Biology, The Empathic Science: Husserl's *Beilage* XXIII of *Die Krisis der europäischen Wissenschaften und die transzendentale Phänomenologie: Eine Einleitung in die phänomenologische Philosophie*[1]

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Thanks to Niall Keane's careful translation, English-speaking readers of Husserl have a first chance to read this important appendix to the *Krisis* text, omitted from the original English translation of 1970.[2] The translation of *Beilage* XXIII also offers a rare glimpse at a dimension of Husserl's late thought that seldom gets seen in English, but which nonetheless left an important legacy in the development of phenomenology. This is particularly the case with Maurice Merleau-Ponty, but also, perhaps more indirectly, the phenomenological biology of Hans Jonas and contemporary work in the field of neurophenomenology and philosophy of mind (I am thinking here of Evan Thompson's *Mind in Life*).[3] While Thompson's work draws explicitly on Husserl, Merleau-Ponty and Jonas, he does not (to my knowledge) anywhere mention Husserl's few writings on biology. I will briefly return to Jonas and Thompson later to argue that one of the central insights that Thompson draws from Jonas: "life can only be known by life", is already very much present in Husserl's ideas as presented in this appendix.[4] Though these few pages offer only some hints at what Husserl thought the relation between biology and phenomenology might be, and beyond that what light the relation between biological life and consciousness or sense-bestowal (*Sinngebungen*) might shed on more general ontological problems, they present an interesting set of issues that continue to be of relevance today in several areas of philosophy (phenomenology, philosophy of mind, philosophy of life, philosophy of biology, philosophy of nature).

The significance of this and other unpublished texts on biology and nature from Husserl's late period certainly was not lost on Merleau-Ponty. To paraphrase the French phenomenologist, it is in these late, unpublished and 'embarrassing' writings (the

unpublished *Beilagen*, notes and manuscripts some of which Merleau-Ponty was able to consult at the Husserl Archives as early as 1939, including *Ideas II*) that Husserl provides some of the resources for putting the absolute being of the transcendental subject into question and with it the assertion that its constituting activities would be the ground of all phenomenology.[5] But all of this is done from within the limits of phenomenology and indeed from within the framework of transcendental idealism and its emphasis on the sense-bestowing activities of the ego. It is this possibility of going beyond egoic transcendental idealism, what Merleau-Ponty calls bringing into contact with one another the "realist-causal order" and the "idealist-constituting" one,[6] that led the French phenomenologist to translate (into French) *Beilage* XXIII in the preparation of his 1958-59 course *La philosophie aujourd'hui*, where he read (or at least, according to his notes, planned to) the appendix with his students.[7] It is clear that he saw Husserl's late and 'embarrassing' (at least from the perspective of phenomenological transcendental idealism grounded in the absoluteness of the constituting subject) writings as offering vital clues, hints and resources towards the aim of his (Merleau-Ponty's) final project: "Unconcealment of a type of being other than the one where what *we call* 'matter,' 'spirit,' and reason reside. We are in contact with this type of being through our science and our private and public lives. But it does not have official existence: our 'philosophical' thought remains spiritualist, materialist, rationalist or irrationalist, idealist or realist […]."[8] In his preparatory course notes, Merleau-Ponty writes in direct reference to *Beilage* XXIII: "The transcendental is no longer consciousness, constituting everything. It is also the reciprocity: everything that comes to consciousness in man; man as a microcosm. […] Thus biology, insofar as it speaks of life, necessarily speaks of the incarnation of consciousness, of the first empathy [*Einfühlung*] through which our body becomes *Leib,* while the other bodies become for us 'other bodies', and for example, the animals, animals".[9]

It is worthwhile to note that Husserl wrote other *Beilagen* on biology and phenomenology, significantly text Nr. 27 of *Husserliana* XXIX on species and species' worlds, which are closely linked to *Beilage* XXIII, and particularly to the second footnote that Husserl adds to the *Beilage*.[10] For Merleau-Ponty's part, in addition to the reading of *Beilage* XXIII that he carries out in his course notes from 1958-59 there is also a clear relation between Husserl's later thought, or the 'unthought' of Husserl's late period and the phenomenological-biological studies that Merleau-Ponty discusses in his *Nature* lectures of 1959-60 (with reference to Jakob von Uexküll, Konrad Lorenz, E.S. Russell, and Adolf Portmann as well as Raymond Ruyer).[11] According to Dr Thomas Vongehr of the Husserl Archives, Leuven, an affinity between Husserl's work and the biologists of his time, notably Hans Driesch, is not surprising. Husserl and Driesch shared a mutual interest in and respect for one another's work, and from their correspondences (held by the Husserl Archives) we know that Driesch sent copies of his work to Husserl.

