

Dieter Wandschneider*

The 'Hard Problem' of Phenomenal Perception**

Abstract

The center of this investigation is the *hard problem* of phenomenal perception. To be clear, hereby it is thought of higher animals; accordingly the problem of Human consciousness, will explicitly *not* be treated. The so-called *explanatory gap* (Levine), i.e. missing a neural explanation of experiences, here is *emergence-theoretically* countered: It is argued that systems own properties and laws different from those of their components. Applied to the brain the *phenomenal* character of perception is explained as an emergence effect from the *systemic cooperation of perception, valuation and behavior*, whereby also an interpretation is opened to *Davidson's anomal monism*. As is further shown, *feelings* are to be understood as a necessary completion of perception when, as in the case of higher animals, the behavior is primarily controlled by phenomenal perception.

Keywords: hard problem, chalmers, phenomenal perception, anomal monism, emergence, principle of self-preservation, feelings

1. Introduction

The phenomenal-mental is understood to be the 'phenomena' presented by perception, such as shapes, patterns, movements, environmental scenarios, as well as mental *qualia* such as colour qualities, smells, sounds, sensations of pleasure, pain etc. The problem of their emergence and their specific way of being has increasingly moved to the centre of contemporary body-mind philosophy.

When in the following we talk about the mental, then in general with regard to higher animals, which as such have a differentiated perception and sentience. The human being is of course included in this, but the problem of human consciousness and mind is explicitly not a topic here. The explanation of these specifically human peculiarities is undoubtedly confronted with far greater difficulties – although it is also clear that therefore an understanding of the elemental-mental is *presumed*.

In the current discussion of the mind-body problem, the question of the specific mode of being of the mental has been called the *hard problem* of the mental (Chalmers 1996a; 1996b). According to this there is an *explanatory gap* (Levine 1983, 1993) concerning a possible scientific explanation of mental experiences on the basis of physical-neural processes. The following considerations are dedicated to this central problem of a theory of psychic existence, combined with the hope of finding a starting point for a de-mythologization of that 'explanation gap'.

The explanation deficit mentioned is obvious. It is known that mental processes are connected with brain processes, which *as such*, however, are not psychic experiences. Neurological – i.e. ultimately physical – explanations are therefore insufficient to explain what is specifically mental. Chalmers interprets this – taking up arguments of Saul Kripke (1972, German 1981) – as a *logical* deficiency: The dependence of mental states on neural processes, their *physical ('natural') supervenience*, is not a *logical* supervenience. So it is to be not logically compelling to assume physical causes for the existence of mental processes, and therefore physical explanations of the mental could not claim stringency.

What is interpreted here as a logical deficit is explained in Thomas Nagel's famous article *What is it Like to be a Bat?* (1974) rather as the difference between the 1st person perspective and the 3rd person perspective. My experience of the redness of roses, for example, is only accessible to me, not to the brain researcher, who is only able to see the proceeding neural processes. In fact, the-

* Philosophisches Institut der Universität RWTH Aachen (Germany).

** English translation of *Das 'eigentlich schwierige Problem' phänomenaler Wahrnehmung*, in: Zeitschrift für Philosophische Forschung, 69 (2015), 550–568.

re is a principled difference: The brain researcher is *by definition* excluded from my own first-person perspective simply because he is a different person. Logic does not have to be used for this. Sure, in case of *logical* supervenience this difference of perspectives wouldn't exist, because a logical fact is in principle *generally* accessible and besides would not be dependent on *physical-material* conditions.

I will not go into detail here about the various theories for explaining mental being.¹ In the sense of the already mentioned hard problem of the mental, they all have to be judged as unsuccessful. Take, for example, the *identity theory* asserting the identity of neural and mental states, which ultimately amounts to the denial of mental states. Or *epiphenomenalism* regards mental states as mere *epiphenomena* of neural events, i.e. as virtual concomitants of them without mental causation; so a feeling of pain initiating a physical reaction, becomes a problem.

Interesting is Donald Davidson's sophisticated *anomalous monism*, which tries to unite these two theoretical approaches to a certain extent (Davidson 1990, 291 ff): A single mental state ('token') is to be identical with a single neural event ('token'), but not with regard to its mental type with the type of that neural event ('token identity' instead of 'type identity'), so that there is no lawful connection between neural and mental events. The reason for this is to be that the type of mental states is categorically completely different to the type of neural events. Therefore their relationship shall be *a-nomal*, i.e. not law-like. According to this, only the neural event is causally effective, while the mental state has a different categorical status and in *this* sense, as it were, represents an *epiphenomenon* of the neural event.

Besides numerous unsolved questions of Davidson's theory (cf. Pauen 2005, 119 ff), it is this epiphenomenalistic consequence that makes it seem obsolete at first. In the *emergentistic* theory approach to be presented next, however, it gains, as will be shown, a certain intuitive plausibility.

