equipped with a functional and instrumental property. The organ can serve a function within the organism since its way of functioning is “in accordance with its own essence that having possibility lies in its functioning in this way” (GA 29/30: 321/220).

Heidegger calls the identity of the organ’s potentiality-for-serviceability and the way of its functioning in the organism “capacity.” Since the possibility of capacity does not amount to the possibility of readiness to be implemented, the organ is irreducible to the instrument. Heidegger elucidates what capacity is by arguing, in particular, that the possibility of seeing is itself the condition of the possibility of the eye as an organ. Thus considered, the eye in itself does not have the capacity of seeing. The eye, taken independently, no more possesses a capacity than does any piece of equipment. The eye emerges from the organism, where the capacity of seeing is a condition of possibility for a having an organ of vision. Only by belonging to the organism does the eye have a capacity.²⁰ The capacities have organs. The eye grows from the capacity of vision which belongs to the organism. This is why Heidegger rightly concludes that it is, as a matter of fact, the organism which has capacities.²¹ By contrast, the serviceability of an instrument excludes its belonging to something else. With regard to this line of argument, an instrument – however perfect it might be – can never become an organ that is in a possession of a capacity.

II. FROM THE EXISTENTIAL CONCEPTION OF SCIENCE TO THE REFORMULATION OF THE CHARACTERISTIC HERMENEUTIC SITUATIONS OF BIOLOGICAL INQUIRY

My task now is to probe the extent to which the critique of biology which follows from Heidegger’s conception of animal life is coherent with the existential conception of science as developed in *Being and Time*. The conception asserts that mathematical projection and objectifying

thematization are the necessary initial steps in releasing domains (regions) of inquiry from practical contextures of equipment, whereby these domains become representable as manifolds of formally determined positions. Scientific objectification as a way of making present such domains – as they are procedurally delimited and released from the practical work-world – is itself based on a certain kind of temporalizing of temporality, namely a temporalizing that makes intra-worldly entities objectively present (GA 2: 475/SZ 359). On this account, the possible objects of inquiry are determined by mathematical structures. By the same token, the experimentally constructed phenomena can be saved (explained) if they – as units of measurable data – are embeddable in such structures. Phrased alternatively, a domain of scientific inquiry becomes disclosed by delimiting it through the projection of a mathematical structure. All domains that are (in principle) reducible to mathematical physics are disclosed through such projection and objectification. Obviously, a domain of biochemical research that deals with the kinetics of metabolic reactions and describes the phenomena investigated through quantifiable parameters presents a perfect illustration of how the existential conception of science addresses the meaning of objectifying theorizing.

The preceding discussion demonstrated, however, that in *The Fundamental Concepts* Heidegger is interested in that kind of biological inquiry which successfully combats (in his words) the “tyranny of physics and chemistry.” Since scrutinizing “animality” (*Tierheit*) is of prime importance for determining where exactly the difference between being deprived of world and world-formation lies, holist zoology and ethology are paradigmatic domains in Heidegger’s considerations. (Some scattered short notes indicate his view on taxonomy as a holist domain of biological inquiry, in which the inquiry has to approach species with regard to the specific encirclement that belongs to the species.) The holist domains of biological inquiry are not formalizable because the phenomena they investigate are not entirely presentable by measurable and quantifiable variables. This is why he jettisons the existential conception of science when treating the domains in which

the question about the specificity of biological life is scrutinized in a non-reductionist manner. At stake are – besides the domains already mentioned – domains that focus on the uniqueness of the organism, the morphogenesis of organs, or the distinctiveness of animality with regard to animals’ environmental behavior. All of these domains are not disclosed by means of mathematical projection. They do not derive their explanatory models from systems of equations or other formalisms.

Thus, when addressing the irreducibility of the organism to a machine, Heidegger stresses that the organism is driven in advance, i.e. subjected to that “structure of drives” for which there is no mathematical expression, “and it is one which is incapable in principle of being mathematized” (GA 29/30: 335/229). Another appropriate example for the irrelevance of mathematical models Heidegger adduces concerns the ethological aspect of the predator-prey relationship. He insists that one “cannot explain escaping and pursuing simply by applying theoretical mathematics or mechanics, however complex. *Here a quite primordial kind of movement reveals itself.* The escaping worm does not merely appear within the context of a sequence of movements which begin with the mole” (GA 29/30: 346/237).²² The non-mathematical disclosure of domains provides a methodological argument that what becomes constituted as objects of inquiry is irreducible to physical and chemical entities, because a reduction to such processes would unavoidably ignore the ways in which the animals are temporalizing – within their captivation in encircling rings – their modes of being. (Of course, Heidegger could not be blamed for not having seen the possibility of formalization of, say, morphogenetic processes based on differential topology, gauge theory, dissipative structures or whatever. The point is that even such a formalization does not refute Heidegger’s claim that the biological domains he is interested in are not disclosed by means of mathematical projection. The formalization here is not due to an initial mathematical idealization. Rather, it is a procedure that comes upon a domain’s non-mathematical disclosure. The mathematical models subsequently introduced capture the dynamics of complex biological processes, but

have nothing to do with the temporalization of the organism's mode of being. Generally speaking, the new forms of mathematizability in biology do not provide arguments against the non-mathematical projection of the nature of biological life in the disclosure of the domains of non-reductionist inquiry.)