Another name that was most likely on Husserl's mind when he wrote these paragraphs in 1936 (probably while on Summer holiday) is that of Heidegger. It could be argued that the *Krisis* text was written in part as a response to Heidegger's break in *Being and Time* from Husserl and from Husserlian phenomenological method. While seeking, contra criticisms leveled by Heidegger, to re-establish his rigorous method of epoché and reduction in the overall system of transcendental phenomenology that he reintroduces in the *Krisis*, Husserl also takes on some of Heidegger's vocabulary, for example, the frequent use of the term Dasein in the *Krisis*. He also sought to address some of the issues that Heidegger had taken up about ten years earlier, one of those being the relation between biology and phenomenology. This was of course not the first time that Husserl had addressed the relation between phenomenology and the natural sciences, but biology here warrants special consideration precisely due to its alleged (by Husserl) proximity to

transcendental phenomenology and in particular its close proximity to the original source of all scientific evidence, the lifeworld. While Heidegger, in §10 of *Being and Time*, situates biology (as well as psychology and anthropology) as derivative in relation to the analytic of Dasein, Husserl seeks to position biology as founded in transcendental phenomenology (like all the sciences) and as the special science closest to philosophy (transcendental phenomenology) due to its proximity to the lifeworld *qua* original source of all evidence, its reliance on variant forms of empathy to proceed, and even a sort of in-built phenomenological *Rückfrage*, giving it the clearest path amongst the natural sciences back to its grounds in the lifeworld and transcendental sense-bestowal. It is for these reasons that, of all the sciences, biology seems, according to Husserl, better able to avert falling into the kind of *Crisis* that is inherent to mathematical physics. We will return to the relation between biology and the concept of *Crisis* below. Despite Husserl's more positive assessment of biology's relation to philosophy than Heidegger's, it is certainly worth juxtaposing Husserl's analysis with Heidegger's remarks in §10 of *Being and Time*. Heidegger writes:

> Nor can we compensate for the absence of ontological foundations by taking anthropology and psychology and building them into the framework of a general *biology*. In the order which any possible comprehension and interpretation must follow, biology as a "science of life" is founded upon the ontology of Dasein. Life, in its own right, is a kind of Being; but essentially it is accessible only in Dasein. The ontology of life is accomplished by way of a privative interpretation; it determines what must be the case if there can be anything like mere-aliveness. Life is not a mere Being-present-at-hand, nor is it Dasein. In turn, Dasein is never to be defined ontologically by regarding it as life (in an ontologically indefinite manner) plus something else.
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> In suggesting that anthropology, psychology, and biology all fail to give an unequivocal and ontologically adequate answer to the question about the *kind of Being* which belongs to those entities which we ourselves are, we are not passing judgment on the positive work of these disciplines.[12]

We can see how differently Merleau-Ponty read Husserl's understanding of biology (from Heidegger's understanding of biology), as reforming the transcendental and providing a path into the question of the incarnation of consciousness. Heidegger would no doubt reply that by keeping the focus on transcendental consciousness even a phenomenological biology misses the question of Dasein's Being and remains on an ontic level. Heidegger is perhaps more generous towards biology in his 1929 lectures on *The Fundamental Concepts of Metaphysics*, but he still rebukes von Uexküll for confounding the meaning of the word *Welt* in referring to animal *Umwelten*, when *Welt* is only proper to Dasein, animals being *weltarm* or poor in world.[13] As we can see from the first sentences of *Beilage* XXIII, Husserl's position seems rather closer to von Uexküll's. There is not an incompossibilty between human and animal experience, both must be thought as variants of transcendental sense-formation (*Sinnbildung*) that can be, at least to some extent shared; the possibility of biology relies upon it.

I now wish to turn to the text of Husserl's *Beilage* and try to situate it in relation to themes that will be familiar to readers of Husserl, specifically the *Krisis* text, and offer some signposts for further investigation. These signposts must come with a warning. *Beilage* XXIII was edited and placed into *Husserliana* VI over nearly sixty ago (1954) by Walter Biemel. As I mentioned above, the text does not stand alone but should be considered in its relation to the other writings and *Beilagen* of the same period, some of which are published in *Husserliana* VI, and others which were not published until *Husserliana* XXIX in 1993. All editors engage in an act of interpretation with the choice, placement and transcribing of texts, Dr Vongehr has indicated that the edited German text published in 1954 contains some potentially misleading phrases vis-à-vis Husserl's shorthand original.[14] Niall Keane has followed Dr Vongehr's suggestions where possible.

If editing the text in its original language and translating it into English are already interpretative acts, then reading it certainly is. As is clear from what is already written above, I am to an extent reading this text through the lens of Merleau-Ponty's own reading of it. This may indeed be a productive approach, I think it is, but it is by no means a hermetically or hermeneutically sealed one with regard to Husserl's initial intentions.

Biemel indicates that the text is an appendix to §65 of the *Krisis* ("Testing the legitimacy of an empirically grounded dualism by familiarizing oneself with the factual procedure of the psychologist and the physiologist"), but the subject matter seems to bring it closer to the following section §66 ("The world of common experience: its set of regional types and the possible universal abstractions within it: 'nature' as correlate of a universal abstraction; the problem of 'complementary abstractions.").[15] In §66, Husserl situates biology, without saying so explicitly, as a regional ontology, delimited in its scope of objects by a "regional type" (*C* 227). "In life", Husserl remarks, it is regional types that "determine praxis". Here Husserl makes several distinctions pertaining to the field of biology. These regional type distinctions "become explicit with essential necessity through a method of inquiry into essences". The broadest of these distinctions is between living and non-living things, living things can be then further divided into those living "not merely according to drives, but also constantly through ego-acts" (animals) and those "living only according to drives (such as plants)" (227). Against these regional types human beings stand out (for us), as all other animals and presumably living things "have their ontic meaning only in comparison to them" (227). The "for us" is perhaps more relevant here than in other phenomenological discussions where it is taken as a given.