My investigation is guided by the conviction that for one of the eternal questions of philosophy (think of Plato's *Phaidon*) the hope for an answer – in the sense of an interpretation encompassing both physical and mental aspects – no longer seems entirely absurd today.²

2. Emergence

Even if the mental is supervenient on neural processes, it is obviously not simply *identical* with them. But what then? The *concept of emergence* seems to be promising for the clarification of this question. Emergence, the 'emergence' of new properties, is a *system-theoretical* phenomenon. A *system* is to be understood as an interconnection of elementary laws of nature, which in their interaction realize *novel regularities*. A clock shows a different behaviour than the atoms of which it is composed. System laws are *laws of wholeness* on the system level which are linked to the wholeness of the system, presupposing the lower-level of the system elements and their more elementary laws, *without being reducible to them*. Konrad Lorenz, for example, cites the oscillating circuit as an example of an emergence phenomenon – he speaks instead of 'fulguration' (Lorenz 1973, 47ff) – whose elements, coil and capacitor, do not *per se* exhibit this oscillation behaviour. Other common examples are water (H₂O) and common salt (NaCl), whose components, hydrogen and oxygen or respectively sodium and chlorine, have completely different properties than their compounds, water or common salt.

Now, brains are highly complex systems. So here are to expect system laws and thus emergence effects by sure. One should therefore expect, that the emergence concept also and especially in the discussion of body-mind-problem will play a central role. However, strangely enough, this is not the case. Only occasionally emergence phenomena have been considered, but even then rather in the programmatic sense that mental phenomena are to be interpreted as emergence phenomena of physical processes, whereby the *how* remains unexplained. Authors such as Charlie D. Broad (1925), Konrad Lorenz (1973), Karl Popper (1977), Mario Bunge (1984), Heiner Hastedt (1988) are to be mentioned as exponents of such an interpretative approach. Following on this line I myself

¹ For this see Pauen 2005 and the multi-faceted considerations in Höhle 2006 and Höhle 2007.

² Considerations on the ontology of psychic being and on the question of what is actually to be regarded as the perceiving *subject*, as well as a chapter on the formation of childlike perception, have been separated here because of overstepping the stipulated text length. A separate publication takes partially up these topics (Wandschneider 2016).

have dealt in detail with the problem of the emergence of the psychic (Wandschneider 1999).

In the mainstream of the philosophy of mind the concept of emergence is practically not present – just one example for many: David Chalmers, in his seminal work *The Conscious Mind*, only briefly mentions the concept of emergence in the notes, stating "that nothing in the story about emergent causation requires us to invoke *phenomenal* properties anywhere. The entire causal story can be told in terms of links between configurations of physical properties", which as such do not explain *mental* properties (Chalmers 1996b, 379). But Ludwig von Bertalanffy, the founder of modern systems theory, has seen more clearly what "links between configurations of physical properties" *properly understood* means: "We often believe that when we have studied one thing carefully, we know everything about two, because 'two' is 'one and one'. But we forget that we still have to study the 'and'. Systems theory, according to Bertalanffy, "is the study of the 'and'" (Bertalanffy 1970, 90), and that means the interconnection of physical elements to form a system. In terms of systems theory, the blanket talk of the 'physical' is misleading if it excludes the system aspect, which is essential for the assessment of what 'the physical' is or is not capable of.

Let's consider as an example a simple *logical circuit*, a pair of neurons, which realizes the conjunction 'AND' for a downstream action: If none or only one of the two neurons fires, nothing happens, but if both – i.e. one and the other – fire, the downstream action is triggered. This neural realization of the logical junctor AND is to be understood as a simple case of emergence on the macro level of the two-neuron system. The microprocesses involved – increase of the membrane potential of the cell, depolarization by opening of postsynaptic ion channels, molecular processes up to quantum physical effects – are essential for this, but they do not occur on the level of the AND operation. The microprocesses relevant for the realization of AND could therefore be implemented in a completely different way – electronically, hydraulically, mechanically for example. At the macro level, only the junctor logic governs, here in the AND mode: action when both components are active, otherwise no action.

Understood correctly, the described two-neuron system produces an *emergence phenomenon*: The *physico-chemical* processes at the level of the individual neurons constitute the *logical AND* mode of the two-neuron system as a whole. Those who only see the individual neuron processes and ignore the macro-perspective of the two-neuron system dismiss just what is essential: the existence of a logical level therewith realized at the same time and determining the neural process.

However, is not the neurons' working solely determining, after all? Is the talk of a logical determinant therefore not purely metaphorical? Certainly not, because it is not the firing of one or the other neuron that causes something, but only when one *and* the other fires. Of course, it is the neurons that fire, but the quasi *logical specificity of the AND action* that determines the downstream action is only *realized* at the level of the two-neuron system. Thus does the AND logic *work*, whereby the neurons are of course necessary, but only 'in a serving function', so to speak. Here it becomes visible *how logic can be effective in reality*.

