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# CEP 2012 – Neurophenomenology

## Conference Programme

### Saturday

08:30–09:00: *Conference Registration, coffee*

09:00–10:00: Plenary Talk: Michel Bitbol

10:00–10:30: *Coffee*

10:30–12:30: Papers: Colombetti, Meacham, Valenzuela Moguillansky, Featherstone

12:30–13:30: *Lunch*

13:30–15:00: Papers: Lloyd, Marques de Jesus, Villalobos

15:00–15:10: *(Short Break)*

15:10–16:10: Papers: Beaton, Jackson

16:10–16:30: *Tea*

16:30–17:30: Plenary Talk: Natalie Depraz

18:00–19:30: Poster presentations + *Wine reception*

19:30–21:30: *Conference Gala dinner*

21:30–23:00: *Conference bar available*

### Sunday

08:30–09:00: *Coffee*

09:00–10:00: Plenary Talk: Claire Petitmengin

10:00–10:30: *Coffee*

10:30–12:30: Papers: Glynn, King, Ciaunica, O'Conaill

12:30–14:00: *Lunch*

14:00–15:30: Papers: Hawes, Tuunanen, Sofia

15:30–16:00: *Tea*

16:00–17:00: Plenary Talk: Elena Antonova

## Plenary Abstracts

### Prof. Michel Bitbol

*Director of Research, Centre National de la Recherche Scientifique (CNRS), at the Centre de Recherche en Epistémologie Appliquée (CREA), Ecole Polytechnique, Paris*

*On the Possibility and Reality of Introspection*

Even before its extensive use in psychology during the turn of the nineteenth and twentieth century, introspection was criticized for reasons of principle. Later on, after a short-lived burst of work in this field, introspection came under such intense attacks, from behaviorists as well as from its own ranks, that it (apparently) disappeared. Psychologists overtly discarded it, even though they were unable to dispense completely with it in practice. In recent years, a strong movement of renewal, and redefinition, of introspection has been witnessed. One may then raise several questions of epistemological relevance about this renewal. What changed between nineteenth century introspection and current introspection? Are the conditions for a successful study of first-person experience now fulfilled? Was the eclipse of introspection unavoidable?

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**Prof. Natalie Depraz**

*Professor, Department of Philosophy, University of Rouen; Associated researcher, CREA, Ecole Polytechnique/CNRS, Paris*

***Experiential Phenomenology of Novelty: from Attention to Surprise***

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**Prof. Claire Petitmengin**

*Professor, Department of Languages and Human Sciences, Institut Télécom, Evry, Essonne; Associated researcher, CREA, Ecole Polytechnique/CNRS, Paris*

***Interweaving neuronal and experiential microdynamics***

Using concrete examples from the therapeutic and cognitive fields, I will examine the conditions for validity of first-person reports, give some examples of experiential dynamic structures, and show different levels and modes of articulating experiential and neuronal microdynamic analysis.

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**Dr. Elena Antonova**

*Research Fellow, Institute of Psychiatry, King's College, London*

***Husserl meets Dzogchen: towards the neural correlates of 'pure consciousnesses'***

In my talk, I will first draw parallels between Husserl's method of epoché and the Dzogchen method of Buddhist meditation. I will then present the 8-fold phenomenological model of consciousness as held by Dzogchen tradition and link it up to the known structure and function of the brain. Finally, I will present preliminary data from the neuroimaging study of experienced Dzogchen practitioners and show how an even minimal amount of first-person data can have a dramatic impact on changing, understanding and interpreting third-person (fMRI) data.

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## Talks

**Dr. Michael Beaton**

*University of Sussex*

***Embodied Action and Neurophenomenology***

Standard approaches to neurophenomenology (Varela, 1996; Gallagher and Zahavi, 2009) emphasise the search for a match between the dynamics of experience, explored via the phenomenological method, and the dynamics of the brain, analysed using dynamical and complex systems theory to get a grip on the brain's temporal progress through its high dimensional phase-space. It is true that a successful science of consciousness will need to match a rigorous first-person account of experience with some rigorous third-person account. But, I will argue, the present

