

To Anticipate Color: A Visual Resistance Phenomenon?

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Abstract

The purpose of this article is to explore the idea that experiential colour, i.e. colour as it *appears* for an observer, functions as a co-constitutive interface of the complex living system. It will be shown that, in order to render this idea intelligible, a new kind of metaphysical perspective is needed. This 'new' metaphysical perspective challenges the metaphysical stance that subscribes, from the viewpoint of a 'participating' observer, to the necessity of the question and the possibility of the answer. In this article, a metaphysical perspective will be proposed that argues, from the viewpoint of a 'contributing' observer, for the necessity of the answer and the possibility of the question. This allows for the possibility (i) to put forward complexity as a *necessary* answer, (ii) to claim a place for experiential sensoriality that functions as co-constitutive interfaces of the complex living system, and (iii) to secure a place where the philosophical question, or any other question for that matter, can bestow an *informative* contribution to the answer 'complexity'.

Keywords: Colour, complex living system, co-constitution, interface, Goethe.

1 Introduction

We live in a dynamical world in which questions arise and answers are given. Some of these answers make the claim of being universally applicable with regard to a specific dynamics under scrutiny. This means that, e.g. with regard to the dynamics of classical mechanics, all answers should fit the description of its definition. As a consequence, all questions that can or could contribute to the enrichment of this description can and may only be formulated within the 'participatory framework' of classical mechanics. Today, any scientific discipline or even sub-discipline can be regarded as a specific kind of participatory framework, i.e. a framework in which no *contributions* that put forward an alternative question are allowed. As a consequence, alternative questions that do not meet the standards determined by the scientific discourse under scrutiny, i.e. that are not 'participatory', are *either* rejected *or* get relocated outside the participatory framework, i.e. to the realm of the 'inter'.¹ However, when looked upon

¹ The notion of 'participatory frameworks' is reminiscent of Quine's (1948) statement with regard to 'conceptual frameworks, i.e., that the question with regard to what there is, is determined by what a conceptual framework *says* there is. Such a perspective however, when pushed to the limits, would allow for a zillion conceptual frameworks. This means that its all about semantics. By using the term 'participatory frameworks', the notion of an observer can be introduced, which will make it possible to take on a more structural viewpoint and thus introducing a contributing observer, which, in with regard to Quine, being a

closely, a particular kind of metaphysical stance can be discerned, i.e. a stance that subscribes to the necessity of advancing good questions and the possibility of giving answers. Now what would happen when we advance a metaphysical perspective that argues for the necessity of the answer and the possibility of formulating good questions? Such a metaphysical perspective would, from a viewpoint that recognizes the contributions of observers, make it possible (i) to put forward complexity as a *necessary* answer, (ii) to reclaim a structural place for sensorial experiences that function as co-constitutive interfaces of the complex living system, and (iii) to secure a place where the philosophical question, or any other question for that matter, can claim its force as an *informative* contribution to the answer 'complexity' – in contradistinction to the *determinative* participations, which, as will be shown, can only pertain to the answer *increasing* complexity, which, in fact, has nothing to do with complexity, but with complicatedness.

In order to render this new metaphysics intelligible, it will be illustrated – from an historical perspective that keeps pace with Kant, while not entirely following his trace –, in what way the bifurcation of the philosophical and scientific observer as *participatory* observers established itself from Descartes onwards. It will be argued that the distinction between primary and secondary qualities, through the exemplary case of the experience of colour being *not* allowed access in almost any participatory framework, was in fact responsible for this bifurcation. In order to close this gap, the possibility of complexity being a *necessary* answer will be explored from an anticipatory perspective. This will make it possible to render intelligible the idea that experiential colour, i.e. colour as it *appears* for an observer, functions as a co-constitutive interface of the complex living system. Here Goethe's experiential colour analysis will prove to be very enlightening.

participatory observer (see also footnote 8), not the case.