Now, an important specification of what has been said is necessary. It concerns Heidegger's attitude towards neo-vitalism, taken both as a scientific worldview and a methodology. Neo-vitalism was a widespread research paradigm in the 1920s and 1930s. It strongly promoted non-reductionist approaches and promised to radically change the characteristic hermeneutic situations of inquiry even in biological domains close to chemistry and physics. (The spirit of non-reductionism is felt even in programs that aimed at describing the basic phenomena of life in terms of chemistry and physics. Thus, Niels Bohr's famous lecture "Light and Life" – held approximately at the time when Heidegger delivered *The Fundamental Concepts*, and considered by many historians of science as a herald of molecular biology – appealed to implementing the principle of complementarity when studying the relations between the organism's chemical basis and its organizational hierarchy. Applying this principle in biological inquiry is an anti-reductionist gesture, since it makes the physical and chemical explanatory models based on classical causality invalid in studying living systems.) It seems justified to assume that in searching for a non-mathematical projection of biological life, Heidegger would have had to support neo-vitalism. However, he appears to be an opponent of Hans Driesch's philosophical methodology, not to mention the more underdeveloped versions of neo-vitalism at that time. Driesch's famous experiments with the embryos of sea-urchins are mentioned several times in the lecture course. In developing his criticism, Heidegger focuses his attention primarily on the unsubstantiated turn to the cell "as the primal element of living things," and the attempt from cytology and cell biology "to put together the organism." The result of this attempt is a misunderstanding of the organism, which is "shattered into a heap of fragments, while the cell itself was still considered

in a chemico-physical fashion” (GA 29/30: 380/261). The neo-vitalists shift the focus from sub-cellular physico-chemical processes to cellular morphology, but – in trying to ground biology anew – they do not leave the territory of the metaphysics of presence.

In proceeding in this manner, the neo-vitalists are inserting the supposedly experimentally provable “entelechy” as an irreducible morphogenetic factor into the reality governed by physical and chemical laws. Furthermore, Heidegger stresses that neo-vitalism’s idea of wholeness is confusing. The wholeness is (mis)understood as a subsequent result of proven interconnections. The whole is a determining force imposed on the cellular physical and chemical processes. In trying to elaborate an alternative view, Heidegger alludes to the need to conceptualize the wholeness in its state of ongoing temporalizing. (Unfortunately, as I will show, this view remains essentially underdeveloped.) Experimentation inspired by neo-vitalism should design experimental systems showing how the whole of living cells produces *sui generis* organizing forces. In pursuing this strategy, Driesch and his followers willy-nilly adopt a bad approach to teleology – purposiveness determined by a presupposed aim. Consequently, neo-vitalism lacks the resources to solve the problem of purposive behavior. Against this approach, Heidegger holds that the main task of biology is “to recognize the full import of purposive striving before appealing to some force which, moreover, explains nothing” (GA 29/30: 381/262). The organism’s purposiveness does not precede the way in which the organism is driven in advance. As already mentioned, Heidegger consistently advocates the priority of organism over cell. By putting the cell first and trying to “derive” the organism’s distinctiveness from what happens on the cellular level, neo-vitalism is not capable of taking into consideration that the relation to the environment is included in (Heidegger’s words) “the fundamental structure of the organism.” It is the organism that asserts itself at every stage of biological life.

Heidegger’s quest for emerging properties of biological life on the level of the organism resonates with the aforementioned position of Bohr, who also tries to escape the impasse of vitalism-mechanism controversy.

Like Bohr, he strives for a kind of anti-reductionism without hypostatizing any essence (and purpose) of life or assuming that different physical laws operate in living systems.²³ Unlike Bohr, however, Heidegger admits a kind of purposiveness that is not to be objectified and formalized as pure empirical presence at hand. It is an “anticipatory purposiveness” that is driven from behind by the already mentioned “structure of drives.” The organism as being capable of producing itself by adapting its environment to its instinctual drives is the primary object of inquiry that most typically manifests this purposiveness as “driven directedness.” This view of intrinsic teleology, without hypostatizing essence and purpose, attributes purposiveness to the way in which the organism is self-retaining. In contrast to the “equipmental teleology” of ready-made instruments, the teleology of the organism’s self-production is always embedded in possibilities of changing the relation to its environment (without destroying the encircling ring). These possibilities are generated by the organism’s capabilities to vary its regime of adaptation within its mode of being. Though the animal organism is poor in world, its mode of being is characterized by potentiality. Yet by being “taken by the things” of its disinhibiting circle, and by not having the possibility of apprehending something-as-something, the animal’s captivation excludes freedom. Or, in an alternative formulation, captivation stands outside the possibility of forming a free relation to things that can be apprehended. This is why the animal is not able to project its being upon possibilities, which would imply a release from any kind of teleology. The intrinsic teleology of the animal organism correlates with a leeway and potentiality that are not based on freedom.

From a methodological point of view, Heidegger’s starting question is how the biological domains which are not disclosed by means of mathematical projection are constituted as regions of natural reality ready to be theoretically and experimentally investigated. (In the perspective of the existential conception of science, this constitution can be called a “projection of nature” that is not accomplished by means of objectifying thematization.) In observing that all biological disciplines are “caught up today in a remarkable transformation” that opens up

new ways for constituting objects of inquiry, Heidegger claims that the “task of confronting biology as a science is to develop an entirely new projection of the objects of its inquiry” (GA 29/30: 278/188). For him, adequate to this task would be a projection of biological life through a transposition in our interpretation of the diversity of animal life-forms. The aim is not to imitate or emulate nonhuman modes of being, but to attain understanding concerning the way in which the animal life is “poor in world,” granted that the poverty in world stands for the animal’s alterity. Though sounding dubious from a scientific viewpoint, the transposition Heidegger speaks about is a methodological procedure that is rich in ontological consequences. The transposition should enact (what Heidegger calls) a formally indicative conceptualization of the animal’s life. Phrased differently, the transposition as supplied by the method of formal indication should warrant an understanding of “the otherness of the animal,” thereby leading to concepts based upon “phenomenological insight” into how the indicated phenomena (or entities, or structures) of biological life exist in their potentiality, and not as a fixed presence. In undoing firm references of the theoretical terms of the phenomenologically informed biological theories, the formally indicative understanding of the animal’s otherness only indicates the way of approaching this otherness.²⁴

The biological objects of inquiry can be constituted only when the sense of life is properly explicated. The transposition takes the form of a procedure that can be called a “methodical empathy” with living beings, a procedure that enables one to phenomenologically study the “essential nature of life in and out of itself.” The task of this transposition also consists in capturing the sense in which biological life occupies an intermediate position between material nature and human existence. The deepest methodological entitlement of the transposition, however, is to reformulate (what I call) the “characteristic hermeneutic situations” in which holist domains of biological inquiry are disclosed and articulated.²⁵