third-person approach remains too focussed on the brain, and not on the active body. Researchers in neurophenomenology are well aware of the importance of embodiment. But it is as if the only mathematical account available, to match up with our experiential account, is a dynamical systems analysis of brain activity. If this were true, then perhaps body and world would have to be incorporated as items which close a dynamical loop (indeed, such loops may well fundamentally alter brain dynamics). However, I will argue that already we have another (not necessarily competing) rigorous mathematical framework which is, from the outset, much better suited to match the dynamics of experience. The framework I am talking about is the sensorimotor theory of experience (Noë and O'Regan, 2001; Noë, 2004; O'Regan, 2011). Take, for instance, the perspectival nature of experience (Gallagher and Zahavi, 2009; Noë, 2004). When we abandon our habitual attitude (attending not just to things, but to how things are given to us), we find that we always perceive objects from somewhere; that we only directly encounter the facing side of objects; that the apparent shape of objects changes as we move around them; and so on. But, as Noë and O'Regan point out, there is an extremely rich and perfectly objective mathematical structure to perspectival action (to action correctly guided by our perspectival relation to the world). Using this and other examples, I will argue that the structure of experience matches directly with the detailed structure of actual, and potential, world-involving bodily actions. Noë and O'Regan have done more than any others to elucidate the third-person structure of these actions. Brain dynamics remain important, but here they have a different role: an agent's brain dynamics simply do not match the structure of its experience (in some examples, they cannot); they are just a part of the richer dynamics of the whole agent's interaction with the world.

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**Anna Ciaunica**

*University of Burgundy (France)*

***The Argument From Envatment: A Phenomenological Perspective***

The scientific turn to phenomenology leads as much to a renewed understanding of nature, life and mind (Varela 1996) as to a naturalization of phenomenology. (Roy et al. 1999) This paper aims to connect current debates surrounding embodied cognition to the conceptual Husserlian toolbox. I compare the so-called Varela-Thompson-Rosch (VTR) approach (1991) with two competing embodied cognition theories: Dynamical Systems Theory (Thelen et al. 2001) and Extended Mind Theory (Clark 1997a). Then I tackle the "Constitution" claim, i.e. the idea that the body or world is a constituent of, and not merely a causal influence on, cognition. I take as a starting point the Argument from Envatment (O'Regan & Noë, 2001; Noë 2004; Adams & Aizawa 2001; Block 2005; Aizawa 2007, 2008, 2009) In a nutshell, the argument stipulates that a brain in a vat is separated from those parts of the body and the world that proponents of "Constitution" claim to be constituents of cognition. Hence, if the envatted brain is as cognitively able as an embodied brain, Constitution must be false – the brain alone constitutes the mind. (Shapiro 2011:162) I disagree with this conclusion. I take as a case-study the Sensorimotor Theories of Perceptual Experience (O'Regan & Noë 2001) and argue that both Block (2005) and Aizawa (2007) are wrong in charging Noë with missing a distinction between constituents of visual experience and their causes. Then I examine whether the Husserlian distinction between the objective body and the lived body, i.e. between Körper and Leib, (Husserl 1973a:57) can successfully intervene in the extended mind debate. The upshot is to challenge Aizawa's (2008) point that sensorimotor activity is not, in fact, necessary for perceptual experience. The dialectic for and against Constitution will serve as the basis for a phenomenology-inspired argument against the illusion of a clear-cut demarcation between the body, brain and world.

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**Dr Giovanna Colombetti**

*Department of Sociology and Philosophy, University of Exeter*

***Towards the Integration of Affective Neuroscience and Neurophenomenology***

In my paper I will explore the possibility of applying the neurophenomenological method to the study of emotion experience, thus enriching both “mainstream” affective neuroscience and neurophenomenology itself.

Affective neuroscience, I will show, has so far largely shunned the exploration of lived experience via both first- and second-person methods. Its methodology is still primarily behaviouristic: use of self-reports is minimized; experience is rated rather than reported; self-reports are mainly used as forms of control; emotion experience, if investigated at all, features only as a static phenomenon. Yet on the other hand affective neuroscience does not seem able to do without any self-reports at all. I will then argue that rather than trying to minimize its reliance on first-person data, it ought to open up to recently proposed first- and second-person methods in the scientific study of the mind for the generation of reliable first-person data, and adopt a neurophenomenological method. Several ideas for how to apply first, second- and third-person methods (and their integration) to the study of emotion experience will be provided. Among others, I will also show how integrating affective neuroscience and neurophenomenology in the way I propose will naturally extend the latter from the brain to the rest of the organism.

### **Dr Valerie A. Featherstone, Chartered Health Psychologist**

*Research Fellow, The Institute of Human and Health Sciences, The University of Huddersfield*

#### ***Could an Interpretative Neurophenomenological Analyses of Seizure Discourse (INASD) contribute towards differential diagnosis of seizures?***

##### Background

Differentiating epileptic seizures (associated with electrical brain discharges) from non epileptic seizures (NES) (manifestations of conversion or dissociative disorder) is a serious diagnostic challenge for neurologists. Receiving mistaken diagnosis and treatments can have grave, long term consequences.