The logical AND-structure is thus *emergent* at the level of the two-neuron system. This means that properties are realized which are novel compared to the properties of the subsystem (i.e. both neurons each for itself). For this reason, the logical properties *cannot be reduced* to the properties of the neurons individually for themselves, because the structure of the AND-logic is evidently not present there, but only given by the circuitry constituted by both. For the reductionism discussion of the body-mind issue, it can generally be assumed that the attempt to *reduce* mental states to neural processes is in any case misguided.

From the perspective of emergence theory, it is also clear that identity theories of all kinds as well as epiphenomenalist theories are fundamentally flawed because they are, as it were, *emergence-blind*: the identity assertion because it ignores the system-theoretical difference in regard levels of neural processes and mental phenomena, and epiphenomenalism because it denies the latter's effectiveness. Davidson's anomalous monism, on the other hand, gains a certain sense in an emergentist perspective, as already mentioned: The assertion, which sounds strange in itself, that although mental phenomena are supervenient on the physical, they are to be categorically completely different, is well comprehensible in emergence theory. To this end, I take up the previous considerations about a neurally realized *logic*, which I consider here representatively for 'the mental' – which is

thus undoubtedly under-determined, for example by excluding subjectivity³, but the a-nomaly-principle becomes already clear in this simplification:

Davidson argues that only *tokens* (single events), not 'types' of neural processes are relevant for the constitution of the mental. This also applies to the considered logical AND structure of two components as the specific process type of the two components is irrelevant for this; it needs to be neural, but could also be realized electronically, hydraulically, mechanically or otherwise. It is only essential: *that* both components can be active or inactive = a process token, *and* of course the inter-connection of both to an AND structure. This means in fact that there can be no strict laws ('anomaly') between the logical effect and the underlying physical processes, because law-like relations are related to event *types*. If an object of the 'ice' type is heated, it lawfully changes to a form of the 'water' type. But in the case of the AND circuit, the causative processes are only entered as *events* that are 'active' or 'inactive' and not as processes of electron or ion passages or the like. Their process types (which they of course own, too) and the specific natural laws associated with them is irrelevant at the AND level. Relevant is in fact merely their token character ('active' or 'non-active'). The objection often raised against Davidson's type/token-argument that a token always also falls under a type (which is correct in itself) has thus been settled.

And we are dealing here with different *category systems*: the junctor-logical ('active' or 'non-active' corresponding to 'true' or 'not true') and the physico-chemical, in which the natural laws of the individual events themselves are described. These are presumed for the junctor-logical structure, but are not identical with it.

Davidson's argument for the anomaly of the *mental* is more complex. For example, he argues that "what is determined by the mental and physical schemata is quite disparate" (Davidson 1990, 312). He sees the reason for this in the 'propositional attitudes' of the individual, and that means "that the attribution of mental phenomena is to be bound to the background of reasons, beliefs and intentions of the individual" (313). This, however, was "not a closed system" (315), but required a constant "adaptation taking into account the respective opportunity" (313).⁴ This argument contains two important aspects: on the one hand, concerning the *disparity* of the mental and the elementary-physical which, according to the interpretation developed, mirrors the emergence character of the mental with the consequence that this is not reducible to the physical; on the other hand, concerning the *new categorial structures* of the mental implied with it, through which manifold logical 'propositional' linkages ('reasons') are made possible and thus, factually or even fundamentally, 'unclosable' views are opened up. The primary anomaly would thus be seen in the *emergence* of the logical level, whereas the incompleteness of the mental would be a *consequence* of the logical character of this level.

What is decisive is that, due to emergence, the mental belongs to a *different categorial level* than the neural level, which it nevertheless requires in order to function: This, according to Davidson, anomalous relationship is, properly understood, a *phenomenon of emergence*. Davidson may have grasped this fact intuitively, but he can only define it as 'a-nomal', as non-lawful, because the concept of emergence is – for whatever reason – not available to him. *Justifiable*, however, the anomalous monism only becomes within the framework of emergence theory.

3. The Phenomenal-Mental

Realization of *logical* relationships on a *material* basis: What we encounter ubiquitously in everyday computer life today still seems to be a largely alien species ontologically. This applies all the more to the realm of the *phenomenal-mental* – such as patterns, shapes, movements, environmental scenarios, colors, smells, sounds, pain, feelings of pleasure, etc.⁵

With regard to the systemic character of the brain, it can be assumed that an emergentist interpretation of the mental is inevitable. This initially programmatic anticipation must be further concretized and elaborated.

³ Relevant on the concept of subjectivity see Wetzel 2001, e.g. 8 ff.

⁴ For this in detail Reichold 2005.

⁵ The specific feeling character is discussed in more detail later (ch. 4).