In the footnote on the first page of *Beilage* XXIII Husserl comes close to engaging in a kind of animal phenomenology or general ontology of animal lifeworlds, wherein it becomes apparent that for members of other species, dogs being the example he uses, it is seemingly first of all against a horizon of other species members and a species' world (e.g. other dogs and the dog-world), against which sense formation occurs for animals (including humans). For us, this uncovering of other species' worlds, only acquires its meaning against the background of the human lifeworld, which is our originary source of species-specific evidence and sense-formation. The givenness, or what givenness there is, of the intra-species world of dogs, for example, has its originary source of evidence in our own personal and species-specific lifeworld experience, and is as such an accomplishment of transcendental sense-bestowal (*transzendentalen Sinngebungen*).[16] This is precisely what Husserl tells us in the first line of *Beilage* XXIII: "for the human being, biology is essentially guided by its humanity, which is experiencable in a truly original manner; there alone life is given in an original way and in the most authentic manner through the self-understanding of the biological dimension." How do we get from our humanity to the sense of an animal? In much the same manner as we get to our *humanity* (species-world) from a much narrower scope of concrete intersubjective relations in the first place, namely through empathy. Husserl tells us that biology as a science is founded upon "variant forms of empathy" (*die Abwandlungsformen der Einfühlung*).

This is perhaps the most radical claim in the text and it comes in the first lines.[17] Biology is the science of the sense of the regional type, living things. The sense of other classes of living things (than ourselves), i.e. animals, plants, and perhaps other types of living organisms, is attained through a variation of empathy, which is also the basis for all intra-species human communication. Empathy proceeds by way of the givenness of the

motivational structures of another body (a *Körper* which is bestowed with the sense *Leib*). Another way of putting this would be to say that there is a givenness of the sense-formation (*Sinnbildung*) of and for the other ego. The givenness of the other's more and less individuated structures of motivation is made possible through what Husserl calls an "analogous apperception". The analogy that is formed is between my own body's self-givenness as both *Körper* (physical body-object) and *Leib* (lived-body) on the one hand, and another *Körper* on the other hand. Therein occurs an "apperceptive sense-transfer" from my own lived body to the *Körper* of the other, endowing it with the sense of a *Leib*. Husserl uses the term *Urstiftung* (primary or originary institution) to describe this sense transfer. The transfer of sense is motivated by what we might call signs of similar (*ähnlich*) life that we perceive in the encounter with the other (although Husserl here calls into question just how similar those signs have to be). The index of life is in my own experience and self-perception of myself as *Leib* or living body. Although Husserl calls this analogizing, he is careful to point out that the transfer of sense from my own lived-body to that of the other is not a judgment or active cognition. In this sense it is both immediate and mediate. Immediate in that the transfer occurs on the level of passivity and without the mediation of an active (present to consciousness) cognition, but mediate in that the life of the other is given mediately through the expressiveness of the body (the *Körper* cum *Leib*) and is thus given in a manner distinct from my own.[18]

In *Ideas II*, Husserl talks about a kind of sensitizing of our empathic capacities such that we can come to better understand the motivational structures of another (here he means human person) as both generally similar to our own and distinct in the sense of individuated from a more general style of being motivated (or sense-forming) in a typical manner: typical to the form of our bodies, our cultural background, or at a more general level species-typicality.[19] Husserl writes in *Ideas* II: "The universal typicality of

Corporeality is a presupposition for empathy, and by empathy and Ego-analogon is apprehended", in *Beilage* XXIII Husserl seems to have changed his position with regard to this second claim, (*Ideas* II 284). That this empathic refinement can be expanded to encompass, in a general sense, those other ensouled animals whose acts are egoic is perhaps not that difficult to understand. Humans share with animals a lower egoic stratum of "pure" animality (*Ideas* II 289). That Husserl puts pure in scare quotes indicates that he is aware of the problems associated with arriving at the human by simply piling reason on top of animality – as is the case with other humans, even with ourselves, this tracing of motivational pathways of sense-formation will never be without its blind spots and lacunae.