A domain of scientific inquiry is originally disclosed as a thematically delimited region that contains a potentially infinite number of

research objects that might be constituted in the process of inquiry. Thus disclosed, the domain is indispensably prepared-to-be-articulated within a certain tendency to fore-having, fore-seeing, and fore-grasping the potentially existing research objects. Following this tendency, the process of inquiry – in actualizing the appropriated research possibilities – reveals and conceals what has been disclosed in a specific manner. The specific revelation and concealment of a scientific domain resulting from the tendentious choosing and appropriation of possibilities for doing research in the process of inquiry is the *characteristic hermeneutic situation* in which the domain exists. Being within such a situation, the process of inquiry selectively appropriates possibilities for doing research at the expense of ignoring and sedimenting possibilities that would reveal (and conceal) the domain in an alternative way. Thus considered, the scientific domain is approached not in epistemological terms but in terms of hermeneutic ontology. The ontological reformulation of the scientific conceptualization of life implied by Heidegger's critique of biology requires revisions of the characteristic hermeneutic situations of several domains of biological inquiry. These revisions can be accomplished by changing the tendencies toward choosing and appropriating possibilities of doing research, and accordingly constituting new objects of inquiry.

Let me sum up. Indeed, William Richardson was absolutely right when many years ago he stated that on the longest day Heidegger ever lived, he was never a philosopher of science.²⁶ Heidegger was never interested in the epistemological rationality of science as this rationality can normatively be evaluated in the “context of justification.” But another claim turns out to be true as well: Beginning with the “hermeneutics of facticity” in the early 1920s, the critique of science was for Heidegger a *sine qua non* for posing the question of being anew. *The Fundamental Concepts* sets up a twist in the orientation of this critique. The science of life is conceived of not simply as ontic objectification, but – if properly interpreted – as a necessary counterpart of existential ontology. Heidegger devotes three pages to “methodological reflections” on the science-ontology interplay in the lecture course. A prerequisite

for carrying out the critique of biology is the proper way of working out the “inner unity of science and metaphysics.” It is my contention that the lecture course approaches this unity from a unique vantage point. Heidegger calls the unity of science and metaphysics a “matter of fate,” and it is precisely the dialogue between the two that enables the integration of the ontological difference into the constitution of objects of inquiry. At issue is a critique as ongoing reflection upon the inquiry’s characteristic hermeneutic situations with the intent to retrieve ignored research possibilities whose appropriation might lead to a break with the groundedness of biology in the metaphysics of presence.

It is not by chance that Heidegger refers to Hans Spemann’s work when discussing the “fateful unity” of science and ontology. In developing his research program and introducing a new concept of embryogenesis, Spemann was successful in overcoming the depressing dilemma between preformation and epigenesis in embryology. The way in which he constitutes the morphogenetic field as an object of experimental inquiry, thereby opening the path to studies of experimental morphogenesis, illustrates exactly the unity of science and ontology Heidegger aspires to. It is with regard to Spemann’s transformation of embryology’s characteristic hermeneutic situation that Heidegger reached the conclusion that the “relation between metaphysics and positive research is not a matter of an organized operation or prearranged coordination. Rather, it is a matter of fate, and this means that it is always determined in turn by an inner readiness for communal cooperation” (GA 29/30: 280/190). With respect to the critique of biology, Heidegger specifies the “fateful unity” by formulating a kind of complementarity: Metaphysics must define in ontological terms the sense in which the animal’s life is distinguished by poverty in world, whereas biology must specify – primarily in physiological, ethological, and ecological terms – the empirical manifestations of how animality is poor in world. These manifestations – so Heidegger’s argument goes – are not attainable through the existing research programs of biology. Only ontologically reformulated biological inquiry is able to apprehend them.

III. THE TROUBLE WITH THE TEMPORALIZATION OF THE ANIMAL FORMS OF LIFE

Heidegger's conception of animality serves the task of creating a unifying phenomenology capable of addressing – without ruptures – the animal and the human form of life. (In saying “without ruptures,” I refer to the necessary *methodological unity and unified conceptuality* of the phenomenological approach implemented in the study of both forms of life. Heidegger's insistence that there lies an abyss between animal behavior, characterized as poor in world, and the existence that enables world-formation requires such a unifying approach. Otherwise the abyss could not be accounted for. The methodological unity is based on a conceptual complementarity in treating the lifeforms.²⁷) The unifying phenomenology should license the constitution of objects of inquiry presumably harboring the ontic-ontological difference in their intrinsic structures. Heidegger's approach fails to reach this goal. No doubt, this is by no means an accusation against *The Fundamental Concepts*, since the critique of biology – supposedly capable of constituting such objects of inquiry – was not the goal of the lecture course. Making a phenomenology of animal life commensurable with the analytic of humans' world-forming – the task which the lecture course accomplishes – significantly differs from the task of making possible the ontological critique of biology. Though refraining from any criticism of what was not a theme of *The Fundamental Concepts*, I should state that a basic deficiency of Heidegger's conception prevents one from properly addressing the latter task.

Indeed, Heidegger clearly realizes that the extension of phenomenology to cover the living is in need of biological (empirical, ontic) theories and research programs that are able to “save” (to give accounts of) experimentally constructed phenomena as these phenomena are ontologically – by means of the analysis of the animal's state of poverty of world – envisioned (“formally indicated”). Were this condition not met, the quest for an ontologically reformulated theory of animal life would be an empty exercise. The integration of a kind of phenomenology into biological conceptualization and inquiry consists precisely

in envisioning objects of empirical (ontic) research whose procedural constitution ought to take place in an ontologically informed hermeneutic situation that is commensurable with the situation of studying world-formation. Yet Heidegger's conception fails at the crucial point of properly taking into consideration and spelling out that facet of the ontologically reformulated theory of life which concerns the temporalization of the way of being in poverty of world. Without working out this facet, no constitution of ontologically relevant objects of inquiry could take place. I will conclude with an attempt to examine the reasons for this failure.