'Relocated' questions are questions that initially originated from an observer that aimed at contributing to the participatory framework but were rejected on the basis that they were *either* thought to be more suitable for being asked in another participatory framework, *or* could be positioned between – at least – two participatory frameworks. As participants of a particular participatory framework cannot claim knowledge on the questions and answers that are foundational for another participatory framework, the aforementioned 'suitable' questions can but remain in the realm of the 'inter'. Such questions *may* turn out to fit the participatory framework the questions are thought to be suitable for and will thus turn out to be formulated by, not a contributing, but a participating observer. As will be shown in this article, a participating observer in fact cannot be thought of as an observer as participatory frameworks claim observer independent validity. An exemplary case where a relocated question is allowed a place in the realm of the 'inter' is interdisciplinary research, i.e. a setting where multiple participatory frameworks try to solve a relocated question. As it turns out to be the case for many interdisciplinary research settings, the (relocated) question more than once serves only one of the participatory frameworks that join together. The contribution of the observer that originally put forward the question is thus rendered participatory for the participatory framework served. The contributing questioner has no other option than to choose in which framework he wants to participate. When a relocated question is explicitly positioned in the 'inter', this is due to the fact that the question joins a whole realm of relocated questions that have, as a whole, gained enough critical mass in order to be foundational for the emergence of a new participatory framework. Here, as in the previous case, contributions are in fact participations.

'Rejected' questions are questions that cannot claim any place within the discourse of participatory frameworks. The fact that they, however, *can* contribute as a contribution without falling into the discourse mentioned, is exactly what will be argued for in this article.

Finally, confronted with this new metaphysics, the task of philosophy will be clarified.

2 The Bifurcation of the Task of the Scientific and Philosophical Observer

Though the conception that humans are individuals has been around for quite some time², the idea of individuals being observers has only been thoroughly conceptualized since Descartes. By putting forward the famous statement 'cogito ergo sum', Descartes secured a definite place for rationality *in* the mind. Moreover, clear and distinct ideas became *the* observing capacities of the individual leaving behind the scholastic conceptualization of ideas as 'divine ideas' – which were a co-optation of Plato's forms. Furthermore, by introducing methodological doubt, knowledge became attainable only from the perspective of the 'ego cogito'. A consequence of Descartes' viewpoint was that objective knowledge could *not* be secured by the senses. His viewpoint cleared the way not only for making the distinction between the primary (e.g. the rays of light) and secondary (e.g. the experience of colour) aspects of nature, but also for distancing the path of philosophers from that of scientists. While the former took on the task of questioning the rationality of the mind and its connection to the world, the latter saw an opportunity to restrict their investigations to the 'primaries of nature', thus not so much aiming at securing a place for rationality *in* the mind but for the mechanics *of* the mind in grasping the aforementioned 'primaries of nature'.

Though Descartes cleared the way for a science of primaries, Galileo was the first modern scientist who articulated such 'primaries': "Hence I think that these tastes, odours, colours, etc. on the side of the object in which they seem to exist, are nothing else than mere names, but hold their residence solely in the sensitive body; so that if the animal were removed, every such quality would be abolished and annihilated. Nevertheless, as soon as we have imposed names on them, particular and different from those of the primary and real accidents, we induce ourselves to believe that they also exist just as truly and really as the latter" (Galileo in Burt, 1932, p. 85). Galileo here identifies the *quantifiable* aspects of the world as primary, thus securing the possibility of knowledge about the external world, which was in Descartes' system of thought left in doubt. Following the path laid out by Galileo, also Newton searched, not for the 'secondary' aspects of our world, but for the 'primaries of nature'. Being 'secondary', colours were for him but "Curiosities of little or no moment to understanding the Phaenomena of Nature" (Newton 1979[1704], p. 157). With agreement met concerning the framework of mechanics, the modern scientist was born as a *participatory* observer who could – and still claims he can – make, through the capacities *of* the mind, the *primaries of nature* intelligible.³

² This conception of the individual traces back to the ancient Greeks who claimed individuality only from the perspective of a privileged citizenship, which in turn only allowed privileged participation in *their* society, not allowing for other contributions.

³ It should be noted that the capacities *of* the mind were not the focal point of investigation to these scientists, nature was – and still is. On the concept of 'participatory observers', see also footnote 1.

While the early natural scientists secured the road for objective knowledge about the outer world, philosophers kept focusing on the ideas *in* the mind, which was – and still is – an entirely different project than that of the (natural) scientists. Or not? The least one can say is that, for philosophers, the capacities *of* the mind aren't limited to grasping the world mechanically. But what then *are* ideas *in* the mind?