If we go back to *Beilage* XXIII, Husserl seems to understand biology in a manner not unlike the way he understands the phenomenological or intentional psychology (or character analysis) that he describes in *Ideas* II, i.e. it is largely to do with the identification and genetic analysis of typical forms of sense formation or sense bestowal. In this way, he seems to share the understanding of biology that Jakob von Uexküll promoted in his 1926 *Theoretical Biology*.[20] Biology is about understanding the patterns and types of sense formation in the reciprocal relations between the organism and its *Umwelt* or surrounding world; therein lies the sense of the organsim. This understanding cannot but have its start in the understanding that we gain of our own forms of sense-formation in relation to other human beings and our human world, of which animals and animal worlds are variants for us. Thus the methodology that we use to study them is a variant of the (phenomenological) methodology that we use to study sense formation in our human world. This is what Husserl means in the footnote that he places at the end of the first paragraph (note b), when he writes: "Naturally one always has a biological a-priori starting from the human being: here we have the a-priori of the body's instincts,

originary drives (*Urtriebe*), which bring to fruition (eating, mating, etc.) the a-priori itself. Of course this holds for animals to the extent that animality is actually experienced through empathy. Thus we have a generative a-priori." Generative here should be understood to mean genetic or historic and generative in the sense of formative of sense. Thus the generative a-priori gives us the history of sense-development and the conditions for the development of sense in such and such a species-specific individuated manner.

The generative a-priori is what makes possible the comprehensibility of the "structure of animal environment" and the individuated species specific "social horizons" of animals (humans included): "[I]n the world of dogs, the horizon is an open multiplicity of dogs and the interconnections possible for dogs." The world of dogs of course also contains other non-dog animals and the "counter-structure" of the "non animal world, things, etc", but all of this is formed according to the generative biological a-priori. The same of course holds for humans as well as dogs, all human acts of *Sinnbildung* occur against a horizon of humanity: an open multiplicity of humans and the scope of interconnections possible for humans. This horizon of humanity is passive or unthematic prior to reflection, but it is ever-present in all human activity. Our empathic contact with ensouled animals or ones that live through ego-acts as we do must proceed along the same lines as our empathic relations with other humans. This means that it proceeds according to the expressive nature of animal bodies. Just as human-to-human empathy proceeds by following a kind of curve from individual to general (the horizon of humanity) and back to individual as we follow the corporeally manifest pathways of another ego's structures of sense-formation, so too does empathy with animals proceed. The difference of course lies in the givenness of all other human typicality and idiosyncrasy being against a background of the horizon of humanity. Animal typicality is

also manifest against the horizon of humanity, but the horizon of the animal-world which is manifest as a variant of the human world intercedes, so to speak, between the horizon of humanity and the typical forms of sense-formation within the horizons of these species' worlds

Yet the full scope of Husserl's claim is more radical than this. The subjective element through which animal life is given to us also "guides everything in the world that we call organic life, but which does not receive its life from an *anima* that is analogically understandable, thus it does not receive it from egoity (*Ichlichkeit*)". To be clear as to what Husserl seems to be saying let us rephrase: those life forms that are not egoic (plants and others) do not have a soul (consciousness) that is analogically understandable to us the way that another human's is or seemingly a dog's (for example). The egoic analogy in these cases is established on the basis of the expressive nature of the other being's behaviour. And yet, these non-egoic organisms are nonetheless guided by a subjective element. This seems like a rather un-Husserlian thing to say. There seem to be two ways of interpreting this statement. First, the givenness of all life appears according to an anthropocentric and anthropomorphic bias because of our rootedness in the human lifeworld. Second, non-egoic life (plants and other lower organisms) is guided by the same generative a-priori of life as egoic life, despite their typicality not being analogous in the same manner. For this reason the "variant forms of empathy" still lead back to my egoic life and my lifeworld as an original mode. I favour the second interpretation. Husserl clearly states that this subjective element *does* guide all organic life, not that it appears due to bias. This finding also leads Husserl to say, "biology hides an ontology within itself". I think that we can take this to mean that biology hides the generative a-priori of sense-formation: "biology hides an ontology in itself, an ontology which is not based on intuitive givenness and which is even less analogous to the

ontology of nature; that is of the mathematics of nature: as an ontology that is completed in advance and that can be known in its completeness." Empathy here seems to break its egoic boundaries of intuitive givenness and take on an ontological significance. This is precisely what leads Husserl to make the most radical claim of the text in the fifth paragraph: "[Biology] has no other explanatory task than that demanded by the transcendental, or if you will the transcendental-psychological approach to the lifeworld and its constitution." The task of biology is to disclose the transcendental a-priori of sense-formation beyond the constituting activities of the ego. This does not necessarily conflict with Husserl's claim in the first paragraph that the variant forms of empathy lead back to my own ego as an originary mode. It is fully possible that tracing back, via the *Rückfrage*, the constitutive genesis of my own egoic life, which still stands as a sort of milestone in the investigation, leads to a strata of sense-formation beyond or below, so to speak, the transcendental sense-bestowal of the ego.

