

Introduction

The Enactive Approach to Qualitative Ontology: In Search of New Categories

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This Special Issue is dedicated to building a bridge between different disciplines concerned in the investigation of the qualitative dimension of experience and reality. The two main objectives of the Issue can be summarized as follows:

- to elucidate the need for a revision of categories to account for the qualitative dimension in various disciplines (that include, for example, the cognitive sciences, neurosciences, biology, linguistics, informatics, artificial intelligence, robotics, newly emerging computer technologies) in order to develop an ontology that can better account for the qualitative, dynamic and relational aspects of different domains of reality;

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- to explore the implications of the enactivist view for a relational and ecological account of the qualitative dimensions of life and cognition;

Actually, different fields of philosophy and science deal with qualitative aspects of reality, and they need to account for them through description and analysis. However, are the conceptual categories available today well-suited to satisfying this need?

A negative answer could follow from the observation that a long tradition, from Galilei onward, has in fact removed the qualitative properties from a certain “scientific image” of the world. This theoretical option has accompanied the “psychologization” of the qualitative, tracing it back to the merely mental sphere. This view, however, manifests all its limitations when we turn our attention to those objectual domains for which the qualitative dimension seems to be essential and not eliminable. The reflection on these limitations has led more and more to the exploration of alternative views, which can adhere more faithfully to the common-sense reality, and which are able to describe and analyse its qualitative dimension.

However, some of these approaches still risk being based on old conceptual categories, which depend on a point of view that assigns a primacy to the quantitative dimension over the qualitative. In particular, if these approaches conceive of the objects of experience as absolutely mind-independent realities, they run the risk of not adequately accounting for their relational, dynamic and ecological aspects, which crucially depend on the relation with a perceiving organism.

There is, therefore, the need for elaborating new conceptual categories that, beside the old ones, are able to offer a better account of the qualitative dimension. We need, specifically, ontological categories that are explicitly conceived and based on the prerogatives of the qualitative dimension, and not subordinated to the quantitative one, and which account for the dynamic, relational and ecological dimensions of life and cognition.

It is here that the enactive approach offers a different framework, with its idea of cognition as a reciprocal *enactment* of both a mind and a world, and not a representation of a pre-given world by a pre-given mind. Constituting a specific alternative to both subjectivism and objectivism, the enactive approach offers a different way to develop the ontological investigation, grounding it on the phenomenological analysis of lived experience. In particular, by conceiving the relation between mind and world as dependent co-origination, the enactive

approach allows us to disclose the dynamic, temporal and relational nature of the qualitative dimension.

By this, the enactive approach to qualitative ontology can allow us to develop the new categories which we are seeking. The elaboration of these categories can lead to a better description and analysis of the objects of different scientific domains. Furthermore, rather than replacing the classical (quantitative and mereological) categories with new ones, it can complement them, all the better to offer, in addition, a mathematical treatment of qualitative aspects of reality. In this way, the new categories of a qualitative ontology can simultaneously serve as a framework for those disciplines that are in need of a qualitative, dynamical and relational analysis of their objects.

The one proposed by the enactive approach is an attempt to hinder the Cartesian bifurcation of reality into *res cogitans* and *res extensa*, into psychological and physical events. Such an approach implies a participatory share of features with phenomenology, in its attempt at redefining the specific character of cognition and of life phenomena.

All the essays here collected explore various options for accounting for the qualitative dimension of experience and reality and, therefore, for developing a qualitative ontology, against certain scientific abstractions that have expelled the qualities from the ontology of nature. The enactive approach is explored and developed, more or less explicitly, by various essays of this volume, which investigate the possibility of overcoming the duality of subject and object by looking at their reciprocal enactment in the experiential relation.

In particular, the rethinking of the categories through which is possible to account for the qualitative dimension leads the authors to develop some common and intertwined themes. Three of these thematic areas can be found, in particular, within the essays.

First, the rethinking of the qualities leads to a rethinking of the notions of *nature* and *matter*, in order to develop a qualitative ontology that admits, in contrast to the Galilean abstraction, the presence of sensible qualities in Nature (MacKenzie, Lanfredini and Longo, Nagataki, Simanke).

The development of a qualitative ontology of Nature, in particular, goes together with the rethinking of the *epistemology* and *ontology of the living*. In various essays here collected we can find an original reflection on concepts such as organism, life and evolution, in ways that crucially involve the qualitative dimension (MacKenzie, Lanfredini and Longo, Pagni, Meacham). And the reflection on these concepts, in light of a rethinking of the qualitative dimension,

leads to thematize also crucial concepts such as potentiality, virtuality and sense-making.