According to Descartes, ideas, when clear and distinct, *are* clear and distinct *because* they are self-evident.⁴ In this way, clear and distinct ideas can be interpreted as a kind of anticipatory capacities that allow an 'ego cogito' to judge an object through the fact that it falls either inside or outside the clear and distinct ideas.⁵ Instead, according to Locke "our Ideas [are] nothing, but *actual* Perceptions in the Mind, which cease to be anything, when there is no perception of them" (Locke 1841[1690], p. 85, italics added). Thus, while for Descartes the inner clear and distinct ideas are able to 'grasp' the outer, for Locke, there is a direct relation from the outer 'perceivable' world to the inner ideas. Such a position hardly allows for the observer to *grasp* anything in the world. Things just get *thrown* at his empty mind. In contradistinction to the participatory framework of mechanics, Locke introduces a framework that secured a place for participation if and only if agreement is met upon the notion that ideas are *in* the mind.

Tagging along with Locke, Hume followed up on the direct relation between our ideas and the outer world and what has, since Locke, been known as British Empiricism. Hume claimed that though impressions, i.e. sensations, should be distinguished from ideas, i.e. memories and imaginings, only the former can be the source of our ideas (Hume 2008[1739]). However, in what way exactly the mind was equipped with capacities that could render such impressions intelligible, Hume made little advancement. At least he left room for a mind that was able to remember and imagine. This still left a veil of scepticism concerning the reliability of our perceptions and, as a consequence, about the observing capacities *in* the mind.

Kant aptly countered this scepticism in his *Critique of Pure Reason*. However, in order to do this, he also had to introduce the Newtonian perspective on modern science back in philosophy.⁶ Framed within this perspective only an epistemology about the

⁴ Descartes put this 'definition' of ideas forward in rule III, § 5 of his *Regulae*, which weren't published during his lifetime (Van Ruler 1999).

⁵ A consequence of this line of thought, which traces back to Galileo, is that 'obscure ideas' are ideas that have 'fuzzy boundaries'. Such are, among others, all ideas concerning the experiential nature of sensorial appearances. It is also these fuzzy boundaries Newton refers to in *The Principia* with regard to 'unequal surfaces' in his effort to define 'place': "Place is the part of space that a body occupies, and it is, depending on the space, either absolute or relative. I say the part of space, not the position of a body or its outer surface. For the places of equal solids are always equal, while their *surfaces* are for the most part unequal because of the dissimilarity of shapes; and positions, properly speaking, do not have quantity and are not so much places as attributes of places" (Newton 1999[1687], p. 409, italics added). Here Newton secures 'parts' within *static* space as no *positioning* of the body, i.e. movement in time, is allowed.

Still, this doesn't imply that when Descartes refers to clear and distinct ideas as capacities of the mind, the 'obscure' ones would be out of the mind, which would imply that we would always be correct in judging an object. In fact, the science of 'primaries' does exactly the opposite. Within such a framework, all judgments indeed are considered to be universally correct.

⁶ The Newtonian perspective rests on two assumptions: "The first of them is that the events we perceive in the external world are not entirely whimsical, but exhibit regularities; satisfy laws or rules. The second

law-like capacities of the mind, i.e. in the case of Kant the a priori principles, is allowed. Moreover, these capacities do not relate to what happens *in* the mind or even say anything *about* the mind. The question that concerned Kant was how the capacities of the mind can be sufficient and necessary to objectify appearances from the perspective of *any* observer. Indeed, as argued in Van de Vijver (in press) with regard to Kant's *Critique of Pure Reason* it is "in as far as the knowing subject succeeds in producing objective knowledge, it succeeds in producing an object of universality and necessity, and hence, the subject appears itself as a universal subject ultimately disconnected from the object". Consequently, Kant's 'universal observer' *needs* to be a participative observer. However, contrary to Newton's, his 'universal observer', is an observer in an ideational participatory framework that is founded on the viewpoint *that* there is something that can be objectified from the perspective of an observer. *What* there is to be objectified has to be 'secured', a.o. by the natural scientists.⁷