The main orienting instances of the living individual are perception, valuation, behaviour. How is their interaction to be thought of? The cardinal goal of the living individual is *self-preservation*. All *behaviour* is subject to this norm. This is controlled by *perception* which for its part must be *valuated* in the sense of self-preservation (whereby valuation results may be stored in memory so that similar evaluation processes must not constantly be repeated). Perception, evaluation, and behaviour thus form a complex *overall system* which, as such, allows us to expect *emergence phenomena*.

The *perception* conveys the relation to the outside world as well as to the physiological inner sphere and controls – according to the specifications of the valuation system – the behaviour. This implies, however, that perception must present reality to the subject in such a way that it is able to control its behaviour according to the principle of self-preservation. On the one hand, this means that the subject filters out (for economic reasons) what is not relevant for survival. On the other hand, it will value what it encounters as desirable or avoidable objects, i.e. it will give them an *attractive* or *aversive* impression. What thus appears in perception is not the naked sensory stimulus, but rather its valuation-controlled re-shaping – which the individual admittedly perceives as *object feature*.

Accordingly, the perception of higher animals contains a considerable 'subject share'. The lenses of the eye create an image of the situation on the retina, which is neurally further processed, whereby filter effects, physiological colour generation, contrast sharpening etc. are effective: a *neural artefact*, so to speak. Nevertheless, the individual under behavioural pressure, on the other hand, encounters in these perceptual processes the very reality in which it is given the task of surviving.

This also means, however, that its perception must be *adapted to its behavioral modalities*. The little bird that flies through the branches with incredible agility must be able to adjust its flight maneuvers to the frenzied scene changes in its perception in a flash. When I walk through a door, it must actually be the size that I see and allow me to pass through according to my movement possibilities; otherwise I would bump into the door frame. Contact with the flame must cause pain so that I can avoid such things in the future. On the one hand, this is ensured by the evolutionarily realized genetic make-up, on the other hand, experience is added ontogenetically, especially in the development of animal subjects in adolescence – for example in forms of the play instinct, curiosity behavior, trial-and-error actions, etc. (Singer 2002, 121).

The fact that perception presents *reality* is therefore to be taken seriously in the sense of succeeding behaviour: Evolution – this central Darwinian argument simply cannot be dismissed – has *perfectly attuned to one another* the perception and behavior of a species, otherwise it no longer existed. *Perception, valuation and action* (behaviour) thus form a system; I would like to call it the *perc-val-act-system* for short. For the animal subject, this presumably defines the *highest-rank level* of the living system, the *perc-val-act-level*, whose specific *emergence phenomena* concern valuated behavior-attuned perception.

As we have seen: If behaviour is to succeed, perception must present reality in the optics of behavioural possibilities. It must show the bird the branches in the right dimensions so that it can adjust its flight maneuvers accordingly. It must show the door frame in the right proportions so that I do not run into it when I walk through it. The burn must be painful to learn to avoid it. The necessity of succeeding behaviour therefore requires a perception that presents spatial relationships, shapes, movements, colours, smells, taste and touch perceptions etc. in accordance with the behavioural possibilities, and this means: the sensory signals must be able to generate *phenomenal scenarios* with spatial relationships, shapes, movements, colours, smells, taste and tactile perceptions, sensations of pleasure and pain, etc. Initially these are neural excitations, but at the *perc-val-act level*, they have to handle the task of controlling behaviour, and for this purpose they have to *model apt realities* that enable succeeding behavior for the individual. Just these subject-specific forms are the *phenomena* in which it encounters its (species-specific) reality. Only in this way it is able to control its behaviour efficiently according to its behavioural possibilities. Only in this way does perception have any sense at all under the aspect of the principle of self-preservation.

Therewith a quasi *Darwinian argument for the explanation of phenomenal perception* is asserted: *The 'phenomenal' mode of perception is nothing other than the adaptation of perception to the (species-specific) reality encountered in behaviour*. The appearance of this reality in perception

determines its 'phenomenal' character. Otherwise survival would be impossible, and in this sense the evolutionary-selectionist argument does indeed *explain* not only the existence, but basically also the *phenomenal mode* of perception.

How this is *neurally realized* is therefore not primarily relevant for understanding that 'higher', i.e. behavior-related perception has phenomenal character, and brain research is therefore the wrong addressee in this question. For the same reason, the talk of an explanation gap is misleading. For it basically only testifies that apples are compared with pears here, since, as we have seen, brain processes and perceptual phenomena belong to completely *different system levels*: on the one hand the electro-physiological level, on the other hand the perc-val-act level, on which perception always includes a sense perspective to behaviour. This behavioural relation on the perc-val-act level is constitutive for the phenomenal character of valuated perception.*