But Husserl equivocates and at the end of the same paragraph, he seems to bring biology back within the scope of the transcendental ego and egoic sense-bestowal (*Sinngebungen*) rather than an ontological principle of sense-formation (*Sinnbildungen*). He writes: "The very nature of mathematics and physics makes it much harder for them [than biology], incomparably more difficult, to beak free from the principles of the symbolic-technical art with which they conduct their experiments, an art that connects intuition and symbolic practice, and to see the need to question back (*Rückfrage*) to transcendental sense-bestowal" Merleau-Ponty remarks disappointedly on Husserl's seeming retreat: "All of this, this philosophical dimension of the *Umwelt* (or of the *Lebenswelt*),—of the world and of the mind before their correlative idealizations,—is really different from an idealism: it is the 'constitutive genesis' which is first and in

relation to which idealities are constituted. And yet in the end Husserl presents it again within the frame of constitution as '*Sinngebung*'."[21]

Yet it is certainly worth mentioning that Husserl's remarks in *Beilage* XXIII, even if ultimately presented within the frame of *Sinngebung*, do seem to anticipate developments in the phenomenological biology of figures like Hans Jonas and Evan Thompson. One of Jonas's central claims in both *The Phenomenon of Life: Towards a Philosophical Biology* (1966) and the later *Mortality and Morality: The Search for the Good after Auschwitz* (1996) is that life can only be known by life; it takes a living being to recognize another being as alive. Jonas's main argument in this regard is that a disembodied pure mathematical intellect (Laplace's divine mathematician) would not recognize the autonomy and transcendence of the organism in its relations with its *Umwelt*, but only see a set of processes.[22] It takes a being that has experienced life on the basis of its own embodied and "subjective" being to recognize it in another being. In *Mind and Life* (2009), Evan Thompson takes up Jonas's insight and places it in the context of life as autopoietic selfhood, asking: "Would autopoietic selfhood be disclosable from some disembodied, objective standpoint? Or, rather, are we able to cognize this form of existence because it resembles the form of our own bodily selfhood and subjectivity which we know firsthand?"[23] But this insight, expressed phenomenologically, already seems very much present in Husserl's insistence that biology be considered an empathic science, and as such that it takes as its starting point the primal institution of the sense of my own living body.

Another point shared by Husserl and Jonas (and Thompson) is the "subjective" nature of all life. This is a delicate point and should not be misconstrued. Neither Husserl nor Jonas is suggesting that all living beings have a full blown subjective life.

This is why Husserl insists on the distinction between organisms that "receive [their] lives from an *anima*" or egoity and those that are egoless but nonetheless guided by a "subjective element". What does it mean then for all life to have a subjective element if not as egoic? Jonas is clearer on this point. The recognition of life or of a living organism involves the recognition of a boundary between the organism and its surrounding world. For the living organism, "'world' is there from the very beginning: a horizon opened up by the transcendence of need" (the organism must put worldly matter at its disposal to use in order to metabolise and survive).[24] In this transcendence towards the world to meet its needs, the organism exhibits self-concern and with it some glimmer of subjectivity *in nuce*. Thompson compares this to the Spinozist idea of *conatus*, "life's concern to exist or to carry on being".[25] This makes all life "egocentric" if not "egoic". As Jonas puts it, "its self-concern bridges the qualitative break with the rest of things by modes of selective *relationship*"[26], what we could read, as Thompson does, as a primitive form of intentionality.[27]

Husserl gets bolder still. Following the claim that the concept of organism draws its ultimate sense from the ego of the inquirer as an originary mode, he goes on to state that this also applies to the "construction of organisms out of partial organisms (*Teilorganismen*), which do not function freely and independently for themselves, but rather as simple and necessary elements of construction". What exactly Husserl means by partial organisms is not clear, as he does not elaborate on the point. He seems to have in mind colony organisms like bacteria, fungus, moulds or other forms, and it is likely that Husserl was familiar with the term *Teilorganism* from Driesch. What is curious is Husserl's indication that each partial organism is neither independent nor free, this in itself is unremarkable, but the implication that the colony organism constructed out of partial organisms is free, at least in some sense, does seem an important claim to make. By

default it also seems to transfer whatever sense of freedom we are dealing with here to both egoic and non-egoic animals. This is again a precursor to what we find thirty years later in Hans Jonas. Jonas rejects a Kantian dualist account whereby products of nature (including us) are not free, and only by way of our participation in the sphere of practical reason do we become free beings, capable of obeying the moral law. Rather Jonas wants to situate freedom in nature. Thus Jonas's account bears the signs of a non-reductive physicalist monism that situates freedom, or at least its kernel, in the fact of metabolism itself. As Jonas writes in the opening pages of *The Phenomenon of Life*: "[I]f mind is prefigured in the organic from the beginning, then freedom is. And indeed our contention is that even metabolism, the basic level of all organic existence, exhibits it."[28] This is not the place to go into the details of Jonas's fascinating analysis, suffice to say that it is the independence of form from matter which is manifest in the process of metabolism and in the transcendence of the organism towards the world wherein freedom lies, albeit always a needful freedom and precarious oscillation between being (life) and non-being (death). What is interesting for our purposes here is merely to note that Husserl also seems to attribute a sense of freedom to the whole domain of life, egoic and non-egoic, although not to partial organisms independent of larger complexes or constructed organisms that they form.