Though Kant's universal subject can most certainly not be equated with the Newtonian one, a lot of philosophers, in fact all of the direct realist positions in philosophy, have tried to close the gap by favouring the Newtonian viewpoint. These positions however don't take into consideration the fact that Kant (i) was well aware of the restriction he made in his *Critique of Pure Reason* with regard to 'dead systems' and (ii) analyzed these 'dead systems' on the basis *that* they are ideationally there, not *what* they mechanically are. The latter point becomes more explicit in his *Critique of Judgment*, more specifically in the second part on teleology, where he asserts that 'living systems', i.e. organisms, *cannot* be objectified, i.e. that there is no rule under which living organisms can be subsumed. But what is happening here? The subject is allowed its Cartesian 'ego cogito' but with regard to the 'living' none of the '*in mind*' stuff is adequate? Don't things get confused here? No, as Van de Vijver (in preparation) states, Kant here "reveals the non-detachable working of the subjective conditionality", i.e. that the observer is allowed a *meaningful* engagement in relation to living systems. But what does this meaningfulness exactly stand for. Is this meaningfulness to be located *in* the mind in the sense of *in* the brain? Can't it, for instance, be possible that meaningfulness *in* the mind is actually situated *in* the world? This is what will be clarified in the next section by outlining the boundaries of the mind's anticipatory capabilities.

is that these regularities can be perceived and articulated by the human mind" (Rosen 1988, p. 212).

⁷ Scrutinizing the viewpoint on *what* there is, Gurwitsch (1966) points out that Galileo "[b]y way of abstraction and idealization, [...] arrives at the conception of nature as a closed and self-contained corporeal world within which all events are determined in advance" (p. 412). In this viewpoint, the place of the observer as observer is not of concern. The only thing he can do is to *take part* in 'objectivity'. Claiming, as did Kant, the observer to be a universal observer with regard to the question *that* there is something to be objectified, leaves the observer 'universally' *take part* 'subjectivity'. In both cases, the observer, after a participatory framework is paradigmatically established, can only participate in what this participatory framework says there is, thus stripping him from the possibility of being an observer that can put forward alternative questions.

3 The Case for an Anticipatory Observer: Towards Interfaces

When viewing Kant's architectonic work, one can hardly deny that, by stripping away 'secondaries' from the objectification procedure, a supplement of meaning becomes a necessary condition for the observer to actually be a 'living' observer at all. Moreover, such a *meaning*, being colourless, tasteless, odourless, inaudible and un-touchable, can only be 'intelligible'. As such intelligibility does not impose a rule and cannot be law-like with regard to living systems, the question can be raised whether such intelligibility is to be regarded as being on the same 'secondary' level as the experiential nature of sensorial appearances. Is meaning *sensorial*, e.g. colourful?

By answering the question negatively one has no other option than to allow for a law-like intelligibility 'up to a certain point', i.e. up to the point where the 'living' kicks in and in an instance, a non law-like intelligence appears. But who is to decide the 'exact' point where the 'dead' starts 'living'?

As our law-like intelligence makes it possible to ascertain knowledge – about 'dead things', 'primaries' – that keeps expanding exponentially in more detail than ever before, things are said to be getting *increasingly* complex. But how can 'dead things' be complex? This is exactly the point where Rosen (1988) says that complexity "confronts us with a conceptual, and not a technical problem" (p. 211). Thus, complexity is not about adding a property to a system – which can be any system, any participatory framework. Moreover, adding properties is exactly what adding questions from the perspective of a participatory observer is about. It is about 'claiming the system', about fighting for the system, which, apparently, needs to be defended within a participatory framework. It is about questions pertaining to the participatory framework getting more *complicated*, not about coming to a magical point where things suddenly appear as *complex*. Still, discerning complicatedness from complexity doesn't bring us any further on what complexity 'is'. Denoting complexity as a 'conceptual problem' still leaves a lot of questions unanswered. E.g. what if the external controllability of complicated things is dropped in favour of a viewpoint in which complexity is grounded by an understanding of its internal point of view as put forward by Van de Vijver et. al. (2003)? Does this question help us any further as either position – the complicated and the complex – can be seen to be defensible within some participatory framework? But what if complexity 'is' in fact the answer? Then, it becomes futile to ask the 'either-or' question.⁸ Then, it becomes possible to ask a *contributing* question: why should, from the perspective of complexity being the answer, the 'internal point of view' be *located* internally? Why not adopt the viewpoint that the outside world "acts as an *external memory* that can be probed at will by the sensory apparatus" (O'Regan and Noë 2001)? Then

⁸ This is, in fact a typical question asked by a participatory observer that takes part in the participatory framework of analytical philosophy. E.g. Quine, by putting forward the question on ontological decidability with regard to incompatible conceptual frameworks, claimed, from within a participatory framework of an observer that is able to gain knowledge about ontological matters, i.e. can 'take part' in it, that the question on what there 'is' should be decided on the basis of what a conceptual framework says there is. See also footnote 1.

it becomes possible to explore the idea that colour functions as a co-constitutive interface of the complex living system.