To illustrate this, think of the difficulties that a new pair of glasses with a different lens power initially causes: The floor seems to move towards or away from you (depending on the change in lens power), solid objects seem to stagger, and there are coordination difficulties in the movement. Perception and behaviour must first be newly attuned to each other, also in the neural circuits. But in the process of trial and error in dealing with things, i.e. on the perc-val-act level, the neural system regulates by itself in such a way that the appearance of things again fits the actions and vice versa. This does not require a computer scientist. 'Programmer' here is the – negative or positive – behavioral success. The litmus test for the newly formed neuron networks is successful behavior; the re-adjusted phenomenal perception is then again behaviorally consistent.⁶ It is therefore absurd to say: 'We have not the slightest idea how the neurons manage to produce something as different as phenomenal perception'. For perception that is bound to behaviour will call for other neural circuits until the perception of reality fits again – in the sense of the principle of self-preservation – the behavioural possibilities. And as far as the otherness of perception compared to the neural processes is concerned: Perceptual states and events on the perc-val-act level *must be*, due to emergence, fundamentally different from those of the subordinate neural level. I recall the example of the AND-circuit and the transition from physical (neural, electronic, hydraulic, mechanical or similar) level to the junctor-logical level.

The phenomenal can thus be understood as an emergence property on the perc-val-act level of the individual.⁷ Evolution has directed it in such a way that the (species-specific) reality in the valuated perception of the individual appears phenomenally in *such* a way that it can react to it adequately in its behaviour according to the principle of self-preservation. So much for the *demystification* of the 'explanation gap' lamented by the philosophy of mind.*

One might be inclined to object that the gap between what is neurally demonstrable and what is phenomenally experienced is nevertheless not closed. The brain researcher would still be unable to determine what it is like to be a bat (Nagel 1981). Indeed he cannot, and, understood properly, he will never be able to do so, because he himself is not the bat. His view is restricted to the 3rd person perspective, while the phenomenal perception belongs to the 1st person perspective, which as such remains experientially private, i.e. 'inaccessible from outside'. Here it could be objected that the researcher could carry out self-experiments in such a way that he technically analyses his own experiences live (or by recording). But what he receives in this way are again only *correlations* of neural and mental processes, no *explanations* for the emergence of the latter. In the perspective of the brain researcher, the explanation gap remains because the scientific perspective is always the third person

* Somewhat too optimistic: I do agree that this can only be seen as a first approach, which leaves a host of questions unanswered, so that the talk of an *explanatory gap* should remain still valid (D.W. 2020).

⁶ An extreme example would be 'inverted goggles', which show the objects upside down, but are to allow normal behaviour again after a few days.

⁷ The distortions that occur when the concept of emergence is not available become clear, for example, in Daniel Dennett's 'Disqualification of Qualia' (Dennett 1991, ch. 12): He understands phenomenal perception as being conditioned by an "idiosyncratic complex of dispositions, [...] but this is just how it *seems* to you, not how it *is*" (1991, 389, my italics). But Dennett also finds it worth considering "some basic enlargement of the ontology of the physical sciences [...] in order to account for the phenomena of consciousness" (1991, 36) – this is exactly what, in principle, the concept of emergence does.

perspective, which cannot relate perception to subjective behavioural possibilities.⁸

It is clear that the concept of reality would need further discussion. Is it – especially because of the essential 'subject share' in valuated perception – philosophically not bold to claim that it presents the – albeit species-specific – 'reality'? But apparently there is no getting around it, if it is true that *behaviour* is confronted with reality – what else? – in which it has to prove itself. For this it needs orientation and consequently perception. The restrictive addition 'species-specific' goes without saying: The different sensory organizations of different species comply with different 'environments' (in the Uexkuell sense), which represent the specific 'reality' that the behavior is working on. The 'hidden part of reality' – the 'olfactory world' of humans, for example, is much poorer than that of dogs – needs not be a cause for concern, because it cannot be relevant for the survival of the species in question; otherwise evolution – to put it crudely – would have provided a different set of senses.

The fact that this can of course be recognized and judged *by us* in this way is due to the privileged *scientific* access to reality that we have as human beings. Thus we are not bound to our natural endowment with all its limitations, which is *biologically* given to us as members of the human species.

4. Completion of Perception by Feelings

So far I have generally spoken of phenomenal perception, with visual perception being the main theme. I would now like to turn in particular to those sensory experiences, which are often regarded as the actual phenomenal perceptions and have therefore been discussed again and again in connection with the body-mind problem, such as tactile impressions, taste stimuli, olfactory sensations, pain feelings etc. Terminologically I would like to speak here generally of *feelings*.

In this context, I think, it is important to distinguish between (1) *valuation of a perception* and (2) *perception of a valuation* (of a perception), or somewhat more friendly: (1) *valuated perception* and (2) *perceived valuation* (of a perception): (1) The valuated perception *implicitly* contains the valuation triggered by it – certainly the basic form of all perception, which as such is inevitably valuated. (2) Perceived valuation is the perception of the valuation itself. Here the valuation is no longer implicitly contained in the perception, but is itself *explicitly perceived* – and thus, I hypothesize, establishes the specific experience character of those perceptions that we know as *feelings*. This distinction clearly differentiated forms of behaviour control correspond:

(1) In the case of valuated perception, the action triggered is not directly determined by the sensory content itself, since this is biologically irrelevant as long as it is not valuated. Only the subsequent valuation provides the biologically decisive behavioural information, which then triggers a corresponding action: i.e. a pure *reflex reaction* triggered essentially by the *valuation*, as it is typical for lower animals.