In what has been said so far, we have scarcely touched upon the theme of the crisis of the sciences and biology's rather privileged role vis-à-vis the lifeworld, i.e. the ultimate source of evidence of all the sciences. Yet, biology's position as "closer to philosophy and to true knowledge", i.e. what makes it the producer of the "new transcendental questions" that were discussed above has everything to do with its closeness to the lifeworld and following from that, a kind of insulation from the crises which grip the purely physicalist sciences, and those of pure symbolic abstraction,

mathematics. From the physicalist perspective, biology (or at least the biology Husserl has in mind) remains an "almost pitiable" science of lifeworldly signs and meaning. As Merleau-Ponty remarks, "there is no biology which is simply physical"[29], and from a physicalist perspective this has meant "always incomplete" and so a preliminary phase on the way to a complete "phyicalistic explanation".[30] But from a phenomenological viewpoint this is precisely its salvation.

A note should be added first about the theme of crisis. Let us say that there are crises and then there are Crises. All sciences (not least phenomenology itself) are naturally, so to speak, prone to crisis, i.e. an estrangement from the original source of evidence, the lifeworld, and recourse to a purely formalized functionality. When phenomenology becomes a mere exercise of technical terms and the relations between them it has fallen into crisis.[31] The same holds for any science. A science in crisis is "rootless" and freed from "naive evidence", and from the "sources of intuition", or at least on its way to being so.[32] The big Crisis occurs not with this formalization, which cannot but happen to some extent, but with an inability of the science to address it itself. When Husserl speaks of a Crisis in mathematics or physics it is because they have become "pure works of art" referring only to themselves and no longer able to trace the genesis of their meaning structures back to the lifeworld as the source of all originary evidence: "The very nature of mathematics and physics makes it harder for them, incomparably more difficult, to break free from the principles of the symbolic-technical art with which they conduct their experience, an art that connects intuition to symbolic practice, and to see the need to question-back (*Rückfrage*) to transcendental sense-bestowal (*transzendentalen Sinnegebungen*)." In the *Krisis* text, this is precisely where phenomenology steps in to aid the sciences by tracing their "logical constructions" back to their origins in the lifeworld. It is not at all that Husserl objects to the technique of the

sciences, so long as they engage simultaneously in a rigorous *Rückfrage* so that they may retain their relevance to lifeworldly praxis and values.

Biology, by contrast, is able to avoid, or at least is better at avoiding, this fall into crisis because it never takes leave of the lifeworld, it is a "concrete theory of the lifeworld".[33] Husserl insists that its "proximity to the sources of evidence grants it a proximity to the depth of the things themselves". What Husserl means by this is that biology is a descriptive science of the lifeworld, it describes a specific region of the lifeworld. And, by remaining lifeworldly in this sense, biology presented a much easier path into the *Rückfrage* of a lifeworld ontology and eventually transcendental sense bestowal. For example, Driesch's findings concerning embryology, which refuted both preformation and mosaic theories of embryology, entailed actual physical intervention into sea-urchin embryos and then observation of the results.[34] The ultimate task for biology is thus not different from that of Husserl's generative phenomenology: the universal study of sense-formation in the lifeworld. In this sense biology is not dissimilar to anthropology, but merely the science of a broader region. But Husserl goes further than this. Biology is not just a lifeworldly descriptive science, he writes: "In fact, biology as genuinely universal biology, embraces the entire concrete world, and thus implicitly physics too, and in the examination of correlations it becomes a completely universal philosophy." It seems that biology does not only share the same goal as generative phenomenology, but takes its place beside it as queen of the sciences. How is this the case? In the final paragraph of the *Beilage* Husserl refers to biology as a concrete and genuine "psychophysics". Psychophysics generally refers to the study of the relations between physical stimuli and the perceptions they give rise to or affect. It seems difficult to understand what else Husserl could mean here besides a science of the relation between the realist-causal order and the idealist-constituting one, while still holding onto

the ground of the sense-bestowing ego. Just as Husserl refers, in *Ideas II*, to the body as the legitimate naturalization of consciousness, biology here seems to be the science of that naturalization.[35] Biology is the study of the emergence of sense in nature—the generative a-priori. It seems all the more tricky then to maintain a ground of transcendental sense-bestowal (*transzendentalen Sinnegebungen*), but Husserl does his best to maintain this "nearly 'crazy paradox'".[36]

Nonetheless, elevating biology to these heights, essentially placing it on a par with transcendental phenomenology, is what allows Husserl to make the claim that biology is not a science contingent to the conditions of life on our humble planet: "Biology only appears to be limited to our small and insignificant world, […] Rather a general biology has the same worldly generality as physics." As the lifeworld is always the source of meaning, biology on Venus will be the same as biology on Earth, both will draw their sense from the same generative a-priori. This also importantly reminds us that the transcendental is not necessarily human. It is the lifeworld that will form the ultimate source of sense, whether the biologist is human or extraterrestrial. A biology of Venus would always in the end refer to our own earthly lifeworld upon which we make observations and perform concrete experiments. For the alien biologist, the lifeworld may be someplace different but it is a lifeworld all the same. What a "genuine universal biology" demonstrates is that the a priori of life is universal. But what a genuine *Rückfrage* of biology shows is that all sense can be traced back to the sense-bestowal of a transcendental ego.