Now, when rephrased negatively, the idea proposed states that the omission of 'secondaries' undermines the possibility of complexity. This however, seems to suggest its counterpart, i.e. that when 'secondaries' are added to the *complicated*, dead things could come to life. As will be argued below, being incapable of anticipatory behaviour, they cannot. So let's take a look at what happens when the question whether meaning is sensorial is answered positively.

As pointed out by Rosen (1988), in systems that are merely complicated and that obey Newtonian-like laws, i.e. 'simple systems', "there is no room left for any kind of behaviour which may be termed *anticipatory*" (p. 217). Indeed, how could, from the perspective of law regulated, static, simple systems, the coordinated determination of which Rosen reserves the term *state spaces*,⁹ the condition for anticipatory behaviour, i.e. the element of time, be introduced? Rosen argues it cannot and claims that anticipatory behaviour can only manifest itself from the perspective of complexity. Though the element of time is of the essence here, depending on the observer, various perspectives with regard to the time-aspect can present itself. Thus, while according to Rosen, "an anticipatory system may be defined as one in which *present* change of state is, at least in part, determined by *future* state or *future* input (Rosen 1988, p. 217, italics added), for Van de Vijver (1997) anticipation is the result of a particular *history* between the systems capacities and its experience with an environment. The question here remains how to reconcile both perspectives with regard to the anticipatory capabilities of a complex system without falling victim to the discourse of 'state spaces' by securing a *static* 'middle' in which anticipations pertaining to future and past determinations, combine. A more suitable definition, which allows for a more *dynamic* 'middle' of the anticipatory capabilities of a complex living system might be the one from Atlan: "the appreciation of anticipation takes place at the *interface* between a system and its environment" (Atlan paraphrased in Van de Vijver 1997, p. 34). This definition allows for introducing mediating conditional elements with regard to complexity, i.e. *interfaces*. On this subject, the experience of colour presents an interesting case at hand.

4 Colour: Its Function as Co-constitutive Interface of the Complex Living System

4.1 Goethe and the Visible, Colourful World

A consequence of holding onto the mechanical viewpoint is that the scientifically identified parts get prioritized over the fact *that* there are experiential things waiting to be objectified. However, from a constitutional point of view, this prioritization is hard to hold on to. Focussing on colour experience, Junichi Murata, paraphrasing Husserl's

⁹ A 'state space' is the 'outside' part of the dual structure of a dynamical system, which is coupled by the 'inside' part that provides a set of dynamical laws that superimpose the 'state space' (Rosen 1988, p. 216).

constitutional fallacy, explains aptly why: "It is not the case that we first have physical, chemical and physiological knowledge about our colour perceptions and that only then, on the ground of this knowledge, we evaluate the ontological status of colours. Rather, we begin our scientific investigations only on the ground of various perceptual experiences of colours" (Murata 2007, p. 58). Moreover, in order to avoid the constitutional fallacy, there remains only this alternative: "that we presuppose from the beginning the visible colourful world" (Murata 2007, p. 59). This is exactly what Goethe did in his *Theory of Colours*. In the book, the possibility that colour functions as a co-constitutive interface of the complex living system is for the first time explored.

By asserting "Nichts ist stillstehend", Goethe (1808) countered the efforts of those scientists that wanted to coin nature in static descriptions.¹⁰ With such descriptions, the experiential nature and dynamics of, e.g. colour appearances, is reduced to the realm of the Galilean-Newtonian 'primaries'. Theorizing – the case here being mechanics – is thus derived from abstraction and idealization processes, which *seems* to allow for a contributing observer. However, as the claims made by this theorizing practice require universal validity, the observer cannot be but 'participative' in the participatory framework of mechanics.¹¹ Goethe countered such practices fiercely in his attack on Newton's way of securing knowledge with regard to the primaries of nature, which is the business of ascertaining an adequate theory derived from facts. Goethe didn't see things this way. According to him, the facts *are* the theory (Zajonc 1987). In many ways this statement is reminiscent of the metaphysical idea proposed, i.e. that complexity *is* the answer.

