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THEORETICAL / PHILOSOPHICAL PAPER

The Emergence of Practical Self-Understanding

Human Agency and Downward Causation in Plessner's Philosophical Anthropology

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Abstract
Helmuth Plessner's *Levels of Organic Life and the Human [Die Stufen des Organischen und der Mensch, 1928]* is one of the founding texts of twentieth century philosophical anthropology (understood as philosophical reflection on the fundamental characteristics of the human lifeform). It is argued that Plessner's work demonstrates the fundamental indispensability of the qualitative humanities vis-à-vis the natural-scientific study of man. Plessner's non-reductionist, emergentist naturalism allots complementary roles to the causal and functional investigations of the life sciences and the phenomenological and hermeneutic interpretation of the phenomenon of life in its successive levels and stages. Within this context, human agency can be understood as a higher-order property of organic life, which act by the selective activation of lower-level psychophysical powers. Plessner's three 'anthropological laws' are used to situate the notion of practical self-understanding in between two extremes: deterministic views that deny human freedom and responsibility and views that ascribe an unrealistic amount of autonomy to human beings.

Keywords Helmuth Plessner · Philosophical anthropology · Non-reductionist naturalism · Emergentism · Downward causation · Human agency · Practical self-understanding

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Introduction

One of the most striking developments in academia is the ongoing colonization by the life sciences of themes that once exclusively belonged to the humanities. Obvious examples are evolutionary and neuroscientific explanations of art, morality and religion, but one could also think of the medical transformation of melancholia into depression. In all these cases traditional attempts to *understand* the *meaning* of these human phenomena are replaced by quantitative approaches, resulting in *causal* and *functional* explanations, if not by evidence-based medical or therapeutic treatment.[1] Even within the humanities itself—for example in the various branches of naturalism and materialism in the philosophy of mind—attempts are being made to reduce phenomena such as first-personal experience and normativity, that at first sight do not have a place within the natural and social sciences, to physico-chemical substrates or observable behavior.

This kind of reduction threatens to undermine concepts such as practical self-understanding and agency. One could think of Richard Dawkins' reductionist determinism in *The Selfish Gene*, according to which human beings are no more than "survival machines—robot vehicles blindly programmed to preserve the selfish molecules known as genes" (Dawkins 2006: xxii). Or of the famous experiment of Benjamin Libet, showing that conscious decisions to act are preceded by an unconscious 'readiness potential' in the brain (Libet 1985), which have been taken to show the irrelevance of conscious will in human action, and which even calls—at least for many interpreters of the experiment—the very notion of free will into question (Murphy et al. 2009).[2]

The reaction of representatives of the humanities to the aforementioned colonization of their domain of study is twofold. Most scholars tend to avoid the discussion with the life sciences and entrench themselves in the shrinking parts of the domain not yet conquered by the natural and social sciences. A minority takes a less defensive approach, for example by arguing that the *qualitative* kind of understanding we come across in the humanities (as well as in everyday life) is indispensable vis a vis the *quantitative* investigation of human phenomena like art, morality, and religion. The reason is that the meaning of those phenomena is always *presupposed* in scientific explanations of them. In order to understand the findings of scientific research, the argument goes, these explanations have to be related to our practical self-understanding, and to the first- and second-person perspectives, agency and normativity we experience within our lifeworld and which find their articulation in the humanities.

[1] Although I will restrict myself here to the natural sciences, much of what will be argued is also applicable to social sciences which have adopted the deductive-nomological, functional, and quantitative methods of the natural sciences, such as experimental psychology.

[2] However, it should be noticed that Libet himself, for reasons that are quite similar to the argument I will develop in the following, is not among these interpreters (Libet 1999). I will come back to Libet in the last section of this article.

In this article I will discuss the way philosopher, biologist and sociologist Helmuth Plessner (1892–1985) in his magnum opus *Die Stufen des Organischen und der Mensch. Einleitung in die philosophische Anthropologie* [The Levels of the Organic and the Human. Introduction to Philosophical Anthropology, 1928] argues for the fundamental indispensability of the humanities vis a vis the natural-scientific study of man.

In the next section, I will situate Plessner's phenomenological and hermeneutical interpretation of living nature, as developed in *Die Stufen,* in its historical context. I will argue that this approach leads Plessner beyond the unfruitful opposition that existed, in the first decades of the twentieth century, between the 'greedy reductionism' of Neo-Darwinism, and the 'greedy transcendentism' of Neo-Vitalists like Hans Driesch. Plessner defends a *non-reductionist naturalism*, which allots complementary roles to the causal and functional investigations of the life sciences and the phenomenological and hermeneutic interpretation of the phenomenon of life in its successive levels and stages.

Against this methodological background, in the third section I will elucidate Plessner's non-dualist interpretation of the embodied, embedded, extended and enacted nature of the psychophysical unity of life. I will explain the key concepts 'dual aspectivity,' 'boundary realization,' and 'positionality,' and will describe and analyze the types of *positionality* of the successive lifeforms of plants, animals, and human beings. With regard to the human being, I will also point at the extended character of this lifeform. In addition, I will refer to recent work in the life sciences that underpin Plessner's philosophy of nature and philosophical anthropology.