(2) The perception of higher animals, on the other hand – which is the actual topic here – also includes forms of *perceiving* a valuation, i.e. perceptions of the valuations themselves such as 'too hot', 'tasty', 'smelly', 'painful' and the like, which we ourselves know as *feelings*, to which we grant without hesitation the property of the *actually psychic*, that we deny to robots (in today's sense), for example.

So, what distinguishes *feelings* from 'normal' valuated perceptions is that the valuation itself is *now explicitly perceived* (Wandschneider 1987; 1999; 2008, ch. 7). The *pleasurable* taste of sweet things or the *painful* sensation of a burn signal to the subject a positive or negative valuation of the perception of taste or temperature – according to the principle of self-preservation. Of course, the valuation system is permanently active with vital systems, i.e. also in the case of visual or auditory perceptions; think of the threatening effect of a fire. But the ratings themselves are not explicitly perceived here, but appear as attractive or aversive characteristics of the distant *object itself* motivating approach or escape.

'Sweet', 'disgusting', 'hot', etc., on the other hand, are ratings that are *explicitly perceived as*

⁸ For this reason, Sandro Nannini's attempt to 'naturalize' phenomenal consciousness and to interpret its phenomenal character as self-deception (Nannini 2014) also fails. Cf. also the critical considerations in Wetzel 2007, ch. 4.

ratings. For example, I touch a hotplate and feel a burning pain at the same time. Presumably, the following happens in principle – and very simplified – in this case: The temperature signal received via the heat receptors of the skin is forwarded to the valuation system, which then triggers an alarm signal – I would like to call this the *rating response*. This, I hypothesize, is *returned to the perception* and thus itself becomes perceptible as the *feeling* of a burning pain. The feeling is thus an *inner perception*. In perception, which is initially directed primarily 'outwards', an *inner dimension* is thus stretched out, in which the subject's own needs and sentiences can also be perceived. So the *feeling* is to be understood, with an apt formulation by Hegel, as a "finding-oneself-in-oneself" of the subject (Hegel 9.342 add., also 9.432 add.) and thus as an elementary form of the *actually psychic* (Wandschneider 1987; 1999).

Let us once again recall the sketched concept: Lower animals, such as an amoeba, react to a stimulus with a *reflex reaction*, and that obviously means that the stimulus goes to the valuation system, triggers a *rating response* there, which immediately initiates the reflex reaction. Here, the rating response directly controls the behavior. In contrast, higher animals no longer perform exclusively reflex reactions, but are increasingly controlled (according to the level of development) by *phenomenal perception*. What does this mean in concrete terms? Here, too, the received stimulus goes to the valuation system and triggers a rating response, which, however, is now *returned to the perception*, where it is *perceived as a rating* and thus becomes a *feeling*: According a feeling is a perceived valuation. In this case, the rating response no longer triggers the action directly. Rather, it itself is perceived, i.e. it is integrated into the overall phenomenal perception context and, as a *feeling*, controls the behaviour from the overall scenario of the perception thus expanded.

An often heard objection is that the feeling is basically superfluous: Why do I feel a burning pain? The valuation signal mediated by the temperature receptors could make my hand move back from the hotplate even without the feeling of pain. In fact, such automatism without the accompaniment of a feeling are widespread in animate nature. It is not necessary to go far down the hierarchy of animal organisms: As recent studies suggest (Frankfurter Allgemeine Zeitung of 7. 8. 2013), even fish (because they do not have a cerebral cortex, according to the neurobiological explanation) do not seem to feel pain when injured, although they show panic-like reactions. So why feelings in higher animals?

A thought experiment is instructive here. Let's assume, for the sake of argument, that touching the hotplate automatically makes my hand – triggered by the neural rating response – recoil *without* me feeling a burning pain. Now, for a 'higher' behaviour that is no longer directly controlled by rating responses but by *phenomenal perception*, this is a bizarre process: If phenomenal perception contains no feelings, it cannot control the behaviour consistently. It contains *gaps*, and in these cases reflexes must again take over the control. But how is perception supposed to provide reliable orientation if it is repeatedly thwarted and irritated by such reflex-like twitches? Once behavioral control has been coupled to phenomenal perception, such reflexes mean a devaluation of perception.

Generally spoken: For higher animals that live in complex and perhaps also rapidly changing environments, a permanently differentiated adaptation performance is required that ensures a functioning perception scenario. But this has vacancies as long as the perceptual *valuations* themselves are not perceived, too. Therefore the perceptual scenario must be completed by the valuations, and this is exactly what the *feelings* do. They would be functionless and superfluous only in the case of pure reflex beings; for the 'higher', phenomenally controlled behaviour, however, they are indispensable. It is obvious, therefore, that with the advent of higher animals a selection pressure became effective, which drove the evolution of a perception completed by feelings.