With the viewpoint that the facts *are* the theory, Goethe tried to secure, not only a place for sensorial appearances, i.e. 'secondaries', but also for the realm of the whole. The interconnection of both allows for a transformation of the metaphysical claims made in the participatory framework of mechanics, to the metaphysical claim that the complex living system should be regarded as a necessary 'answer'. However, Goethe himself didn't profess the latter metaphysical perspective. His was a critique of the fact that the facts are not restricted to separate analyses in various participatory frameworks; that the facts aren't analysable in 'parts' from the perspective of 'complicatedness' *only*, but are *also* observable as a 'complex whole'. Thus, neither sensorial appearances nor the complex whole are separable. They are also neither located 'outside', nor 'inside'.

Goethe's scientific framework allows for the possibility to look for the 'first idea', the 'pregnant point' (McCarthy 2001), i.e. the "eminent cases which are representative of many other cases, include a certain totality, require a certain order, excite something similar or strange in my mind and make claims both from outside and inside to a certain unity and totality" (Goethe quoted in Welleck 1986, p. 211). These 'eminent cases' are not objects or part of objects to be found in nature by putting forward necessary ques-

¹⁰ Such 'static descriptions' give priority to what Goethe calls 'the sign', as in signs used in mathematics. On this matter Goethe remarks the following: "Yet how difficult it is to put the sign in the place of the thing; how difficult to keep the being [Wesen] always livingly before one and not slay it with the word" (Goethe quoted in Zajonc 1987, pp. 228).

¹¹ See also footnote 7.

tions that could give possible answers,¹² they *are* the answer, not to be found by a universal participatory observer, but by an observer that is allowed a polyperspectivist viewpoint (McCarthy 2001). This means that the part nor the whole are disconnected from the viewpoint of a contributing observer, whatever those contributions might be. With regard to this interconnectedness of the subject and the world Goethe remarks: “yet, had I not the world already in my soul through anticipation, I should have remained blind with seeing eyes, and all experience and observation would have been dead, unproductive labour. The light is there, and the colours surround us; but, if we had no light and no colours in our own eyes, we should not perceive the outward phenomena” (Goethe 1850, pp. 141-142). Here, Goethe not only introduces colours as being out there, but also being in us. Moreover, colour isn’t an *Objekt* that could be objectified, which is exactly what the Newtonian perspective asserts, but a *Gegenstand* (Käuser 1997).¹³ As such, colour ‘resists’ the anticipatory capacities, which in the case of Goethe can be regarded as the “productive input of human imagination” that can lead, in contradistinction to the workings of Descartes’ clear and distinct ideas, to “changes in the observer’s sense of self” (McCarthy 2001, p. 22).¹⁴ As will be shown in the next subsection, such a ‘change of self’ allows for putting forward alternative questions with regard to anything denoted as clear and distinct, thus making it possible to ask alternative, contributing questions that fit a structural, not participatory, framework, i.e. that pertain to the answer ‘complex living system’.

4.2 Colour, its Co-constitutive Function

By taking into account *living systems* Kant (1987[1790]) laid the foundations of a co-constitutive perspective, which for Kant stands for a perspective pertaining to “*knowledge* [being] the result of a co-constitution, a co-determination between two terms. It involves on the one hand the knowing (observing) instance, with its choices, purposes and interests, and on the other hand the living (observed) system” (Van de Vijver et. al. 2004, p. 66). As mentioned above the exact locus for this co-constitution is *meaningfulness*, residing as well on the side of the ‘observer’, who participates in the ‘meaning part’ which was more or less suspended in Kant’s *Critique of Pure Reason*, as also on the side of the ‘observed’, which is acknowledged its ‘own’ purposiveness.¹⁵ However, this leaves meaningfulness as such, to be a kind of ‘glue’ that tries to fit man and the world of living systems in some kind of participatory framework in which questions

¹² The case of ‘colour’ is here exemplary as the questions with regard to colour have acquired many ‘answers’ in different ‘participatory frameworks’.