In the fourth section, I will relate Plessner's interpretation of life's *Stufen* to emergentist theories developed by his British contemporaries Alexander, Morgan, and Broad, as well to the present re-emergence of *emergentism* in the life sciences. I will discuss the critique that was formulated in the middle of the twentieth century against the non-deducibility the British emergentists ascribed to emergent phenomena. I will argue that Plessner's emergentism is closer to more recent versions of emergentism—both in the life sciences and in philosophy—that attempt to overcome the earlier critique by shifting the attention from non-deducibility to *downward causation*, understood as the constraining of possible events on lower levels by the organizational structure of higher levels, as we find it for example in epigenetic control of gene expression. It will be demonstrated that in Plessner's philosophical anthropology, the higher levels play a similar role in the regulation of the expression of lower-level functions.

Against this background, in the fifth and final section, I will, using Plessner's three 'anthropological laws,' contrast practical self-understanding, as understood by philosophical anthropology, with, on the one hand, deterministic views which deny human freedom and responsibility, and on the other, views that ascribe an unrealistic amount of autonomy to human beings. In the final analysis, practical self-understanding will turn out to be the ability to build a house for a homeless species, realizing that the completion date will always remain a future one.

Philosophical Anthropology and the Interpretation of Living Nature

One way to interpret the emergence of philosophical anthropology in the first half of the twentieth century is to conceive of it as a reaction to the revolutionary developments in the natural sciences that took place since the second half of the nineteenth century.[3] Especially Darwin's theory of evolution necessitated a fundamental reconsideration of 'the human place in the cosmos' (see Scheler 1928). The mechanistic interpretation of Darwin's theory of evolution, according to which a simple algorithm of reproduction, variation and selection is responsible for the entire evolution of life on earth, did not only question the alleged gulf between human beings and (other) animals, but even questioned the gulf between animate and inanimate. It seduced many Darwinians to a 'greedy reduction' of life to a deterministic chain of chemical processes (Dennett 1995).

The main reactions of those who opposed this mechanistic interpretation of Darwin's theory of evolution were twofold. Negatively, the opponents tried to underpin Kant's claim in the *Critique of Judgement* [*Kritik der Urteilskraft*, 1790] that there will never be a biological Newton who could explain teleological phenomena such as the emergence of even a single blade of grass (Kant 2007: 228 [B338]). Positively, the opponents tried to demonstrate that there are phenomena or principles that cannot be explained by a naturalistic and mechanistic account. They either postulated the existence of a vital, teleological principle, a life-force fundamentally distinct from biochemical reactions, as did, for example, the Neo-Vitalist and former teacher of Plessner Hans Driesch by implementing an Aristotelean notion of entelegy, or of a spiritual, metaphysical dimension, as did Max Scheler by opposing a divine Spirit (*Geist*) to the 'drive driven' life force (*Drang*). As different as the approaches of these two contemporaries of Plessner were, by radically opposing themselves to the mechanistic approach of the natural sciences, they both deepened the emerging gap between the natural sciences (*Naturwissenschaften*) and the humanities (*Geisteswissenschaften*).

Plessner, coming both from biology and philosophy, took another, more fruitful approach, which endorses the naturalization of the worldview, though with a number of important qualifications. In 'A Newton of a blade of grass' ['Ein Newton des Grashalms']—written in 1964, one decade after the first adequate description of the double helix structure of DNA molecules, which marked the beginning of the turbulent history of molecular biology—Plessner states that by now even the phenomenon of (inner) teleology has become subject to a biochemical analysis. Several decades before the emergence of synthetic biology, Plessner already admitted that "eventually chemists should be able to synthesize a small polynucleotide specifically arranged, hence one now dares to think of synthesizing in the laboratory a structure possessing genetic continuity and of all the tremendous implications of such an accomplishment" (Plessner 1980: VIII, 262).[4]

[3] This section is partly based on my paper 'Philosophical anthropology 2.0' (de Mul 2014b).

[4] In the following, all references with Volume number in Roman figures, followed by a page number in Arabic ones, refer to Plessner's *Gesammelte Schriften* (Plessner 1980). Quotes from *Die Stufen des Organischen und der Mensch* are taken from Millay Hyatt's translation of this book, entitled *The Levels of the Organic and the Human*, which will be published by Fordham University Press in 2019. All other quotes from Plessner's Gesammelte Schriften have been translated by the author.

This does not lead Plessner to a reductionist, mechanistic interpretation. Biochemical analysis may eventually clarify how the vital and psychic functions of living organisms are being materialized, but not what life in its subsequent stages and various expressions *is*. According to Plessner, "[i]t is here that we find the limits of the Newton of a blade of grass, not in the phenomenon of teleology, as Kant thought" (VIII, 262).

However, as much as Plessner rejects the 'greedy reductionism' of the mechanistic worldview, which attempts to explain "too much with too little" (Dennett 1995: 82), he also rejects the 'greedy transcendentism' of the vitalist and metaphysical alternatives of Scheler and Driesch, which explain 'too little with too much' and for this reason inevitably are driven back to intuitions of a transcendent God, old fashioned panpsychism (IV, 18f.) or to an unmeasasurable entelechy, which is "an untenable makeshift solution, a contradiction in itself" (IV, 32).

To clarify his own position, Plessner uses the term 'hylozoist,' which Driesch used to debunk the approach in *Die Stufen*, as an honorary nickname. After all, the idea that life is inseparable from matter (IV, 177), and that human life is a psychophysical unity (IV, 75), is not only defended by ancient hylozoists like Thales, Anaximenes, and Heraclitus, but it is indeed also the very presupposition upon which Plessner's philosophy of nature and philosophical anthropology rest.