To begin with, Heidegger operates in *The Fundamental Concepts* with a concept of world that skips the main dimension which *Being and Time* attributes to this concept – the world is neither present-at-hand nor ready-to-hand, but it is constantly transcending. In the 1929–30 lecture course, the world is reduced to something that is (or is not) accessible. The world's transcendence is totally replaced by the world's accessibility. But when Heidegger concludes that the animal cannot articulate its environment into things that are either ready-to-hand or present-at-hand – and its poor access to world does not rest on identifying and perceiving something-as-something – he tacitly appeals to the world's transcendence. He makes it clear on several occasions that though there is no transcending world in animal behavior, a sort of temporalization takes place in the animal's absorption in itself as captivation and disinhibition. This conclusion is not to be reached if one entirely operates with a notion of world as accessibility of things. It invokes the broader concept of the world from *Being and Time*. Though there is no transcending world in the way of being of nonhuman animals, there are several characteristics of this way of being that parallel existential characteristics of human Dasein. How do these characteristics come into being? The answer lies not in the analysis of the accessibility of world, but in the analysis of something that absorption, adaptation, captivation and disinhibition have in common with transcendence. The common denominator is the possibility of temporalizing the respective way of being. Strangely enough, it is

only via the concept of the transcending world that one can arrive at the proper temporalization which distinguishes the animal's way of being as deprived of having world-formation.

Heidegger's conception of animality does not sufficiently specify the animal's leeway for mastering the immediate environment of its behavior, or the leeway for adapting the environment to the organism's drives that are to be disinhibited. It goes without saying that animal behavior does not master its immediate environment by having a reflexive stance and cognitive images. There is neither a hermeneutic nor an apophantic "as" operating in this mastering. Nevertheless, the animal possesses ethological and ecological plasticity – openness within its captivation – just because it is able to temporalize the way in which it adapts its environment to its organism.²⁸ The plasticity of animal behavior goes hand in hand with animal emotionality. (Animals' expressivity of emotions – as "transcending" the instinctual determinacy of animal behavior – shows how animals experience their environments by forming a sense of their individualities. Though not performed within a transcending world, the expression of emotions "transcends" the "structure of drives." The 1929–30 course dramatically lacks resources for approaching the issues of animals' emotions and their expressivity.) It is exactly the temporalization of the animal's life – as related to the attuned plasticity of animal behavior – that remains barely noticed in the lecture course.²⁹

The possibility of this temporalization lies somewhere between the pure presence of lifeless entities, which in their worldlessness cannot temporalize, and existence's ecstatic-horizonal modes of temporalizing within the temporality of the transcending world.³⁰ Heidegger pays much attention to the intermediary position which the animal's poverty of world occupies between worldlessness and world-formation. Yet he says almost nothing about the intermediary kind of temporalizing corresponding to this position. Without scrutinizing such a temporality, however, the development of a theory of life is doomed to incompleteness. Notoriously, in *Contributions to Philosophy* Heidegger criticizes his own account of the animal's being in a poverty of world (GA 65:

276–78/217–18). The meager considerations in this work suggest that he is no longer inspired by the idea of an ontological reformulation of the basic biological concepts of life, animality, and organism. (A biological science built upon such phenomenologically reformulated concepts cannot help one in resisting the “destruction of nature.”) Interestingly enough, this far-reaching self-criticism still misses the subject of the temporalization of animal life.

It is my contention that several notions Heidegger tackles – such as the structure of drives, the disinhibition of instinctual drives, the access to world without having world in the encircling ring, the adaptation to the environment in the organism, and most of all, the potentiality for having individuality (a notion Heidegger avoids when it comes to animals) – should be recast in a manner that leaves enough room for a concept of *temporalizing plasticity* in animal life as a counterpart to Dasein’s transcendence as a feature of human existence. The animal organism temporalizes in the midst of what it meets in its specific encircling ring. Of course, this is a kind of temporalizing that essentially differs from the temporalizing of temporality (i.e. the temporalizing within a horizon of meaningful articulation). It is a temporalizing that demands for its analysis a concept of time that is different from both the objectivist (quantifiable and measurable) time and the hermeneutic-ontological (horizontal) time.

In fact, Heidegger already presupposes the *sui generis* temporalization of life when discussing the irreducibility of the organ to the instrument. He argues that it is a mistake to ascribe a particular kind of presence to the organs only because one fails to consider their functioning in terms of the organism. For him, although the organs are constantly present-at-hand, they are “only given in that way of being which we call life” (GA 29/30: 330/225). Seen from the perspective of life, the capacity takes the organ into its service. On the level of the living organism, there is an emergent kind of “in-order-to” that is untranslatable into the kind of functional serviceability of the instrument. Following this line of reasoning, the instrument-organ distinction becomes specified by the claim that the ready-made instrument is

serviceable for carrying out a practice in a contexture-of-equipment, whereas the organ which arises through the capacity of a living organism is subservient. Accordingly, the organ does not exist without belonging to the capacity, which forms the organ in subservience to that capacity. The organ's subservience has its own leeway for temporalizing its functioning. In Heidegger's account, the capacity possesses an "originarily subservient character," and this character precisely provides the decisive argument for the distinctiveness of capacity as compared with readiness. Being subservient by belonging to a capacity is a temporalization of a particular biological function.