¹³ The difference between the German ‘Objekt’ and ‘Gegenstand’ is an important one, though often not noticed as in English both are translated as ‘object’. ‘Gegenstand’ refers to the fact *that* (some)thing *resists*, a ‘feature’ that isn’t present in the term ‘Objekt’.

¹⁴ It should be noted that McCarthy (2001) himself, doesn’t refer to anticipation.

¹⁵ With regard to purposiveness Kant refers to living systems as self-organizational: “[...] just as each part exists only *as a result* of all the rest, so we also think of each part as existing *for the sake of others* and for the whole, i.e. as an instrument (organ). [...] Only if a product meets that condition, and only because of this, will it be both an *organized* and *self-organizing* being, which therefore can be called a *natural purpose*” (Kant 1987[1790], p. 253).

asked pertaining the *possible* answer 'meaningfulness' *need* to relate to an observer that *takes part* in this particular framework. This implies that, as meaningfulness can be considered to be, not pertaining to the capacities or principles of the mind, but an *in* mind self-organizational disposition that is claimed to be transformable to nature, it still remains within the realm of the observer. This however, needn't be the only way to make co-constitution intelligible.

Indeed, Goethe saw co-constitution from another perspective. As pointed out by Simmel (1916), "Goethe does not, as Kant does, suggest that the mental [Geistige] inner of the subject is the centre of nature, but, that the latter [the centre of nature], being everywhere, is also to be found in the human mind" (p. 31, translation mine).¹⁶ Thus, while Kant puts nature on its knees by – the meaningful – means of the universal observer, Goethe coins the exploratory nature of the human mind in its capacity to question nature in its totality, primary *and* secondary qualities included. This means that, with Goethe, it becomes possible, not to 'grasp' living systems and to coin their self-organizational nature, but to put forward an informative contribution of *an* observer with regard to the complex living system – in the singular. As Goethe was weary of mathematics¹⁷ and declined, maybe not to 'primaries' themselves but to the way their practitioners, i.e. participatory observers, have handled them, priority is given to 'secondaries'.¹⁸

Now, it is not claimed that knowledge about the 'complex living system' is attainable at this moment. What is put forward is that 'colour', or any other sensorial aspect, can take the function of an interface in order to be able to position oneself as an observer that is able to formulate, not being limited to participatory frameworks of any kind, informative questions that can contribute to the intelligibility of the *answer* 'complex living system'.

5 Final Remarks

Is it the job of philosophy to claim any participatory framework? Is it in our nature to participate? Should the philosopher claim a place in the post-disciplinary realm? These are questions that are difficult to answer. However, with the metaphysical perspective

¹⁶ "Goethe meint nicht, wie Kant, dass das geistige Innere des Subjekts das Zentrum der Natur sei; sondern dass dieses letztere, wie und weil überall, so auch im Menschengest zu finden sei" (original German text).

¹⁷ On mathematicians Goethe says: "Mathematicians are a species of Frenchmen; if you say something to them they translate it to their own language and presto! It is something entirely different" (Goethe quoted in Casti 1994, p. 43).

¹⁸ Goethe's claim is reminiscent of Aristotle who, in *On sense and the sensible* remarks that "the faculty of seeing, thanks to the fact that all bodies are coloured, brings tidings of multitudes of distinctive qualities of all sorts; whence it is through this sense especially that we perceive the common sensibles, viz. figure, magnitude, motion, number: while hearing announces only the distinctive qualities of sound, and, to some few animals, those also of voice. Indirectly, however, it is hearing that contributes most to the growth of intelligence. For rational discourse is a cause of instruction in virtue of its being audible, which it is, not directly, but indirectly; since it is composed of words, and each word is a thought-symbol. Accordingly, of persons destitute from birth of either sense, the blind are more intelligent than the deaf and dumb" (Aristotle 1994).

here presented, this task may become a little bit simpler but at the same time more difficult, because indeed, the job of philosophers is, I think, that they take into account the experiences of *any* observer in his or her confrontation with the sensorial aspects of our lifeworld. Let me end with the words of Goethe (1962, p. 651): "Everything is simpler than you think and at the same time more complex than you imagine".