Philosophy, as Plessner understands it, should take the scientific understanding of life forms as its starting point in order to elucidate the "immaterial dimensionalization of lived matter" (VIII, 261). Or, as he expresses it in the language of Kant's transcendental philosophy, it is an "a prioristic theory of the essential characteristics (*Wesensmerkmale*) of the organic" (IV, 158), aiming at a phenomenological description of the "living form" (*lebendigen Form*; IV, 9, 187). These characteristics are objective, though not in a quantative, but *qualitative* sense, because they are connected to the inner experience of being alive of the observer. Using a phrase borrowed from Meyer and Helmholtz, Plessner also designates them as "organic modals" (*organische Modale*). The organic modal is a "qualitatively final" (*qualitative Letztheit*), which "cannot be further analyzed by reducing it to other qualities" (IV, 158).

In the foreword to the second edition of *Die Stufen* (1966), Plessner further qualifies his aprioristic approach by distinguishing it from Kant's—in his view too intellectualistic—conception of the a priori. He emphasizes that the 'living form' is no theoretical construction, but it is observed in the *visual structure* of living things (*an der anschaulichen Struktur sogenannter Dinge unserer Wahrnehmung gewonnen*) IV, 28): "This theory is not, then a priori by virtue of its starting point, as if it wanted to develop a deductive system from pure concepts and axioms, but only by virtue of its regressive method of finding a fact's internal enabling conditions" (IV, 29f.). Plessner further defines these conditions of possibility as the "material a prioristic" characteristics of life (IV, 172; see VIII, 392ff.). They are

> preconscious a priori forms, categories of existence, vital categories, belonging to deeper layers of existence of the bearers of life, i.e. organisms (understood not as existing objects but rather as living subjects), upon

> which the togetherness and cooperation of the organism and its environment [*Umwelt*] rests. (IV, 110)

Because only "life understands life," as Plessner approvingly quotes Dilthey's life-philosophical credo in *Die Stufen* (IV, 59), the vital categories can only be recognized *by* living things. Just like you cannot understand what it means to see if you are born blind, it is impossible to recognize life unless you have the inner experience of being alive yourself. This not only applies to everyday life encounter with living things, but to scientific investigations of living phenomena as well. In order to be able to research and explain how specific expressions of life come about, the life scientist has to recognize the phenomenon *as* a living entity: "What vitality exactly means, is of interest for the biochemist as well. He needs at least some model (*Leitbild*) in order to determine during the course of his analysis the level of approximation" (VIII, 264).

Although recognizing and understanding living things is part of everyday life, in order to support research in the life sciences, there is a need for a more systematic interpretation of the *vital categories*, inherent in all organic expressions of life. The explication of these qualities of the living form is the task of a hermeneutical phenomenology of living nature, as developed in *The Levels of the Organic and the Human*.

As the title already indicates, Plessner's phenomenological hermeneutics of life does not consist in a singular description of life, but offers a description and analysis of the subsequent levels (*Stufen*) of organic life, from the most basic characteristics to increasingly more complex forms. As such, is not only promises to bridge the gulf that exists between the objects studied by the life sciences and humanities, but also to provide the building bricks for a philosophical anthropology, which not only offers the humanities a psychophysiological foundation, but also elucidates the nature of practical self-understanding.

Life and Its Levels

For Plessner, being a biologist, it is evident that a philosophy of living nature has to take the *living body* as its starting point. Life is essentially *embodied,* and the body is more than a collection of bones, muscles, and nerves, but instead—as we daily experience—a "living reality" (*lebendige Realität*; IV, 75). And as such, we experience it as "a psychophysical indifferent or neutral living unity" (IV, 70). Plessner explicitly opposes the Cartesian dualism of *res cogitans* and *res extensa*, in which, in his view, the poles we experience in life—the psychic and the physic, mind and body, the inner world and the outer world—are 'ontologically fundamentalized' (IV, 78f.). In contrast to Descartes' ontological dualism, Plessner defends a perspectivistic dualism. Depending on our perspective—inner or outer experience—the neutral life unity appears to us as a psychic *or* physical phenomenon, mind *or* body, inner world *or* part of the outer world. For Plessner, this "dual aspectivity" (*Doppelaspektivität*; IV, 100, 127ff.) is a fundamental feature of all life, because it points to a fundamental characteristic that distinguishes living bodies from lifeless ones.

All bodies occupy a limited space in the world, but this material finitude can assume two fundamental different forms. All bodies have contours, which demarcate their limits in space (IV, 151). What distinguishes a living body from a lifeless one, is that its contours have the shape of a *boundary* (*Grenze*). A boundary distinguishes itself from sheer contours because it permits crossing (*Grenzübergang*). A boundary not only *closes off*, but also *opens up* the living body, both to what lies outside and to what lies inside itself. Whereas the contour does neither belong to the thing or the surrounding medium, the boundary is part of the living thing itself. We might even say that life, at a fundamental level, takes place *as* this boundary phenomenon. After all, the aforementioned dual aspectivity of life is inherently connected with the fact that the living thing has a relationship to both sides of its constituting boundary (IV, 138f.). Plessner calls this relationship to the constituting boundary the *positionality* (*Positionalität*; IV, 184) of the living thing. Thanks to its boundary the medium of the living body appears to it as its *environment* (*Umwelt*). The living thing and its environment are equiprimoridal. Living things are structurally *embedded* in their environment (IV, 9).