The functioning of an organ as arising out of a capacity of the organism has a specific regime of temporalizing the fulfillment of the respective function. This temporalization is not to be attained from the purely naturalistic study of "biological clocks" as related to various biochemical and physiological cycles in the organism. The temporal functioning of organs is the temporalization of capacities' formation as belonging to the organism adapting its environment to its needs. In reaching this conclusion, one should move from the temporalization of organs' functioning to that of the organism's way of being. To say that the animal's way of being is distinguished by temporal organization is to assert that the animal is rendered capable of temporalizing its ecologically proper behavior. For the non-human animals, this is the way of temporalizing the united ethological and ecological spatiality, granted that the latter is the spatiality of (what Heidegger calls) the "originary structure of animality." The temporalization achieved by the animal organism is what makes this organism something more than a "bundle of drives." Seen ontogenetically (in the sense of biological ontogenesis), this is a temporalization that corresponds to the organism's potentiality to articulate itself into capacities creating organs. Seen ethologically, the temporalization concerns the behavior's leeway of accomplishing different scenarios. Appropriating and actualizing possibilities – though without reflexively choosing them – is a temporalization. The animal's capability of articulating itself into capacities creating organs is the temporalization of (what Heidegger

calls) “proper peculiarity” (*Eigentümlichkeit*), or the self-like character of the organism. Heidegger’s approach implies that this character is always *in statu nascendi*. Because of its leeway and potentiality, the organism in its encircling ring is constantly producing itself, and the temporalization of this self-production cannot be expressed by the measurable dynamics – and its quantifiable variables as they are functionally dependent on mathematical time – of metabolic, physiological, and behavioral processes.

The animal organism’s temporalization is also not to be confused with the (positive and negative) feedback time of self-regulation. If this were the case, then Heidegger’s conception of animality would have resulted in a doctrine that would be on a par with something like Karl Ludwig von Bertalanffy’s theory of organism as an open system. In admitting that life is a dynamic equilibrium in a polyphasic system, this theory posits that the metabolizing organism fundamentally contrasts with the chemical equilibria of non-organismic systems. This contrast must be captured by completely different dynamical models invoking alternative mathematical idealizations of time. More specifically, the idealization of a quasi-steady state must be brought to bear on the organism’s openness. Yet, thus understood and conceptualized, the metabolizing organism does not differ from any (“worldless”) non-organismic system of chemical reactions in not being able to temporalize its mode of being. Von Bertalanffy’s theory simply introduces new types of mathematical time in the formal objectification of the metabolizing organism as an open system. This theory does not even touch upon the problematic of the organism’s temporalization. However, without scrutinizing this temporalization, the biological part of Heidegger’s conception of the living is at risk of being fully translatable into von Bertalanffy’s “general theory of systems” developed in the period from 1929 to 1934.

Brett Buchanan is right when he observes that “Heidegger rarely speaks of a temporal dimension of animals.”³¹ Buchanan develops a deep and interesting criticism of Heidegger’s inability to conceptualize animals and organisms in conjunction with time. Yet he chooses, in my

view, a wrong strategy in his approach to the temporal dimension of the ontology of animal life. Buchanan asks the question of whether animals have a sense of time. However important and interesting this question may be, it is essentially irrelevant to the subject of the temporalizing taking place in animal life. The question to be asked is how the constitution of the animal's way of being – as a being of the organism's self-production – is characterized by a kind of non-ecstatic-horizonal time. To reiterate, the kind of temporalization I am speaking about must not be confused with the timing of the various biological cycles taking place in the animal organism and its relatedness to environment. Doubtless, there is a sense of time in animal life that should be studied by analyzing the organism's relatedness to these cycles. It is a sense that can also be discovered by “collective organisms” of animal life: The annual periodicity in migration and reproduction as it occurs in flocks of birds is a case in point. But this (purely biological) kind of having a sense of time does not exhaust the subject of the way of temporalizing accomplished by individual animals. There is another “sensitivity to time” in animal life, which one – in full agreement with McNeill's suggestions³² – should strongly relate to the animals' emotional memory. The latter does not operate by means of temporalizing mechanisms of selective forgetting, but nonetheless succeeds in placing the animal's reactive behavior (including the spontaneous emotions accompanying the reactions) within states of attunement that concern the animal's sensitivity of having a temporalized way of living. It is this sensitivity that enables the individualization in the animal's way of being.

Let me conclude by delineating a theme whose treatment promises a furthering of Heidegger's “critique of biology.” To stress again, the main shortcoming of his controversial treatment of animal life consists in the fact that – in dealing with the relation of human Dasein's attunement to world-forming in a detailed manner – he fully ignores the issues of the animal's attuned relatedness to its whole way of living. In conceiving of this relatedness as a dimension of animal life that is poor in world, one has also to address it in terms of a non-human kind of *Befindlichkeit*. The animal experiences-and-expresses emotions within

the “minimized world” it possesses and within the attuned relatedness to its way of living. Experiencing and expressing emotions is by no means a side-effect of disinhibiting the animal’s instinctual drives. By the same token, animal emotionality is not a mere epiphenomenon of its ecological and ethological determinacy. The experiential expressivity of this emotionality rather “transcends” the animal’s instinctual nature without enabling world-formation. The animal’s experiences and expressions of emotions can take place only if the animal’s way of being is able to temporalize the “minimized world.” When my cat expresses her sympathy to me, she “opens” a leeway for possible interactions with me by “activating” her emotional memory of how I have had intervened in her limited world. An alternative “regime of temporalizing” – a leeway for interactive behavior that in being put into effect activates a trajectory of emotional memory – comes into play when my cat becomes jealous because I am flirting with my wife’s cat.

Interestingly enough, Heidegger ignores the subject of animal emotionality, but nevertheless he briefly addresses the way in which the animal is in a mood as “poverty in mood.” According to his cogent note, animals’ kind of being in a “poverty in mood” is to be distinguished from the way of being in a “mood of poverty,” which in turn is to be understood in “analogy with ‘in a mood of melancholy’ or ‘in a mood of humility’” (GA 29/30: 288/195). Heidegger is absolutely right when insisting that the difference between the human mood of poverty and the animal poverty in mood is not purely quantitative. But being in a poverty in mood (as a “kind of deprivation”) is still a kind of being in a mood. (The animal way of being in a mood corresponds to the way in which the animal reveals itself as a being which “both has and does not have world.”) Animal behaving in its limited world is indispensably an attuned behavior. What “transcends” the animal’s instinctual nature – without tearing the encircling ring of animal behavior – is precisely the animal’s being in a mood. In continuing this line of reasoning, one may state that the animal’s way of experiencing-and-expressing emotions presupposes the animal’s peculiar way of constantly being-in-a-certain-mood. To say that animal behavior is attuned is to state that this

behavior takes place in an “attuned captivation.” Animals’ attunement belongs to the encircling ring and plays a role in the temporalizing of the captivated behavior within a minimized world. Chimpanzees and dolphins perhaps most clearly show how the attuned-behavior-within-an-encircling-circle is a requisite for exercising the ability to communicate emotions through vocalization. It remains an open question as to whether these species – via their “attuned communication” – are crossing the threshold of being in a “poverty in mood.”