This means: If a primitive, purely reflective behavioral control is replaced by a more flexible, 'intelligent' control, i.e. one that is guided by the detailed phenomenal perception scenario, then this form of behavioral control is only optimal if the scenario includes the sphere of feeling. The completion of perception by feelings is an important step towards a more efficient steering and control of behaviour compared to pure reflex behaviour.

Let's look at the function of feeling from a different angle: The blood sugar level, for example, is a value of essential importance for higher animals and is therefore constantly monitored. This raises the question why behavioral control is not simply based on this decisive 'measurement value'

instead of the sweet impression, which would then be superfluous. Now, according to the developed consideration, the measured value of the blood sugar level would then have to be integrated into the phenomenal perception – in whatever way – because otherwise the perception would again contain vacancies.

But would that really be effective? It takes time for the blood sugar level to rise after a food intake; too much time for behavioral control because the current situation usually requires an immediate reaction. The testing of potential food, its defence against conspecifics and possibly also the learning effect associated with it are only possible 'in real time'. But by the time the blood glucose level has finally risen, the situation has long since changed, requiring different behaviour, in other words: Although the rise in blood glucose level is the actually relevant physiological success, this process is too slow for effective behavioural orientation. It could only be effective if the current impression of sugar *immediately* triggers a positive valuation, and this is what the feeling 'sweet' does. The physiologically relevant event 'increase of the blood sugar level' is in the positive valued *feeling 'sweet' symbolically anticipated* in order to meet the requirement of effective behaviour control – a further example of the constitutive interrelation of perception, valuation and behaviour.

There is still the possibility that the behaviour is simply controlled by the *measured value* of the sugar concentration itself, i.e. not by its delayed physiological effect (increase in blood sugar level), but directly during food intake. According to the principle of self-preservation, the measured value would of course have to be linked to a (here positive) valuation. Would this make the sweet *feeling* dispensable? Yes, if the rating response directly controls the behaviour, i.e. as in the case of lower animals triggers a reflex. In higher forms, where the action is not directly triggered by the rating response, but is controlled by the perception scenario, this, as we had seen, can only be effective if the perception is not incomplete, but also contains the valuations, which as such are then themselves perceptible. In this case, then, it is not the naked measurement or the associated rating response what is effective in controlling behaviour, but the perceived valuation of perception, and that is precisely what the *feeling* is. The argument that behaviour could simply be controlled by measured values instead of feelings is thus mistaken in the case of higher animals; it ignores the fact that perception under these conditions, as explained, must be completed by the perception of the valuations, i.e. feelings.

The *necessity of feelings* thus has a double reason: On the one hand, the avoidance of vacancies in the perceptual scenario, which would occur *without* feelings and would devalue perception as a medium of behavioural orientation. On the other hand, it has been shown that, for example, the sensory process of sugar must be symbolically coupled with the taste impression 'sweet', which is perceived as positive, in order to provide the immediate incentive for the absorption of sugar, because the physiological success actually associated with this – the increase in blood sugar levels – only occurs with a delay. In this case, the feeling provides, as it were, an *interpretation* of the physiological significance of certain sensory stimuli and is thus indispensable for effective behavioural orientation.

Both belong together, of course: Vacancies in perception can only be avoided in the way that perception is completed by feelings, thus explaining their *that*. The function of feelings as a symbolical interpretation of sensory stimuli explains what feelings perform, i.e. their *what*.

Feelings, typical for higher animals, represent something like an elementary consciousness, as it were. For by feeling pleasure and pain, the subject perceives himself. The feeling is – once again the word of Hegel – the 'finding-oneself-in-oneself' of the subject and in this sense to be understood as the origin of the emergence of consciousness.