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References

- Aristotle (1994). On sense and the sensible. The Internet Classics Archive by Daniel C. Stevenson, Web Atomics. URL: <http://classics.mit.edu/Aristotle/sense.mb.txt>.
- Burt E.A. (1932) The metaphysical foundations of modern physical science. Garden City, New York, Doubleday Anchor.
- Casti John L. (1994). Complexification. Explaining a Paradoxical World Through the Science of Surprise. Harper Collins: New York.
- Descartes René (1985). The Philosophical Writings of Descartes. Vol. 1. Translated by J. Cottingham, R. Stoothoff and D. Murdoch. Cambridge: Cambridge University Press.
- Goethe J.W. (1850). Conversations of Goethe With Eckermann and Soret. Smith, Elder & Co.: London.
- Goethe J.W. (1962). Johann Wolfgang Goethe, Gedenkausgabe der Werke, Briefe und Gesproche. [Johann Wolfgang Goethe, Collected Works, Letters and Conversations]. Beutler E., ed., vol. 9. Artemis-Verlag: Zurich.
- Goethe J. W. (1963[1808]). Materialien zur Geschichte der Farbenlehre. Deutscher Taschenbuch Verlag: München.
- Goethe J. W. (1966[1810]). Zur Farbenlehre. Didaktischer Teil. Hamburg: Christian Wegner, 5th ed.
- Gurwitsch Aron (1966). Studies in Phenomenology and Psychology. Northwestern University Press, Evanston.
- Hume David (2008[1739]). A Treatise on Human Nature. NuVision Publications.
- Husserl Edmund (1960[1931]). Cartesian Meditations. Kluwer: Dordrecht.
- Kant Immanuel (1987[1790]). Critique of Judgment. Hackett Publishing Company: Indianapolis and Cambridge.
- Kant Immanuel (1997[1787]). Critique of Pure Reason. Cambridge University Press: Cambridge.
- Käuser Andreas (1997). Goethe's Redeweise über die Farbe. Zeitschrift für Germanistik, vol. 7, no. 2, pp. 249-261.

- Locke John (1841[1690]). An essay concerning human understanding. Tegg and Co.: Dublin.
- McCarthy John A. (2001). The "pregnant point": Goethe on complexity, interdisciplinarity, and emergence. In: *Goethe Chaos and Complexity*. Rodopi: Amsterdam.
- Merleau-Ponty Maurice (2005[1945]). *Phenomenology of Perception*. Routledge: London.
- Murata Junichi (2007). *Perception, Technology and Lifeworlds*. The University of Tokyo Center of Philosophy.
- Newton Isaac (1979[1704]). *Opticks*. Dover Publications Inc.: New York.
- Newton Isaac (1999[1687]). *The Principia: Mathematical principles of natural philosophy*. Berkeley: University of California Press.
- O'Regan J. Kevin and Noë Alva (2001). A sensorimotor account of vision and visual consciousness. *Behavioral and Brain Sciences*, vol. 24, no. 5, pp. 939-1031.
- Quine W. Van Orman, (1953 [1948]). On what there is. In: *From a Logical Point of View. 9 Logico-Philosophical Essays*. Harvard University Press: Cambridge
- Rosen Robert (1988). Complexity and information. *Journal of Computational and Applied Mathematics*, vol. 22, pp. 211-218.
- Simmel Georg (1916). *Kant und Goethe. Zur Geschichte der modernen Weltanschauung*. Kurt Wolff Verlag: Leipzig.
- Van de Vijver (in preparation). No genetics without epigenetics. No biology without systems biology.
- Van de Vijver et. al. (2003). Reflecting on the complexity of biological systems: Kant and beyond? *Acta Biotheoretica*, vol. 51, pp. 101-140.
- Van de Vijver et. al. (2004). Philosophy of biology: outline of a transcendental project. *Acta Biotheoretica*, vol. 53, pp. 57-75.
- Van Ruler Han (1999). *De Uitgelezen Descartes*. Lannoo: Boom.
- Von Weizsäcker Carl Friedrich (1987). Goethe and modern Science. In: *Goethe and the Sciences: A Reappraisal*. D. Reidel Publishing Company: Dordrecht, Boston, Lancaster, Tokyo, pp. 115-132.
- Welleck René (1986). *A history of modern criticism 1750-1950*. Yale University Press: New Haven.
- Zajonc Arthur G. (1987). Facts as theory. In: *Goethe and the Sciences: A Reappraisal*. D. Reidel Publishing Company: Dordrecht, Boston, Lancaster, Tokyo, pp. 219-246.