NOTES

- 1 There is in Heidegger’s earlier work a persistent tendency toward a treatment of animals in terms of organisms guided by drives and not distinguished by *Befindlichkeit*. William McNeill traces back the beginnings of this tendency to Summer Semester 1926: “A Sense of Time: Aristotle, Nietzsche, and Heidegger on the Temporality of Life,” *Mosaic* 48: 2 (2015): 55.
- 2 According to the famous dictum announced in *What Is Called Thinking*, science does not think in the sense in which thinkers think. I am not going to discuss the dictum here. My only intention is to draw attention to one aspect of science’s inability to think: for Heidegger, every science rests on presuppositions which cannot be established scientifically. A scientific program that is not only engaged with doing research, but is also capable of reflexively conceptualizing its presuppositions would display an “essential closeness” (in the sense discussed in *What Is Called Thinking*) of its way of constituting objects of inquiry and thinking. Though

this claim does not necessarily express Heidegger's position, a science "capable of thinking" would be one which can (1) call into question its ontic presuppositions, and (2) conceptualize the ontological meaning of the objects of inquiry it reflexively constitutes. A critically reflexive science would also be able to take a critical stance on what Heidegger admits to be the most essential feature of modern science: its groundedness in the essence of technology. In particular, a critical-reflexive biology would be able to control the reasonability of its own participation in biotechnological initiatives. A science "capable of thinking" would owe its critical potential to the possibility of combining procedural objectification with phenomenological interpretation of the meaning of the objects of inquiry it constitutes. It is this combination that I have in mind when speaking of an integration of the ontic-ontological difference with scientific conceptualization.

- 3 Heidegger's arguments against axiomatics and the related position against logical analysis are best documented not in *The Fundamental Concepts of Metaphysics*, but in Heidegger's later "polemics" with Rudolf Carnap. See in this regard Michael Friedman's celebrated study *A Parting of the Ways: Carnap, Cassirer, and Heidegger* (Chicago: Open Court, 2000), 11–25.
- 4 Since the mid-1980s there has been a growing number of studies devoted to the subject of "Heidegger's interpretation of science." Four of these studies play pivotal roles in the discussion of science's openness to the ontological difference: Joseph J. Kockelmans, *Heidegger and Science* (Lanham, MD: University Press of America, 1985); Gernot Böhme, *Am Ende des Baconschen Zeitalters* (Frankfurt/Main: Suhrkamp, 1993), 38–49; Babette Babich, "Heidegger's Philosophy of Science: Calculation, Thought, and *Gelassenheit*," in *From Phenomenology to Thought, Errancy, and Desire*, ed. Babette Babich (Dordrecht: Kluwer, 1995), 589–600; and Robert Crease, "Heidegger and the Empirical Turn in the Continental Philosophy of Science," in *Heidegger on Science*, ed. Trish Glazebrook (Albany: State University of New York Press,

- 2012), 225–38. I have to note that Heidegger’s reflections on biology are totally missing in the whole tradition of these studies.
- 5 Thomas Kessel’s *Phänomenologie des Lebendigen: Heideggers Kritik an den Leitbegriffen der neuzeitlichen Biologie* (Freiburg: Karl Alber, 2011) is the only study exclusively devoted to Heidegger’s critique of biology. The author offers an excellent contextualization of the way in which Heidegger elaborates biological concepts within the pertinent historical developments of biological disciplines. In so doing, Kessel raises the interesting claim that Heidegger undertakes in *The Fundamental Concepts* a “destruction of the history of biology” (16). Kessel’s proposal resulting from the analysis of Heidegger’s confrontation with biology and anthropology amounts to launching a “phenomenological anthropology” that would combine ontic and existential dimensions.
- 6 Jacques Derrida, *Of Spirit: Heidegger and the Question*, trans. G. Bennington and R. Bowlby (Chicago: University of Chicago Press, 1989), 48.
- 7 Derrida, *Of Spirit*, 54.
- 8 Another great question following from Derrida’s criticism of Heidegger’s “awkward description” runs as follows: “Can one not say, then, that the whole deconstruction of ontology, as it started in *Sein und Zeit* and insofar as it unseats, as it were, the Cartesian-Hegelian *spiritus* in the existential analytic, is here threatened in its order, its implementation, its conceptual apparatus, by what is called, so obscurely still, the animal?” (Derrida, *Of Spirit*, 57). Of course, the solution to this question Derrida is looking for does not consist in figuring out a smooth transition from animality to *Dasein*, but in deconstructing the traditional dividing line. Yet Derrida’s approach is also not immune to criticism. He ignores (or at least does not take seriously) the possibility of transforming the awkward description of the animal into a phenomenal description achieved in terms of an ontologically revised biological program. Though he is sensitive to the need for a more elaborated