##### Aims

My thesis documented and analysed detailed seizure descriptions using Interpretative Phenomenological Analysis (IPA)– which connects first person subjective accounts, cognitive processes and physical states – with a view to identifying features which could differentiate between epilepsy and NES.

##### Participants

Four people, newly referred to neurology whose diagnosis was unclear

##### Methodology

Seven in-depth, participant led, conversations

##### Analysis

##### Interpretation

P1, 2 & 3 were diagnosed with epilepsy. P1 & P2 elucidated detailed descriptions of their cognitions, levels and contents of consciousness, correlating with their diagnoses. The descriptions of P3, lacked this depth, correlating with those of NES patients in existing research. The lack of an available discourse for him to use could explain this or, his diagnosis could be NES. P4, having similarly ‘empty’ descriptions, to date, remains undiagnosed because of missed appointments.

##### For discussion

- a) Capturing participants’ intuitive, subjective, experiences very early in the diagnostic process was invaluable because many descriptions were subsequently, significantly, ‘diluted’ . Given this, and P3’s lack of vocabulary, does this mitigate for or against training participants in neuro-phenomenological techniques in this context?
- b) Epileptic seizures are the result of unfolding elements in a dynamic system , can

be anticipated and are not sudden or unexpected. Could a pheno-dynamic analyses using videoEEG/neuroimaging/neurological correlates of cerebral activity compared with remembered subjective experiences, contribute towards the potential differentiation of the two seizure types?

### Conclusions

Given that people's subjective experiences can help locate seizure foci, there is potential for an INASD for the differential diagnosis of seizures.

**Simon Glynn**

*Professor of Philosophy, Florida Atlantic University*

### ***Neurophenomenology and the Path From Quantitative Being to Qualitative Meaning***

As the phenomenological epoché and subsequent reduction demonstrate, we never experience, and therefore have no empirical proof of the existence of, quasi-noumenal "things-in-themselves" existing outside and independently of phenomenal experiences. Therefore the distinction between physical (e.g. sensorally experienced neuronal configurations) "objects," and ideal or mental "objects" (including reflectively given mental states etc.) which we continue to draw even after the reduction, must be entirely "empirical," (in the phenomenological sense) or intentional, which is to say derived entirely upon the basis of, or from "within," phenomenal experience or consciousness itself. Indeed a moment's reflection confirms that it is in fact based upon the distinction between sensory experiences (of what we accordingly take to be material objects) and non-sensory experiences (of what we accordingly take to be ideal objects and mental states etc.).

Now while the reduction thereby demonstrates that all "objects" (material no less than ideal) are given to us entirely in "experience" or consciousness, Husserl also insists that all "experience" or consciousness is consciousness of "objects." Thus the conscious subject, or experiencer, and the "objects" of consciousness, or experienced, are co-arising intentional correlates or poles of experience, which though analytically distinguishable, are (like the two poles of a magnet, or the color and extension of an object) inseparable, as so too therefore are (as per Heideggerian hermeneutics) perception and conception, not to mention fact and value, being and meaning, and quantity and quality. Concomitantly, while the physical qua physical is, and remains, entirely quantitative, nevertheless, contra "objectivism," our experiences of it are qualitative and replete with meaning or/and significance, not to mention value. As Merleau-Ponty therefore concludes, "The most important lesson that the reduction teaches us is the impossibility of a complete reduction;" the so called ("explanatory") gap between qualitative realm of facts, and the meaning of the qualitative realm of values, etc. being not so much bridged as undermined. Explicating the above in some detail, the paper proceeds to show how, in light of this, the emergence of consciousness, with all its qualitative features, from purely quantitative neuronal structures, is, like the Structuralist account of the emergence of semantic meaning from syntactic structure, rendered much less problematic than it might otherwise be.

**Robin Hawes**

*Cardiff School of Art & Design, Cardiff Metropolitan University*

### ***Art & Neurophenomenology: Putting the Experience Before the Words***

Robin Hawes is an artist / designer and research student at Cardiff Metropolitan University studying for a practice-based PhD in Art & Visual Perception

The research presented here takes its broad theoretical focus as 'neuroaesthetics' and is developed on understanding the terms by which neuroscience appropriates art in its bid to describe the neural basis of visual consciousness. This scientifically

objective approach to art and the nature of perception is not without its critics however, and a large part of the study has drawn on the contemporary philosophical challenge to this neuroscientific orthodoxy as presented from phenomenology.

This theory-led approach for practice-based research – involving the juxtaposition of two opposing theorists, both of whom have drawn heavily upon art to support their assertions – has enabled the identification of certain kinds of ‘experiential’ art that are able stimulate very particular kinds of visual phenomena. These phenomena, over whose contingency neuroscientists and phenomenologists are in clear theoretical dispute, are perhaps best described as involving the perception of surfaces or 3-dimensional forms that are not strictly given in the visual array.