This embeddedness can already be observed in the simplest forms of life known to us: unicellular organisms such as bacteria. Such single-celled organisms have a semipermeable membrane, which not only separates them from the environment in which they are embedded, but also enables them to take food from this environment and to expel waste products into it (metabolism). It is not without reason that in origin of life research the membrane is considered to be one of the most fundamental building bricks of life, because it is internally connected with other fundamental characteristics of life, such as metabolism, growth, and reproduction (Luisi 2006). After all, metabolism is equiprimoridal with having an inside and an outside, and in order to grow or reproduce, an enclosed structure which can grow and reproduce is presupposed.

In multicellular organisms such as plants, animals and human beings, which have a much more complex organization and cell specialization, the boundary phenomenon manifests itself on a macro level in new forms, for example as bark, shell, or skin. Moreover, on these higher levels of organization, boundaries often find an *extended* expression, for example in birds' nests, lion's dens, houses and city walls, as well in the form of concrete and more abstract territories, marked—for example—by smell, boundary posts, or copyright signs (Mugerauer 2014).

Positionality endows the living body with a qualitatively different relationship with space and time. Just like all physical bodies, the living thing is spatial and temporal in the sense that it is *in* space and time. However, the living thing "not merely occupy a position in space, but has a place, or to be more precise: it claims a place of its own accord" (GS IV, 186). "In addition to its spatiality, it is into space or spacelike (*raumhaft*) and accordingly has its natural place" (GS IV, 187). In the same way, the living thing not only is in time, but it *has* and *claims* its own time, it is time like (*zeithaft*), marked by a past and oriented towards its future state (IV, 231f.). It is always beyond the actual moment. Because of this dynamic character (IV, 187), living things possess an *immanent teleology* (IV, 237) and *intentionality* (IV, 240). We find these characteristics already on the basic level of unicellular organisms. If we observe, for example, the behavior of motile bacteria swimming uphill in a food

gradient of sugar, moving forward by rotating their flagella in coordination like a propeller, we immediately recognize the intentionality and immanent teleology of life (see Thompson 2007: 157).

The space- and timelike character of living things also makes clear why boundaries, though constitutive, are not simply given. Although the living being is always already "placed in its boundaries" (*in seine Grenze gesetzt*), at the same time it has to set up (*setzen*) its own boundaries constantly (IV, 183, 364). The living thing has to realize—that is: to build and to maintain—its borders itself. Boundaries are *enacted*, they only emerge and sustain in action. The living thing is, using a term introduced in the 1970s by biologists Humberto Maturana and Francisco Varela, *autopoetic* (Maturana and Varela 1980). This boundary realization (*Grenzrealisierung*;) (IV, 175) is a life-long task, it lasts until the living thing passes away.

According to Plessner, the boundary phenomenon is yet for another reason crucial for an adequate understanding of life. Although all living things have to realize their boundaries, depending on the way they relate to their own boundaries, that is: their specific positionality, different levels (*Stufen*) of boundary realization can be distinguished. Although the biological world consists of millions of different species, Plessner focuses on three basic forms of positionality, those of the plant, the animal, and the human being.

Because of their semipermeable boundaries, all living things are characterized by a tension between openness (towards their environment) and closure (within their boundaries). *Plants* are predominantly characterized by an *open positionality*. Although their interaction with the environment is mediated by their body, their expressions merge with their environment in a direct way. They do not have a center that regulates the interaction with the environment and in that sense their 'expressions' happen to them rather that they are executed by them. Although plants show ingenious forms of perception and manipulation of their environment (Pollan 2001), they do not seem to have a relationship to their own positionality. As living bodies, plants have an inside and an outside, but they do not relate to them. From a human perspective, we could say that the plant is characterized by a boundary that has nothing on either side, neither subject nor object (IV, 282f.).

A relationship with its own positionality first appears in the *closed* or *centric* positionality of *animals*. Although the animal's interaction with the environment, just like in the case of the plant, is mediated by its body, it distinguishes itself from the plant because there is a second mediation taking place, connected to the emergence of a mediating center. From the perspective of outer experience, this center can be localized in the brain, connected through the nervous system with the animal's sensorimotor apparatus. From the perspective of inner experience this level of positionality is characterized by an *awareness* and an *intentional control* of the environment. Thus, what distinguishes the animal from the plant is that it not only *is* a living body (*Körper*), but also *has* its body (*Leib*), as an instrument—or better: an organized teleological whole of specialized instruments (IV, 316f.).[5]

[5] In so far plants can also be regarded as teleological systems, they display an 'intentionality without intention,' that is: an intentionality without awareness.

Because of the second mediation by the center, the body now occupies a position in between the living being (that now becomes the subject of the body, a *self*) and the environment (which appears now to this self as an external, alien field). Although the animal remains part of its environment, the *centrality* that characterizes its positionality is coupled with the *frontality* of its environment (IV, 303f.). Their opposition transforms the intentionality of life in a restless dynamic of needs, instincts, and drives and struggles between these forces, and an endless competition and cooperation between individuals and species.

Being part of the kingdom of the animals, *human beings* are also still characterized by centric positionality. However, the human life form distinguishes itself from that of other centric beings by establishing an additional relationship with this center. Although centric beings experience their environment and their bodies, and acquire mastery over their own body, they do not experience their selves. They live from within their center beyond their center, but they do not live *as* center. As such they are absorbed in the here and now of their centered experience. Human beings, on the other hand, are not only aware of their environment, but are also aware of their center, their—past, present, and future—self. Here we come across a third mediation: "The human being not only lives (*lebt*) and experiences (*erlebt*), but also experiences himself experiencing (*erlebt sein Erleben*)" (IV, 364). As to their positionality, human beings are characterized by an *excentric positionality*. Because of the distance towards themselves, human beings, unlike most other animals, possess self-reflection.[6] Although the human being remains centric, at the same time he is always beyond its center: "He knows himself to be free and despite this freedom to be bound in an existence with which he struggles and which inhibits him" (IV, 364).