Rethinking the location of the qualities in experience and reality also leads many of our authors to reflect upon the place of *meanings* and *values* in the ontology of nature and subjectivity (MacKenzie). Meanings and values are analysed in their role in biology – *biosemiotics* and *bioenactivism* (Pagni and Meacham) – as tertiary properties of the experienced objects and events, and in the cultural processes of meaning formation (Viik).

Finally, the focus of the philosophical reflection on the qualitative domain, allows to develop a phenomenological investigation of various experiential domains, developing, for example, a descriptive analysis of states such as feelings, emotions and moods, in their crucial role in the constitution of bodily subjectivity (Vanzago).

In the following, the presence of these themes in the invited contributions to this volume will be highlighted, with a brief summary of each of them.

In “Epistemology and Ontology of the Quality: An Introduction to the Enactive Approach to Qualitative Ontology” – which serves also as an extended introduction to this Special Issue – Pace Giannotta highlights the way how the notion of *quality* constitutes the title of a fundamental and pressing problem for contemporary philosophy. The author shows how the issue of the location of the qualities of experience and reality leads to thematize the “clash” between the so-called scientific and manifest images of the world, and how this issue also lays at the heart of the debate on naturalism and reductionism in the philosophy of mind. Pace Giannotta, then, develops a transcendental version of the enactive approach, by combining it also with Husserlian genetic phenomenology. For the author, this view, thanks to its conception of the relation between subject and object as dependent co-origination in the process of experience, constitutes an alternative to what he calls the *internalism about qualities* (linked to *scientific realism* and *naturalism*) and to the *externalism about qualities* (linked to *naïve realism* and *naturalism*). In Pace Giannotta’s view, then, the enactive view constitutes a processual and relationist framework that can be fruitfully applied to the investigation of different ontological domains (*enactive ontology*). In the conclusive section, the author also distinguishes between an ontological and a metaphysical interpretation of the monistic view that emerges from the enactive conception, arguing for an ontological and empirical (and not metaphysical) interpretation of the enactive approach to qualitative ontology.

In “Dewey, Enactivism and the Qualitative Dimension”, MacKenzie argues for the confluence of Dewey’s pragmatic naturalism and enactivism. Both, precisely, give an account of the qualitative dimension that overcomes the limits of the “scientific image” of the world, with its bifurcation of nature into the subjective and the objective, the qualitative and the quantitative. Indeed, Dewey’s naturalism leads to a process ontology in which the qualities are not subjective nor objective, being qualities that «emerge from ongoing organism-environment transactions». For Dewey, precisely, transactions must be conceived as primary processes that precede the distinction between subjective and objective, mental and physical. Indeed, differently from an *interaction*, which occurs between independently specifiable entities, a *transaction* «occurs between mutually specifying and co-determining (sub-)systems». It is precisely the notion of transaction that MacKenzie finds at play also in the enactive approach, where it is called *enaction*. In particular, in the analyses of color vision and color ontology that preceded and lead to the enactive approach of *The Embodied Mind*, Varela and Thompson proposed their view as an *ecological* and *experientialist* alternative to both subjectivism and objectivism about color. In the enactive view, colors are qualities of the interactions between organism and environment that, in turn, are not pre-given domains, but co-emerge in the enactive process. Through the reference to biological considerations on the characteristics of living organisms and environment (such as the sensory capacities of bees and plant features), the enactive approach gives a fruitful account of the *co-evolution* of organism and environment in natural history. Then, by stressing the confluence of Dewey’s pragmatist naturalism and the enactive proposal, MacKenzie introduces also another important consideration: in the transactional-enactivist account the qualitative is a multifaceted relational domain. In contrast to the impoverishment of nature that is produced by certain scientific abstractions, affective, aesthetic and practical aspects constitute the qualitative richness of a Nature that is endowed at the same time with primary, secondary and tertiary properties and, therefore, with meanings and values.

In “Epistemology of the Inert and Epistemology of the Living”, Lanfredini and Longo highlight too the limits of a certain scientific-mathematical image of the world on accounting, in particular, for the specificities of the biological domain. In order to develop an adequate epistemology of the living, distinct from the epistemology of the inert, they propose to rethink the categories

through which we conceive of matter, in ways that crucially involve the qualitative dimension (conceived in its peculiarity, and not as subordinate to the “primary”, physical-mathematical dimension). For the authors, the limit of the epistemology of the inert is evident when, for example, genetics appeals to abstract concepts such as information and program, which disregard the concrete materiality of the living being. In particular, a limit of this epistemology is that it privileges fixity over movement, conceiving of the temporality of matter as a succession of instantaneous phases, like the frames of a movie, and, in this way, is not truly able to account for genuine *novelty* and *creativity* in the evolution of the living. The new categories proposed by the authors, then, point towards a *qualitative conception of matter*, conceived as characterized by a continuous actualization of the virtual, that in natural history proceeds as an underlying impulse towards the actualization of possibilities and tendencies.