- conception of the animal's life, he shows little interest in the critique of biology which is implicit in *The Fundamental Concepts*.
- 9 Giorgio Agamben, *The Open: Man and Animal*, trans. K. Attell (Stanford: Stanford University Press, 2004), 37.
- 10 Agamben's reading of the concept of animality from the lecture course is focused on the way in which Heidegger oscillates between the pole of interpreting animal captivity as a radical openness (more intense than the openness founding the cognition in human *Dasein*) and the pole of construing captivity as not being able to reveal the entities pertaining to its own "disinhibition" (*Enthemmung*), and accordingly, as being doomed to be closed in a total opacity. Agamben's own conception of "the open" heavily depends on how he copes with this oscillation in *The Fundamental Concepts*. His search for the place "in which human openness in a world and animal openness towards its disinhibitor seem for a moment to meet" (Agamben 2004: 62) actualizes the question of what kind of political engagement an ontologically reformulated biological science should have, if Western politics is in its origin also biopolitics.
- 11 William McNeill, *The Time of Life: Heidegger and Ethos* (Albany: State University of New York Press, 2006), 35.
- 12 The revision should bring into play that kind of critical reflexivity which was mentioned in footnote 2. The reflexive questioning of uncritically accepted presuppositions, however, is a dangerous enterprise. It is a questioning that proceeds on the level of conceptualization by scrutinizing the constitution of any possible object of inquiry. In so doing, reflexive questioning threatens to destroy the production of objectified factuality in biological inquiry. The only way of turning critical reflexivity into a non-destructive initiative is by committing the conceptualization to something that cannot be represented as objectified positivity of inquiry. It is the ontological meaning of the constituted objects of inquiry that resists any procedural objectification and factual representation. As already mentioned, pursuing this strategy leads to the integration

- of the ontic-ontological difference with scientific conceptualization, which for Heidegger is an “impossible possibility.”
- 13 In his initial reception of *Being and Time*, Plessner stressed the fact that prioritizing the existential analytic over the philosophy of the living simply furthers the tradition of subjectivism.
- 14 Plessner characterizes the plant’s positionality as *offene Positionalität*, which means that the plant’s way of being is without a center of positionality. By contrast, the animal is determined by its *geschlossene Positionalität* that enables “the animal’s withdrawal [*Abhebung*] from itself within animal life in a manner that allows the animal to control itself within its own life”: Helmuth Plessner, *Die Stufen des Organischen und der Mensch: Einleitung in die philosophische Anthropologie*, 2nd ed. (Berlin: de Gruyter, 1965), 243.
- 15 Speaking in a more conventional scientific terminology, to say that the organism is first and foremost a particular way of being is to assert the priority of the ethological standpoint over the other scientific standpoints on organism, which are – as tendencies of inquiry – more or less reductionist. Heidegger insists that the entirety of the animal’s being must be comprehended as behavior. It is the ethological standpoint that helps one to see how the eliminative character of behavior makes possible an appropriate leeway in the animal’s way of being. In spite of its captivation, the animal’s behavior displays openness. Captivation is neither a static condition, nor a structure in the sense of a rigid framework. It is rather a kind of motility belonging to the essence of organism.
- 16 Heidegger does not do enough justice to Darwin’s view of adaptation. He is completely right in interpreting adaptation as a process of the organism’s self-production in a specific environment that comes into being through this self-production. There is no room for anything that is present at hand in this process. From this standpoint, Heidegger argues that Darwinism is guided by the misconceived idea that the animal is present at

hand, and subsequently adapts itself to a world that is present at hand. In fact, he trivializes Darwin's idea of local adaptation within branching evolution. Precisely because this idea opposes the Lamarckian inheritance of acquired characters, it does not need to assume a presence at hand prior to natural selection and adaptation. The Darwinian adaptive scenarios explain how divergent branches move off from a common starting point that is itself a dynamic state and not a static givenness of organisms. Thus, Darwin is not far away from Heidegger's interpretation of adaptation. See also Lawrence Hatab, "From Animal to Dasein: Heidegger and Evolutionary Biology," in Glazebrook, *Heidegger on Science*.

- 17 Kessel, *Phänomenologie des Lebendigen*, 198–202.
- 18 Jakob von Uexküll, *Umwelt und Innenwelt der Tiere* (Berlin: Julius Springer, 1909), 6.
- 19 Heidegger denounces a view – typically represented in late-19th-century biology by Wilhelm Roux – that the organism is a complex of instruments. The reduction of organs to instruments was a commonplace view in 19th-century mechanistic (anti-vitalistic) biology. Yet the elaborated conception that motor organs are kinds of tools, utensils and “pieces of equipment” (*Werkzeuge*) goes back to Uexküll's celebrated work on the concepts of “environment world” (*Umwelt*) and the “functional circle” specifically characterizing the mode of behavioral being of every biological species. Uexküll places the treatment of organs' functionality within the context of his discussion of species-specific environment. In so doing, he mentions the instrumental character of motor organs. But in general, Uexküll's approach is radically anti-reductionist. This is why the further development of his conception and his subsequent elaborations of the concepts of functional circle and environment are related to arguments for the irreducibility of organs to instruments: Brett Buchanan, *Onto-Ethologies: The Animal Environments of Uexküll, Heidegger, Merleau-Ponty, and Deleuze* (Albany: State University of New York Press, 2008), 30–34. See in

this regard also the cogent analysis of Carlo Brentari, *Jakob von Uexküll: The Discovery of the Umwelt between Biosemiotics and Theoretical Biology* (Dordrecht: Springer, 2015): 97–104.

20 “It is the *potentiality for seeing* which first makes the possession of eyes possible, makes the possession of eyes necessary in a specific way” (GA 29/30: 319/218). In making use of a classical transcendental formulation, Heidegger states that the possibility of seeing is itself the condition of the possibility of the eye as an organ.

21 In advocating this claim, Heidegger follows a biological line of argument. He refers to unicellular organisms like the amoebae and infusoria, which form their necessary organs “individually in each case, only to destroy them again in turn” (GA 29/30: 327/224). From the observation that the organs of these unicellular organisms are dependent upon the protoplasm, he draws the conclusion that we are confronted with changing organs that replace one another in a specific sequence. Leaning on this conclusion, he posits that the capacities for serving physiological functions are prior to the organs in each case.