As a result of their excentric positionality, human beings have a tripartite relationship to their bodies: "The living thing *is* body, is *in* its body (as inner life or psyche) and *outside* its body, as the point of view from which it is both. An individual characterized positionally by this threefold structure, is called a *person*" (V, 365; italics JdM). This formulation makes clear that we should not define human beings as animals plus something extra (as in the traditional definition of the human being as an *animal rationale*). Excentric positionality transforms the human lifeform as a whole. Each of the elements of tripartite relationship transform into a part of an entirely human world (*Welt*).

Although the living person, insofar he remains a centric being, keeps experiencing the frontality of his *environment* in an immediate way, at the same time his excentric positionality transforms this environment into an *outer world* (*Aussenwelt*). A person's body remains a lived body (*Leib*), but it now also appears as an object (*Körper*) among the other objects in this outer world. For example, as human beings, we not only experience our hand from within, as a part of our body that makes us

[6] Nowadays it is generally assumed that several higher mammals, such as apes, elephants and dolphins, possess self-awareness as well. Although Plessner in *Die Stufen* claims that excentric positionality "remains reserved for humans" (IV, 361), it should not be forgotten that excentric positionality is not so much a single species feature, but a structure that, like centric positionality, in principle can be realized in different ways by different species, and in principle also by artificial forms of life.

experience the resistance of the apple we take from the fruit bowl, but the same hand also appears as an outer object, which, just like the apple, is outside us, as an external body build from molecules and atoms, measurable like any other object. But because of the dual aspectivity of our (ex)centric experience, the apple doubles, too. It appears to us both as a phenomenon and as a thing in itself, an unknowable 'X,' that carries the phenomenal properties (IV, 368).

The same doubling appears to the inner life. Although we, just like other animals, keep experiencing our inner life—our perceptions, volitions, feelings, etc.—as products of our agency, at the same time they appear as part of an *inner world* (*Innenwelt*), a 'stage' on which they appear as something that happens to us. Probably for that reason the German word *Erlebnis* (lived experience) has a double connotation: it refers both to our agency and to our experience that perceptions, volitions, feelings do overcome us from the outside.

Perhaps most decisive for excentric positionality is that it enables us to take the perspective of other human beings. Next to the first-person perspective that characterizes our inner world and the third-person perspective from which we experience the outer world, excentric positionality constitutes a second-person perspective, the ability to take the perspective of others and to have first- and second-order collective intentions (see Tomasello 2008). As such, excentric positionality discloses a shared world (*Mitwelt*), the historical and cultural world of shared practices, norms and values (IV, 373). This shared world is characterized by dual aspectivity, too. On the one hand, human beings are the creators of this shared world, but no less they are shaped by this world that precedes and exists beyond the individual.

It is important to notice that the awareness of the existence of the other persons—'a theory of mind'—is not so much the result of analogical reasoning, but is already given with the excentric structure of our lifeform. The perspective of the other is inherently part of our excentric positionality. We find it expressed, for example, in the fundamental human tendency to anthropomorphize and personalize inanimate things.

According to Plessner, the excentric positionality of our lifeform is both a curse and a blessing. Human beings are characterized by a fundamental brokenness between their (first-person) centric perspective and their (second- and third-person) excentric perspective, which they have to live but cannot fully reconcile. As a result, we do not fully coincide with our centric selves and for that reason are characterized by a fundamental alienation, a "constitutive homelessness" (IV, 385) and a fundamental need to overcome this alienation by realizing ourselves and by creating 'a home' for ourselves with the help of technical and cultural artefacts and traditions. For that reason the human being is "artificial by nature" (IV, 383) and "continues to push for ever new realizations (*nach immer andere Verwirklichung*) and in this way leaves behind a *history*" (IV, 416). And because of the reflectivity of their excentric lifeform, human beings are not only characterized by an impressive cultural history, but by a long tradition of humanities as well, including reflections on the question what it means to be human, and having an awareness of ourselves as moral agents. In this sense, Plessner's philosophical anthropology can be regarded as the very explication of conditions of the possibility of having practical self-understanding.

However, given Plessner's naturalism, the question remains how practical agency and the implied freedom is possible in a world, in which—according to the dominant scientific world view—everything is determined by natural laws and causal relationships. After all, it is one thing to give a phenomenological *description* or a hermeneutical *interpretation* of human agency and freedom, and quite another to *explain* how such an agency is possible from the perspective of the life sciences. In order to provide the required explanation, we need a more detailed exposition of the emergentist dimension of Plessner's philosophy of nature.

Philosophical Anthropology and Contemporary Theories of Emergence

As Phillip Honenberger has noticed in his contribution to the edited volume *Naturalism and Philosophical Anthropology*, Plessner's philosophy of nature can be considered as a form of *emergentism* (Honenberger 2015: 115). There are indeed a number of striking similarities between *Die Stufen* and the works of the so-called British emergentists, who published their main works around the same time, including Alexander's *Space, Time, and Deity* (Alexander 1920), Morgan's *Emergent Evolution* (Morgan 1923) and Broad's *The Mind and Its Place in Nature* (Broad 1925). In *Die Stufen* Plessner does not refer to these authors (except for one casual mention of Morgan in his discussion of Volkert's theory of the perceptual consciousness of animals, IV 334), but just like Plessner, the British emergentists tried to find a 'third way' for the life sciences beyond the equally unsatisfactory alternatives of vitalism and mechanism. Or as Christophe Malaterre expresses the impetus of the British emergentists: "The concept of emergence was actually construed not only an alternative to vitalism and its dualist ontology, but also as an alternative to mechanism and its constraining determinism" (Malaterre 2013).