In “Why Explicit Semiotic Grounding is Essential to Biology as a Science? The Point of View of Biosemiotics”, Pagni too looks at the biological domain, introducing the field of *biosemiotics*: a research program that seeks to overcome the limits of neo-Darwinism on accounting for the evolution of the living. Biosemiotics, precisely, argues that the natural selection based on merely random variations is an incomplete account of evolution, and that it must be replaced (or completed) by a semantic theory of evolution, which conceives of signs as the basic unity for studying life. According to this perspective, living systems are sign systems, which act through control constraints that canalize and control biological processes in an essential relation with the environmental context. The model of biosemiotics, then, overcomes the limits of the neo-Darwinist conception of the phenotype as strictly determined by the genotype alone, making room for the semiotic process of interpretation that lays at the heart of biological life.

Meacham, in “How Low Can You Go? BioEnactivism, Cognitive Biology and *Umwelt* Ontology”, addresses the issue of the viability of an enactive account of biological phenomena (*bioenactivism*), claiming that it depends on the scalability of its central concepts across the phylogenetic spectrum. Enactivism usually identifies in the cell, conceived as an autopoietic or autonomous system, the minimal form of life and cognition. In this view, autopoietic systems, endowed with a membrane that defines their borders, co-constitute their respective *Umwelten* by entering in metabolic relations that

involve recognition and reaction and, therefore, cognition. Recent developments of the enactive approach add to the originary proposal also the virtual and semiotic dimension. Bioenactive approaches, then, conceive of the organism as engaging in teleonomically oriented behaviour, which recognizes the environment (*Umwelt*) as endowed with meaning and value, and engages in anticipatory, future-oriented behaviour (*virtuality*). In De Jesus' version of biosemiotic enactivism, the behaviour of the organism enacts an environment that is conceived as a relational domain constituted through interactive sign processes. However, by drawing on Goodwin's and Kovac's cognitive biology, Meacham argues that the related concepts of cognition and *Umwelt* can be scaled below the level of the organism, down to the biomolecular level. Indeed, in Goodwin's cognitive biology, biological systems can be conceived as cognitive systems, insofar as they behave on the basis of rules that are grounded in embodied knowledge about the environment. Biological-cognitive systems test hypotheses about the environment, showing creative and teleonomic orientation in their behaviour. At this point, the issue is: how low can cognition go? Kovac's thesis, endorsed by Meacham, is that cognition is present also at the biomolecular level, in the behaviour of proteins. Indeed, proteins are non-nomic chemical systems, which perform goal-directed teleonomic functions and show an exploratory behaviour. In particular, by shifting their shapes, proteins alter their material conformation as a response to sign relations in the *Umwelt*. Meacham's thesis, then, is that, notwithstanding the fact that proteins are not autonomous-autopoietic systems, they are indeed cognitive systems that enact *Umwelten*. As a consequence, Meacham outlines an enactivist, *Umwelt ontology*, conceived as constituted by intertwined and nested *Umwelten* at various levels (from proteins to cells, organisms, populations), and centred not on autonomy but on the individuation and regulation, at various levels, of meaning-relations.

In "Touching The World As It Is", Nagataki finds in Cartesian dualism the source of the problems of modern and contemporary philosophy on accounting for the relation between subject and world. The introduction of ontological dualism goes together with the epistemological duality of subject-object, and leads to conceive of perception as an indirect relation, mediated by internal representations, between subject and the external world. To overcome the difficulties of Cartesian epistemology, Nagataki proposes a realist interpretation of Merleau-Ponty's philosophy of perception, conceived as leading to a kind of

direct-naïve realism. In particular, against the primacy of vision in modern philosophy, Nagataki argues for a conception of perception that is based on the model of touch. In touch, the living organism enters in direct *contact* with the sensible world, a contact that happens on the surface skin. In this way, by proposing a theory of the *skin-self*, and developing a philosophy of touch, for Nagataki perception can be finally conceived as a direct contact with Being.

Simanke, in “Flesh and Matter: Merleau-Ponty’s Late Ontology as a Materialist Philosophy”, refers too to Merleau-Ponty’s philosophy, finding in it a critique to the conception of matter in modern philosophy, conceived as devoid of any sensible quality. In Simanke’s interpretation, with his *ontology of the flesh* Merleau-Ponty develops, precisely, a new philosophical conception of matter. Indeed, by developing a criticism of the duality of subject-object that is at play in modern philosophy, Merleau-Ponty proposes a monist ontology of the “wild” or “brute” Being, that thematizes the *common nature* of embodied subject and the world. Simanke, then, develops an interpretation of Merleau-Ponty’s monist ontology as involving a recovery and renewal of the concept of matter, in contrast to the “dematerialization” of matter that is at play in contemporary science and philosophy. In Simanke’s reading, the notion of flesh leads to a new conception of matter as *qualitative* and *dynamically active*, and as endowed with an intrinsic capacity for production and differentiation. In this view, matter-flesh is a dynamic system of qualitative differentiation, which, furthermore, has *life* as a possibility and potentiality that is inscribed in its nature. An outcome of this view is that, according to it, the appearance of life is a potentiality that is inherent in matter, constituting an event that is practically inevitable in the evolution of the universe.