I have intended this short introduction to be programmatic. Husserl's reflections on the relation between biology and phenomenology have been placed in a context, but I have also tried to show how Husserl may have anticipated developments in the field of

phenomenological biology. Most importantly, I think, I have tried to show where Husserl's own analyses, in texts such as these, might offer the resources to go beyond the boundaries of Husserl's own thought, namely the sense-bestowal of the transcendental ego and towards an ontology of sense formation that is ultimately not grounded in the transcendental ego, but in a movement and development of sense that precedes the ego and from which the constituting ego emerges. One theme has gone unmentioned here; indeed its mention in *Beilage* XXIII is restricted to two words at the end of the footnote "see teleology". An exploration of this theme in its relation to Husserl's thinking on biology in its relation to phenomenology would take us further into the untranslated depth of Husserl's *Nachlass*, a path that we should surely travel.

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[1] The original version of the published text can be found in *Die Krisis der europäischen Wissenschaften und die transzendentale Phänomenologie: Eine Einleitung in die phänomenologische Philosophie, Husserliana* VI, ed. W. Biemal, Den Haag: Martinun Nijhoff, 1954, pp. 482-484. Further information on the original manuscript pages, written in 1936 and transcribed by S. Strasser, can be found at http://hiw.kuleuven.be/apps/hua/details.php?cmd=search&words=K%20III%2018&cat=signature [last accessed 15 November 2012]

[2] Husserl, E. *The Crisis of European Sciences and Transcendental Phenomenology*, trans. D. Carr, Evanston: Northwestern University Press, 1970 [hereafter *C*]. The basis for the 1970 English translation by Carr was the 1954 edition, edited by Biemal.

[3] Thompson, E. *Mind in Life*: *Biology, Phenomenology and the Sciences of the Mind*, Boston: The Belknap Press of Harvard University Press, 2009.

[4] Ibid. pp. 162-63; see, Jonas, H. *Mortality and Morality: A Search for the Good after Auschwitz*, Evanston: Northwestern University Press, 1996, p. 91

[5] It is not clear whether Merleau-Ponty was able to consult the sheets, written in Husserl's idiosyncratic version of Gabelsberger shorthand (Stephane Strasser did not transcribe these pages until 1943) that were to become *Beilage* XXIII when he visited the Husserl Archives in 1939. According to H.L. van Breda, during Merleau-Ponty's visit to Leuven in April 1939 he consulted Eugen Fink's transcription of §28-73 of the *Krisis* text. It is possible that he examined the additional untranscribed shorthand sheets with Fink's aid, although there is no apparent record that he saw the appendix prior to its publication in 1954. See, van Breda, H.L. "Merleau-Ponty at the Husserl Archives in Leuven" in

Merleau-Ponty, Texts and Dialogues on Philosophy, Politics, and Culture, eds. H.J. Silverman and J.B. Barry, Jr., Atlantic Highlands: Humanities Press, 1992, pp. 150-161

[6] Merleau-Ponty, M. *Husserl at the Limits of Phenomenology*, trans. B. Bergo and L. Lawlor, Evanston: Northwestern University Press, 2002, p. 76

[7] Merleau-Ponty, M. *Notes de cours au Collège de France 1959-1961*, ed. S. Ménasé, Paris: Gallimard, pp. 383 – 388, see also pp. 88-91. Merleau-Ponty broke the appendix up into five sections, which he then prepared individual commentary on, interspersed with notes to himself to read the section he was commenting on.

[8] Ibid. p. 37 (my translation).

[9] Ibid. p. 89 (my translation); the notion that the idea of the (natural) incarnation of consciousness is already present in Husserl's work is what leads Merleau-Ponty to write elsewhere "Doesn't [Husserl's] own analysis really obligate [us] to consider constituting subjectivity as an eminent case of idealisation?" (Merleau-Ponty, *Husserl at the Limits of Phenomenology*, p.76).

[10] See, Husserl, E. "Das Gesetz der Fortpflanzung" (ende August 1936), *Die Krisis der europäischen Wissenschaften und die transzendentale Phänomenologie, Ergaänzungsband, Texte aus dem Nachlass 1934-1937*, ed. R. Smid, Dordrecht: Kluwer, 1993, pp. 317-320.

[11] See, Merleau-Ponty, M. *Nature, cours du Collège de France*, ed. D Séglard, Paris: Editions d' Seuil, 1995, specifically the second course 1957-58. The lack of reference in Merleau-Ponty's *Nature* lectures to what is now text Nr. 27 of *Husserliana XXIX*, suggests that he did not have access to the text when he visited the Husserl archives in 1939 or at any time before 1958. He did have access to the K III (*Krisis-Gruppe*) of manuscripts, in which this text is contained, at the Centre for Husserl Archives that had been established in 1957 at the Sorbonne, from June 1959 until the end of 1960. See, van Breda, "Merleau-Ponty at the Husserl Archives", p. 160

[12] Heidegger, M. Being and Time, trans. J. Macquarrie & E. Robinson, London: Blackwell, 1962, p. 75

[13] Heidegger, M. *The Fundamental Concepts of Metaphysics, World, Finitude, Solitude*, trans. W. McNeill and N. Walker, Bloomington: Indiana University Press, 1995, p. 192

[14] Biemel also chose himself where on the original sheets, upon which Husserl had written in stenography, to begin the transcription of the *Beilage*. There is text on the sheet that does not belong to another section. Thus Biemel appears to have omitted some of the text. A retranscription of the original sheets would be needed to gauge the significance of this, although Dr Vongehr has indicated that Biemel's decision was likely the appropriate one as the omitted material did not deal as explicitly with biology as the sections that made it into the edition.