This is not the place to discuss the theories of Alexander, Morgan, and Broad, and the subtle differences between them, in detail. Instead, I will restrict myself to a concise comparison of the four basic characteristics of emergentism (as defined by el-Hani and Pereira 2000: 133ff.) and Plessner's philosophy of nature.

First of all, emergentism is characterized by an *ontological naturalism*, the idea that all that exists in the space–time world are the basic particles recognized by physics and their aggregates. As we have seen, this is also the starting point of Plessner's philosophy of nature. After all, it is especially this naturalistic monism, which distinguishes both British emergentism and Plessner's philosophy of nature from vitalism and other dualist positions.

However, as the second characteristic demonstrates, the emergentists are non-reductionist naturalists, because they defend a notion of *property emergence*. They hold that as soon as "aggregates of material particles attain an appropriate level of organizational complexity, genuinely novel properties emerge in these complex systems" (el-Hani and Pereira 2000: 133ff.). As we have seen, this also applies to Plessner: the succeeding stages of positionality are not only characterized by an increasing complexity, but also with the emergence of qualitatively new properties. Plessner repeatedly speaks in terms of a developmental logic of the succeeding stages (IV, 360f.).

The third characteristic mentioned by el-Hani et al. is that the "emergent properties are *irreducible* to, and *unpredictable* from the lower-level phenomena from which they emerge" (el-Hani and Pereira 2000: 133). With regard to this characteristic, Plessner's position seems to diverge from the British emergentists. As I have noticed in the prior discussion of 'A Newton of a blade of grass', Plessner explicitly states that developments in molecular biology have demonstrated that a phenomenon like teleology is reducible to the laws that govern the behavior of elementary particles.

However, it was precisely because of these notions of irreducibility and unpredictability, that emergentism became the subject of severe criticism in the middle of the twentieth century, leading to the end of 'the golden age of emergentism'. Next to the rise of the development of quantum mechanics, which opened up new explanatory avenues and, in particular, the possibility of deducing certain chemical properties of molecular compounds from the physical properties of their atomic constituents and their organization, the spectacular rise of molecular biology and prebiotic chemistry, to which Plessner also refers in 'A Newton of a blade of grass,' marked the end of the popularity of emergence (Malaterre 2013: 163). The unraveling of mechanisms of replication and of transmission of genetic information of DNA since the first adequate description of this molecule by Crick and Watson in 1953, and the origins of life research that followed the first demonstration by Miller, around the same time, of the abiotic synthesis of amino acids, seemed to definitively mark the end of emergentism.

One way to rescue the notion of emergence was to comprehend it as an *epistemic* instead of an ontological concept, as have been done, for example, by Oppenheim and Hempel (Malaterre 2013: 166). Given the increasing complexity and multi-realizability of the successive stages of life, predictions are difficult, if not in principle, then at least for practical reasons, such as the limits of human understanding, the sophistication of the theories or the technical limitations of the instruments used to investigate living nature. For example, because of the hyper-astronomical number of possible combinations of elementary particles, genes and neurons (Luisi 2002). Although Plessner does not use the concepts of ontological and epistemic emergence, his position in 'A Newton of a blade of grass' seems to be close to the epistemic conception of emergence.

However, the attempt to rescue the concept of emergence by reinterpreting it as an epistemic term is doomed to fail, because in the epistemic interpretation "properties cease to be emergent when the right tools (either theoretical or technical) are developed, which convert the required explanations from the realm of possibility to actuality" (Schröder 1998: 445). According to Schröder, this is not a final blow for emergentism, though, because in his view irreducibility and unpredictability are not decisive characteristics of emergentism in the way ontological naturalism and property emergence are. The fundamental issue, which is also mentioned by el-Hani and Pereira (2000: 133), as the fourth characteristic of emergentism, is *downward causation,* a notion that states that "higher-level entities causally affect their lower-level constituents".

Although Plessner neither does use the phrase "downward causation"—which is not strange, given the fact that this notion was introduced by Campbell in the seventies (Campbell 1974)—the idea without doubt is present in Plessner's philosophy

of nature. After all, one of the key notions in *Die Stufen* is that the higher levels of positionality influence the lower ones. For example, in the case of centric positionality the center influences the lower-level interactions between the organism and its environment. Quoting Uexküll, Plessner points at the fact that the emergence of centric positionality in the animal kingdom reverses the relationship between the whole of the organism and its parts: "When a dog runs, the animal moves its legs. When a sea-urchin runs, the legs move the animal" (IV, 316). And with the emergence of excentric positionality, the values and norms that characterize the shared world of culture (*Mitwelt*), function as a 'second nature' that—not always and totally, but sometimes and partly—is able to control our behavior at the centric level of instincts and drives (IV, 385).