In his paper “Feeling and Experiencing Pain. A Comparison Between Different Conceptual Models”, Vanzago develops a phenomenological investigation of a peculiar and fundamental qualitative domain: the experience of pain. He does so by contrasting the analytic power of Husserlian phenomenology to approaches that are not able to adequately account for this fundamental phenomenon. In particular, Vanzago argues that opposite approaches like the Churchlands’ eliminativism, which aims at an objectivation of experience through reduction to neural correlates, and Gadamer’s hermeneutical approach, which is based on the interpretation of the experience of pain in its meaning for the subject, share the same insufficient conception of

the body. Then, Vanzago opposes to these approaches the conception of feelings and emotions in Husserl. In particular, Vanzago claims that Husserl, with the thematization of the notion of *mood* (*Stimmung*), shows how emotional tonalities constitute a mode of manifestation of a world in totality. In Husserl's (late) account, moods constitute the emotive background of the appearance of the affective meaning of a world. In particular, according to this view a certain mood always constitutes the background of the experience of a subject, making possible a world horizon in which are placed the affective apprehensions of particular objects (the emotions). Therefore, in Husserl's account, moods constitute general transcendental structures of the emotional life that determine its level of receptivity. In light of this analysis, then, Vanzago can investigate the temporal and dynamic nature of the experience of pain, which «happens and intervenes on a previously already emotionally attuned bodily subject». Furthermore, drawing on Scheler's relational account of emotions, Vanzago can claim that in the manifestation of pain subject and object are co-implicated: «each of the two is what it is only insofar as it is related to the other». This leads Vanzago to thematize the peculiarity of the experience of pain in the fact that, within it, the subject is given to itself in an intimate and at the same time extraneous way. In the experience of pain, precisely, it is the living body that is given in its «intimate extraneousness». This leads Vanzago to argue for the importance of pain for understanding *life* and for developing an adequate phenomenology and ontology of the body: being a traumatic interruption of a previous state, the experience of pain is the event of the irruption of alterity within the subject, in a fundamental kind of *self-affection* (Henry) that precedes any other form of self-manifestation, and that «exposes from the start the subject to its own alterity».

Viik's "Understanding Meaning-Formation Processes in Everyday Life: An Approach to Cultural Phenomenology" aims at accounting, within the approach that he calls *cultural phenomenology*, for the processes of meaning-formation that take place in our everyday life. According to social constructivism, based on structuralism and post-structuralism, the categorization and the attribution of a certain meaning to experiences, but also the consequent emotional reactions (such as fear, disgust, etc.) are mediated by cultural structures. These work as transcendental structures that, at the same time, are historically and culturally localized. For Viik, however, a lacuna of the current literature on the topic is that it does not thematize the connection between cultural structures and the

processes of sense-formation that take place within the experience of an individual. By drawing on Husserl's phenomenology, then, Viik gives an account of what makes possible, at the level of individual experience, the culture-dependent meaning-formations. In particular, Viik thematizes the crucial role of the acts of sense-bestowal that, in Husserl's account of experience, bind together a complex of perceptions and give a certain meaning to the constituted object. A "grasping sense" performs the binding function that adds a certain surplus value to the object, defining *as what* it is perceived (or imagined, remembered, etc.). Viik's proposal, then, consists on further developing Husserl's account in the direction of a *cultural phenomenology*, by reading the "grasping sense" as a general meaning that comes from cultural knowledge that is internalized by the individual's consciousness. Cultural forms, then, are internalized and come at play in the experience of an individual and in her communication and interaction with others. An important point that is stressed by Viik is that the suitability of cultural forms involved in meaning-formation, which lead to grasp a complex of sensuous contents *as something*, is rarely unproblematic. Indeed, the process of meaning-formation comes from the co-operation, but also from the conflict of several poles of activity. Cultural forms are historically and culturally specific, and they can act like «transcendental meaning-formation automatons». They can have a «life of their own», conditioning the process of sense-bestowal in the experience of an individual. But, as Viik argues by stressing a fundamental continuity with Husserl's phenomenology, these processes take place within the *experience of an individual, concrete subject* (and, we may add, the acknowledgment of the dynamics through which cultural forms are constituted can lead the individuals to relate to them in a more free, creative and also more tolerant way).

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