22 Indeed, one can revoke this assertion by appealing to the so-called Lotka-Volterra non-linear equations that serve as a mathematical model of the dynamics in the growth rates of the prey and the predator populations, granted that various parameters describing the prey-predator interaction are taken into account in the model. Yet the reference to this model is by no means evidence against Heidegger’s claim. The non-linear equations can establish the states of population equilibrium and ecological stability in a prey-predator relationship, but they can say nothing about the formation of that ethological spatiality (of the prey’s and the predator’s behavior) through which the behavioral movement “reveals itself.” To take up Heidegger’s example, no mathematical model can explain why the escaping worm behaves as fleeing in a particular way with respect to the mole, whereby *das*

- Sichbenehmen* (the behavior's non-reflexive selfhood) of the worm becomes revealed.
- 23 There is in the early 1930s a remarkable development of the quantum-molecular speculations about the nature of life that starts from Bohr's view, then passes via Delbrück's "molecular picture of the gene," and finally reaches Schrödinger's non-Bohrian speculation that there are in the living substance "other laws of physics hitherto unknown." Prima facie it seems that Schrödinger's approach – as developed in the brochure *What is Life* – brings back the reductionist paradigm. Actually, this approach completes Bohr's line of anti-reductionist reasoning. In ascribing to (what he supposes to be) a gene the character of an aperiodic solid and trying to explain the spontaneous mutations in a quantum-mechanical manner, Schrödinger appeals to the Heitler-London theory of the hydrogen molecule which marks the beginning of quantum chemistry. (Schrödinger had expected that the quantum theory of the chemical bond would provide models on the molecular level explaining bio-energetic flows.) It would be a bit of exaggeration to say that the Heitler-London theory is "phenomenologically grounded," but one should not forget that up to the mid-1920s Fritz London was a phenomenological philosopher (a pupil of Husserl), and his approach to physical-chemical phenomena was essentially informed by the spirit of phenomenology. Schrödinger himself maintains a view that bears closer resemblance to Heidegger's view of the organism's active role in designing its environment: The living organism – so Schrödinger's argument goes – delays the decay into thermodynamic equilibrium by creating order in its environment, i.e. by producing "entropy with a negative sign."
- 24 Daniel Dahlstrom argumentatively unfolds the claim that between 1919 and 1930 Heidegger is preoccupied with certain "methodical reflections" that lie between a full-blown methodology and the method he pursues in the hermeneutic and ontological reorientation of phenomenology. These reflections are

predominantly concentrated on the formal-indicative character of his method: Daniel Dahlstrom, “Heidegger’s Method: Philosophical Concepts as Formal Indications,” *Review of Metaphysics* 47 (1994), 779. Though rarely mentioned explicitly, the method of formal indication – as a method of phenomenological explication – plays a crucial role in *The Fundamental Concepts of Metaphysics*. All concepts of the ontological theory of life lack any firm referents that can be described by means of predicative assertions. These concepts are formally indicating (and not formally logical or formally thematic). Another aspect of the formally indicative concepts entertains the potentiality (as opposed to the actual presence) of what is referred to. For a criticism of the method of formal indication, see Dimitri Ginev, “The Unfinished Project of Cognitive Existentialism,” in *Debating Cognitive Existentialism*, ed. Dimitri Ginev (Leiden/Boston: Brill, 2015), 122–26. The main deficiency of this method consists in its residual essentialism. The formal indication still preserves the idea of (at least regulative) invariants.

- 25 The concept of a characteristic hermeneutic situation is actually developed through a critique of Heidegger’s existential conception of science. This conception stills suffers from essentialist-objectivist prejudices concerning scientific inquiry. In admitting that the process of inquiry is not determined by a “mathematical projection of nature” but unfolds itself as interplay of changing configurations of practices and shifting research possibilities, one focuses on the articulation of scientific domains within this interplay. Accordingly, one pays attention to the hermeneutic situations of this articulation. See Dimitri Ginev, *The Tenets of Cognitive Existentialism* (Athens, OH: Ohio University Press, 2011), 65–76; Dimitri Ginev, *Hermeneutic Realism: Reality within Scientific Inquiry* (Dordrecht: Springer, 2016), 132–56.
- 26 William J. Richardson, “Heidegger’s Critique of Science,” *New Scholasticism* 42 (Autumn 1968), 511.

- 27 From today's "post-humanist point of view," the search for a phenomenological approach to non-human and human lifeforms should take into account the proliferation of technological settings creating artificialized lifeforms due to human interventions in animal life on different biological levels. The artificialized biological lifeforms challenge the classical way of demarcating between the animal and the human form of life.
- 28 The animal body also has a degree of openness within its specific encircling ring. Because of its openness, "the animal is always more than it already is: it exceeds every 'already' in an incalculable manner that can never be theoretically discerned": McNeill, *The Time of Life*, 43. The exceeding of every "already" is also an aspect of temporalization.
- 29 Heidegger acknowledges that captivation is "not a static condition, not a structure in the sense of a rigid framework inserted within the animal, but rather an intrinsically determinate motility which continually unfolds or atrophies as the case may be" (GA 29/30: 385/265). Treating captivation in this way opens the door to studying the intrinsic temporality of animal life. Biological life is not simply organism – so Heidegger's argument goes – but is essentially a process. It seems as if this temporality becomes "generated" by a non-human form of being-towards-death. With regard to the existential-analytic nexus of temporality and historicity, Heidegger takes a step further by asking the question of what kind of history distinguishes the life of the particular individual animal. However, he gives up this line of reasoning by concluding that the "species-character" is what matters when one approaches the temporality and the history of animal life. The animal is not individually dying, but it is only coming to an end. The animal's individuality is most definitely excluded. Thus, Heidegger does not cross the threshold of a phenomenological description of processes of development as they have naturalistically been objectified in various branches of developmental biology. (See also McNeill's cogent criticism of Heidegger's reduction of

the temporality of animal life to “the purely biological or vegetative phenomena of ‘birth, growth, maturation, aging, and death’”: William McNeill, “A Sense of Time: Aristotle, Nietzsche, and Heidegger on the Temporality of Life,” *Mosaic* 48: 2 (June 2015): 57. At this point the lack of a proper approach to animal emotionality is most palpable in Heidegger’s conception. He would probably have developed a special view about the animal’s individuality/individualization (including the individual temporalizing of being-captivated) if he had approached issues of animal life’s attunement.

- 30 Kessel, *Phänomenologie des Lebendigen*, 207–8.
 31 Buchanan, *Onto-Ethologies*, 101.
 32 McNeill, “A Sense of Time,” 58.