References

- Bertalanffy, Ludwig von (1970) Gesetz oder Zufall: Systemtheorie und Selektion, in: Koestler/Smythies (ed. 1970), 71–95
- Bieri, Peter (ed. 1981): Analytische Philosophie des Geistes. Königstein/Ts. 1981: Hain
- Broad, Charlie D. (1925) *The Mind and its Place in Nature*. New York, London 1925: Harcourt, Brace, Kegan Paul, Trench, Trubner
- Buchheim, Thomas/ Hermann, Friedrich (ed. 2006) *Das Leib-Seele-Problem*. München 2006: Fink
- Bunge, Mario (1984) *Das Leib-Seele-Problem*. Tübingen 1984: Mohr
- Chalmers, David (1996a) Das Rätsel des bewussten Erlebens, in: *Spektrum der Wissenschaft* 1996/2, 40–47
- Chalmers, David (1996b) *The Conscious Mind. In Search of a Fundamental Theory*. New York, Oxford 1996
- Davidson, Donald (1990) *Handlung und Ereignis*. Frankfurt/M. 1990: Suhrkamp
- Davies, Martin/ Humphreys, Glynn W. (eds.) 1993: *Consciousness. Psychological and Philosophical Essays*. Oxford 1993: Blackwell
- Dennett, Daniel C. (1991) *Consciousness Explained*. New York, Boston, London 1991: Little, Brown and Company
- Elbe, Ingo/ Hogh, Philip/ Zunke, Christine (ed. 2014) *Oldenburger Jahrbuch für Philosophie 2012*. Oldenburg 2014: BIS-Verlag
- Frankfurter Allgemeine Zeitung vom 7. 8. 2013: *Psyche am Haken* (signed: jom)
- Hastedt, Heiner (1988) *Das Leib-Seele-Problem. Zwischen Naturwissenschaft des Geistes und kultureller Eindimensionalität*. Frankfurt/M. 1988
- Hegel, Georg Wilhelm Friedrich: *Werke in 20 Bänden*, ed. Eva Moldenhauer und Karl Markus Michel. Frankfurt/M. 1969 ff: Suhrkamp (cited, example: ‘9.48 add.’ verweist auf: works vol. 9, p. 48, addendum)
- Hösle, Vittorio (2006) *Encephalius. Ein Gespräch über das Leib-Seele-Problem*, in: Buchheim/Hermann (ed. 2006), 107–136
- Hösle, Vittorio (2007) Eine weder materialistische noch dualistische Theorie des Geistes. Rezension von: John R. Searle, *Geist*, in: *Deutsche Zeitschrift für Philosophie* (2007), 161–168
- Hösle, Vittorio/ Koslowski, Peter/ Schenk, Richard (ed. 1999) *Jahrbuch für Philosophie des Forschungsinstituts für Philosophie Hannover*, Bd. 10. Wien 1999: Passagen Verlag
- Koestler, Arthur/ Smythies, John R. (ed. 1970) *Das neue Menschenbild. Die Revolutionierung der Wissenschaften vom Leben*. Wien, München, Zürich 1970: Fritz Molden
- Kripke, Saul A. (1972, German 1981) *Name und Notwendigkeit*. Frankfurt/M. 1981: Suhrkamp
- Levine, Joseph (1983) *Materialism and Qualia: The Explanatory Gap*, in: *Pacific Philosophical Quarterly* 64, p. 354–361
- Levine, Joseph (1993) *On Leaving Out What It’s Like*, in: Davies/Humphreys (ed. 1993), 121–136
- Lorenz, Konrad (1973) *Die Rückseite des Spiegels. Versuch einer Naturgeschichte menschlichen Erkennens*. München, Zürich 1973: Piper
- Nagel, Thomas (1981) *Wie ist es, eine Fledermaus zu sein?* in: Bieri (ed. 1981), 261–275
- Nannini, Sandro (2014) *Die Naturalisierung des phänomenalen Bewusstseins*, in: Elbe/Hogh/Zunke (ed. 2014), 139–159
- Neuser, Wolfgang/ Reichold, Anne (ed. 2005) *Das Geheimnis des Anfangs*. Frankfurt/M. 2005: Peter Lang
- Pauen, Michael (2005) *Grundprobleme einer Philosophie des Geistes. Eine Einführung*. Frankfurt/M. 2005: Fischer
- Petry, Michael J. (ed.) 1987: *Hegel und die Naturwissenschaften*. Stuttgart: Frommann-Holzboog
- Popper, Karl R. & Eccles, John C. (1977) *The Self and Its Brain*. Berlin, Heidelberg, London, New York 1977: Springer
- Reichold, Anne (2005) *Handlungstheorie bei Donald Davidson*, in: Neuser/ Reichold (ed. 2005), 119–148
- Singer, Wolf (2002) *Der Beobachter im Gehirn. Essays zur Hirnforschung*. Frankfurt/M. 2002: Suhrkamp

- Wandschneider, Dieter (1987) Anfänge des Seelischen in der Natur in der Deutung der Hegelschen Naturphilosophie und in systemtheoretischer Rekonstruktion, in: Petry (ed. 1987), 443–475
- Wandschneider, Dieter (1999) Das Problem der Emergenz von Psychischem – im Anschluss an Hegels Theorie der Empfindung, in: Höhle/Koslowski/Schenk (ed. 1999), 69–95
- Wandschneider, Dieter (2008) Naturphilosophie. Bamberg 2008: C.C. Buchner
- Wandschneider, Dieter (2016) Zur Seinsweise des Psychischen, in: Zeitschrift für philosophische Forschung 70 (2016), 28–46
- Wetzel, Manfred (2001) Prinzip Subjektivität. Allgemeine Theorie. Erster Halbband. Würzburg 2001: Königshausen & Neumann
- Wetzel, Manfred (2007) Sokratischer Dialog über Hirnforschung. Würzburg 2007: Königshausen & Neumann