Unfortunately, just as in the case of irreducibility and unpredictability, the notion of 'downward causation' has been heavily criticized. In this case, the setback did not come from the life sciences, but from philosophy. The objection is directed at strong emergence, which makes the *ontological* claim that the properties and laws at the micro-level are inadequate to account for the system's behavior as a whole. As physicist Paul Davies summarizes this critique: "Strong emergence cannot succeed in systems that are causally closed at the microscopic level, because there is no room for additional principles to operate that are not already implicit in the lower-level rules. Thus a closed system of Newtonian particles cannot exhibit strongly emergent properties, as everything that can be said about the system is already contained in the micro-level dynamics (including the initial conditions)" (Clayton and Davies 2006: xii). Reductionists regard this critique to be a fatal blow to emergentism.

However, as the French philosopher of science Bitbol wittingly remarked: "Downward causation looks impossible as a concept, but is well established as a fact" (Bitbol 2012). After all, in our everyday experience the 'vital category' of agency seems to be incontestable. Moreover, under influence of the development of chaos theory, network theory, and the study of nonlinear systems, self-organizing systems, artificial intelligence and consciousness, in the last couple of decades we witness a serious 're-emergence of emergence' both in the life sciences and in philosophy (Clayton and Davies 2006; Malaterre 2013: 156; Noble 2006).

Davies discusses different loopholes in physics that permit strong emergence, for example by regarding the universe as an open or non-deterministic system (Clayton and Davies 2006: xii). However, in the context of the present discussion, I will focus on another 'loophole,' which consists of a reformulation of the concept of downward causation. Instead of considering the 'emergent properties,' which appear on the phenomenological level, as new causal forces, the downward 'causation' is understood as a new kind of relatedness of the parts, that constrain the behavior of the lower-level elements: "Higher-order properties act by the selective activation of physical powers and not by their alteration" (Van Gulick 1995: 252; Campbell 1974; Thompson 2007: 424). In the formulation of Jürgen Schröder:

> What is responsible for downwards causation […] is the 'new kind of relatedness' of the parts and not […] what we take to be the emergent property […] What is caused to be different in a living organism is the course of events, as compared with the course of events in a dead one. It is not that the physi-

> cal or chemical laws which govern the behavior of, say, the molecules in the cells, are different in living and dead organisms. […] What does determine the course of events are certain conditions which determine *how often and in which order* the chemical and physical laws are to be applied. […]. In order to produce live and mindful beings, what is needed is not special laws but *special structures that constrain the sequence of possible events in special ways*. (Schröder 1998: 447f.; second italics JdM)

One could think, for example, of DNA methylation, by which methyl groups are added to the DNA molecule, which changes the activity of the genes without changing the sequence. Postgenomic research in the past decades has demonstrated that this kind of epigenetic regulation by organs or behavior can invoke lasting changes in the gene expression, not only in the individual, but even transgenerational (Noble 2013).

In Plessner's *Stufen* we find a similar account of how the successive levels of life constrain the processes on the lower levels. The emergence of boundaries—in biological terms: semipermeable membranes, resulting from the ambiguous character of lipid molecules, which are hydrophobic on one side and hydrophilic on the other, and for that reason spontaneously organize themselves in sphere-shaped vesicles, which regulate the crossing of food and waste—does not introduce additional physical or chemical entities or laws, but constrain the sequence of possible events specific way. The building of artificial boundaries, such as houses, city walls, borders and copyright laws can be understood the same way. Each of these structures "constrain the sequence of possible events in special ways*"* (Schröder 1998: 447).

Similarly, the emergence of the centric organization in the biological realm does not introduce new 'vital powers,' but rather has to be understood as a reorganization of the physical and chemical processes in the organism thanks to the emergence of feedback systems, transforming the living thing into a teleological system. Instincts and drives constrain the sequence of possible movements of the animal. And the freedom of action that emerges in excentric beings neither is a mysterious mental power, but has to be understood as a process in which the cognitive structure acts as second nature, which downward constrains the sequence of possible expressions of 'centric drives'.

Practical Self-Understanding

Practical self-understanding refers to our *pre-theoretical* self-experience in everyday life, especially to the brute factum that we experience ourselves as *agents*, *who can make choices*, and in doing so are guided by a *normative orientations*.

Anyone who, on theoretical grounds, claims that this pre-theoretical experience is only an illusion, has to provide a convincing explanation for the illusionary character of this almost universally shared pre-theoretical experience. However, oftentimes the theoretical denial of practical self-understanding is contradicted by an explicit or implicit affirmation of it. Richard Dawkins, for example, whose proposition, in *The Selfish Gene,* that we are no more than "survival machines—robot vehicles blindly

programmed to preserve the selfish molecules known as genes" I quoted in the introduction of this article, ends his book with the claim that "we have the power to turn against our creators. We, alone on earth, can rebel against the tyranny of the selfish replicators" (Dawkins 2006: 201). How this is possible, given his radical reductionist determinism of his book, remains a complete mystery.

In this sense Libet, to whose experiment that demonstrates that conscious decisions are preceded by an unconscious 'readiness potential' I also referred in the introduction, defends a more reasonable position with regard to our practical self-understanding.