[15] There does not seem to be an indication from Husserl that this Beilage should be attached to §65, it appears to be have been the decision of Biemel.

[16] We can compare this in its similarity with and distinctness from what Heidegger says above

[17] "For the human being, biology is essentially guided by its humanity, which is experienceable in a truly authentic manner; there alone life is given in an original way and in the most authentic manner through the self-understanding of the biological dimension. Such is the guiding thread for all biology and *for all the variant forms of empathy*" (my emphasis).

[18] See the fifth of Husserl's *Cartesian Mediations* for the full account of his theory of intersubjectivity and the "analogizing apperception" as an "*Urstiftung*" in particular.

[19] "Personal life manifests a typicality and each personal life manifests a different one […] We capture the development of a person if we reconstruct the course of his life and make it intuitive in such a way that the entirety of his development as a man becomes

comprehensible in an experiential manner […] 'In an experiential way' means that it occurs there as it does in human life in general", Husserl, E. *Ideas Pertaining to a Pure Phenomenology and to a Phenomenological Philosophy, Second book: Studies In the Phenomenology of Constitution*, trans. R. Rojcewicz and A. Schuwer, Dordrecht: Kluwer, 1989, p. 284-85 [hereafter *Ideas* II]

[20] See, von Uexküll, J. *Theoretical Biology*, trans. D.L. Mackinnon, London: Kegan Paul, 1926, particularly chapter five "The World of Living Organisms"

[21] Merleau-Ponty, *Husserl at the Limits of Phenomenology,* p. 75

[22] For the divine mathematician, "the life process will then present itself as a series of events on the part of those persisting units of general substance: *they* are the real agents, moving—each for causal reasons of their own—through given configurations. *One* such configuration would be the organism. Just as the wave is nothing but the morphological sum of the successive entry of new units into the total movement, which thanks to it moves forward, so too the organism could be regarded as an integral function of metabolism instead of metabolism being seen as a function of the organism. All the features of a self-related autonomous entity will ultimately appear as merely phenomenal, i.e., fictitious.

"Would we, as is usually the case, grant that this result of strictly physical analysis is *truer* than our naively sensuous view of the object? Definitely not in this case" (Jonas, *Mortality and Morality*, pp. 64-65)

[23] Thompson, *Mind in Life*, p. 163

[24] Jonas, *Mortality and Morality*, p. 69

[25] Thompson, *Mind in Life*, p. 162

[26] Jonas, *Mortality and Morality*, p. 69

[27] Thompson, *Mind in Life*, pp. 22-27

[28] Jonas, H, *The Phenomenon of Life: Toward a Philosophical Biology*, Evanston: Northwestern University Press, 1966, p. 3

[29] Melreau-Ponty, *Husserl at the Limits of Phenomenology*, p. 76

[30] See, *Beilage* XXIII, paragraph 4

[31] On this point, see, Heidegger: "*Like every other scientific method, phenomenological method grows and changes due to the progress made precisely with its help into the subjects under investigation. Scientific method is never a technique. As soon as it becomes one it has fallen away from its own proper nature.*" Heidegger, M. *The Basic Problems of Phenomenology*, trans. A. Hofstadter, Bloomington: Indiana University Press, 1982p. 21)

[32] "The 'explanation' of the physicist, on the contrary, 'knows' what it knows of the world in an incomprehensibility that is severed from all true knowledge", see *Beilage* XXIII, paragraph 5

[33] It would be interesting to know how Husserl would react to the mathematical biology pioneered by people like Alan Turing and René Thom. Or the dynamic systems theory employed by the enactive approach of Thompson. Turing's foundational studies in morphology (see, Turing, A. M. "The Chemical Basis of Morphogenesis". *Philosophical Transactions of the Royal Society of London* 237 (1952): 37–72), were influential in paving the way for approaches like that of Alain Prochiantz, who seeks to defend a romantic conception of nature against the positivism of the contemporary biological sciences (see, Prochaintz, A. *Les Anatomies de la Pensée, à quoi pensent les calamars?*, Paris: Editions Odile Jacob, 1997, p. 70). This is a question for another time.

[34] Driesch split embryonic cells after their first division with the hypothesis that each half would now form the corresponding half of the organism, instead he found that each cell developed into a complete sea urchin.

[35] "The 'legitimate' naturalisation of consciousness consists in the fact that Body and soul form a genuine experiential unity and that in virtue of this unity, the psychic obtains its position in space and time" (*Ideas* II 176).
[36] Merleau-Ponty, *Husserl at the Limits of Phenomenology,* p. 76