> However, we must recognize that the almost universal experience that we can act with a free, independent choice provides a kind of prima facie evidence that conscious mental processes can causatively control some brain processes (Libet 1994). As an experimental scientist, this creates more difficulty for a determinist than for a non-determinist option. The phenomenal fact is that most of us feel that we do have free will, at least for some of our actions and within certain limits that may be imposed by our brain's status and by our environment. The intuitive feelings about the phenomenon of free will form a fundamental basis for views of our human nature, and great care should be taken not to believe allegedly scientific conclusions about them which actually depend upon hidden ad hoc assumptions. A theory that simply interprets the phenomenon of free will as illusory and denies the validity of this phenomenal fact is less attractive than a theory that accepts or accommodates the phenomenal fact. (Libet 1999: 56)

The way Libet accommodates the phenomenal fact of practical self-understanding is by assigning to consciousness the role of a "*control* function, different from simply becoming aware of the wish to act" (Libet 1999: 53). This is in line with the account of practical self-understanding we find in Plessner's philosophical anthropology, and which is also supported by emergentists theories in the life sciences. According to this view, practical self-understanding is not an illusion, but neither can it be equated with the rational autonomy ascribed to human beings by philosophers like Descartes and Kant.

In order to further specify the account philosophical anthropology gives of practical self-understanding, in the remainder of this section I will elucidate the normative agency of human beings by interpreting it in the light of the three 'anthropological laws' Plessner discusses in the final chapter of the *Stufen,* and which are implied in the excentric positionality of the human life form.

The first of these three laws states that human beings are *artificial by nature.* According to Plessner, "[t]he human wants to escape the unbearable excentricity of his being; he wants to compensate for the dividness of his own form of life" (IV, 385). In the case of excentric beings the boundary realization takes the form of realizing oneself by the creation of artificial supplements, by technological and cultural artefacts, ranging from clothes, houses and airplanes to language, social roles, art, religion, science, and moral rules. All of these phenomena have their ground in human excentricity. In the case of practical self-understanding, for example, the human ability to take the perspective of other human beings and

to live in a shared world (*Mitwelt*), is a condition for the possibility for the defining a moral rule like the altruistic principle of treating others as one would wish to be treated. This is not so much an eternal 'natural moral law' but an artificial rule, created by human beings at a certain moment in their moral (and religious) history. Moral life, like life in general, does not just happen to excentric beings. Human beings only live a *human(e)* life insofar as they *lead* their life (IV, 397). And this is not possible without normative guidelines.

However, as much as they are excentric, human beings also remain centric animals. It is important to notice that this not only create tensions, for example between our egoistic drives and our altruistic principles. Moral principles often have their roots in our animalistic nature. Without the care instinct we share with other mammals, it is hard to image the emergence of altruistic principles. For that reason we recognize elements of our morality in the behavior of primates, especially in closely related animals like chimpanzees and bonobos and even more so in even more related animals like primates. In that sense, morality is part of human nature rather than its opposite (de Waal 2005; de Waal et al. 2014). However, as much as centric and excentric morality are related, they are characterized by a gulf at the same time. When a person stops his car when the traffic light turns red, it is relevant from a moral point of view, whether this action is motivated by the fear of getting a fine or by respect for the law. In this respect, the 'moral behavior' of animals cannot be equated so easily as authors like Frans de Waal sometimes do. Nevertheless, the intimate connection between excentric principles and the centric instincts from which they stem, makes clear that from the perspective of philosophical anthropology, practical self-understanding is far from being a completely autonomous, rational activity.

Plessner's second anthropological law, that of *mediated immediacy,* provides another reason to doubt the autonomous character of our practical self-understanding. According to this law, because of their excentric positionality, human beings can only realize themselves via the detour of technology and culture. Although created by human beings, technology and culture get their own weight: "Everything that becomes part of the sphere of culture thus exhibits both a connection to its human authorship as well as (and to the same extent) independence from it" (IV, 397). In the discussion of the *Mitwelt* I already pointed at the dual aspectivity of human culture. This also goes for our practical-self-understanding. Not only is the *understanding* part of our practical self-understanding most times not the result of some immediate kind of introspection, but mediated by the articulations of our self-understanding in autobiographical accounts (diaries, social media), role models, moralistic stories or movies, ethical theories and the like, but also our *practical actions* are often mediated by artefacts. Take for example the street bumper that motivates me to reduce speed when I drive my car through a residential area. In a paradoxical way, such a technical artefact enhances my moral agency by undermining my autonomy, in the sense that the speedbumber, by 'constraining the sequence of possible events' helps me to realize my intention to obey the traffic law. (de Mul 2014a: 216) Thus, 'moralizing technology' (Verbeek 2011) is another example of the dual aspectivity of human culture.

The third anthropological law Plessner formulates, that of the *utopian standpoint*, suggests yet another reason for relativizing human autonomy. Excentric positionality not only transforms the animalistic environment into a human(e) world and endows us with creativity, language, and foresight, these very 'gifts' also waken us up to the brute factum of our futility and mortality, both as an individual and as a species. Probably, this insight into the "nothingness" of our existence is probably the most unbearable aspect of our excentric lifeform, resulting in an utopian hope to transcend this tragic aspect of the human predicament (IV, 419). Though 'constitutively homeless,' human beings continue to long for 'a home' and cherish the faith that it will be reached in a blissful future. Traditionally, this faith belonged to the domain of religions, but in a modern secular age it also took the shape of political ideologies that promise a heaven on earth.

Plessner's philosophical anthropology makes us realize, though, that for beings that are constitutively homeless, the longing for such a blissful home will always remain an unrealistic, utopian dream. This should not depress us, though. Our excentric positionality is not only a burden but at the same time a bliss. That's also part of the dual aspectivity of human life. From the perspective of philosophical anthropology, practical self-understanding enables us to transform pieces of the burden into bliss. Although our excentric positionality excludes that we will ever reach a final home, it also incites us to one of the most wonderful journeys a species ever undertook. To reflect and interpret the history of this journey is one of the honorable tasks of the humanities.

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