The neurobiologist Semir Zeki asserts that these ambiguous or ‘illusory’ visual experiences can provide an enticing opportunity for the brain to ‘complete’ the work of art and so help reveal the neural structures that underpin visual consciousness. The philosopher Alva Noë however, also turns to such examples to support his alternative ‘sensorimotor’ account for vision, asserting that it is our ‘embodied’ nature, rather than the interactions of neural networks alone, that enable aspects of these artworks to become ‘perceptually present’.

In this presentation Robin will talk about responding, as an artist, to this interdisciplinary terrain and aim to demonstrate how ‘experiential’ art, and more particularly his own practice-based outcomes, are able to provide a fertile location for important aspects of contemporary consciousness studies to be played out.

**Gabrielle Jackson**  
*University of Toronto*

***The Perception of Empty Space and Peripersonal Spatial Perception***

In this paper, I aim to develop a mutually constructive relationship between my phenomenological account of the perception of empty space and recent empirical work on peripersonal spatial perception. In the first part of the paper, I introduce the phenomenon of perceptual presence of absence or the aspects of perception that are apparently present to us but that do not register as sensory stimulation. I then turn to what seems to be the most paradigmatic and yet the most overlooked case of perceptual presence of absence: the perception of empty space. I argue that accounts in the literature, as exemplified by Sean Kelly and Alva Noë, cannot explain the perception of empty space. Instead, relying on the insights of Maurice Merleau-Ponty, I argue that we perceive empty space as the perceptual presence of absence of our bodily activities. In the second part of the paper, I present the model of peripersonal spatial perception. Sensory stimulation in peripersonal space activates sensorimotor pathways. Researchers, such as Alessandro Farnè and Elisabetta Làdavas, have begun to test whether peripersonal space can be expanded with tool use. I identify a possible problem with these experiments, that tool use also expands personal space, raising the question of whether there can be changes in peripersonal space while holding personal space constant, but also the question of experimental design. I attempt to answer these questions by returning to the phenomenological insights developed in the first part of the paper. I hypothesize that if we model peripersonal space as the perceptual presence of absence of our bodily activities, then the development of know-how may expand peripersonal space without also inadvertently expanding personal space. I propose an experiment similar to those already conducted, but instead of using tools, bodily activity itself becomes the variable.

**Dr. Peter R King**  
*University of Nottingham*

***The Kosslyn Model, Local Supervenience and Narrowing the Explanatory Gap***

To avoid making unwarranted assumptions regarding inter-level isomorphism

between neuronal structures and phenomenal experience (Hurley 2008), it may be useful to adopt the Kosslyn Model of vision and visual imagery (Kosslyn et al 2006, King – contracted). This is because it is an approach that defends a hybrid depictive style of visual representation, which closely relates cells in topographically organised arrays in the visual cortex, with ‘pixels’ in our visual field. Since these neuronal arrays depict in 2D (with depth and colour information coded symbolically), then there is arguably some correlation between the underlying neuronal structure and certain aspects of our overlying personal experience. I argue that investigating this relation in more detail could significantly help advance neurophilosophy in terms of visual experience. To further investigate the utility of this approach I give several arguments for preferring theories of perception that claim only narrow supervenience of vision, which suggests that these arrays (plus certain other parts of the brain) must generate visual consciousness locally. Since we have now reduced our options in terms of what must be happening and where in vision, this is perhaps a crucial step for then investigating how phenomenal visual experience is generated locally by the brain. I then suggest that this has narrowed the explanatory gap significantly and I go through several options for how this smaller remaining generative gap might be reduced further. I finish by analysing some problems associated with objectively analysing a subjective experience (Howell 2009) and I make some claims about what the evolutionary function of consciousness might be, so that we might eventually reverse engineer it. I conclude by suggesting that if my approach is plausible, then what we are left with is mainly a technological problem, which it would seem ahistorical to suggest that we cannot eventually solve (cf. Shallice 1997).

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**Dan Lloyd**

*Trinity College, Connecticut*

### ***Harmonizing Neuro- and -phenomenology***

The structural invariants of consciousness, as revealed in phenomenology, are fundamentally holistic, evident in both the synchronic manifold of sensory and non-sensory awareness (or apprehension) and in the diachronic manifold of temporality. Standard methods in cognitive neuroscience cannot accommodate their holism. Dynamical systems theorizing helps, but lacks “mid-level” formal constructs that can articulate distinctions among distinct conscious/computational structures. Here we present phenomenological and empirical evidence that mediating concepts for the science of neurophenomenology can be found in the structure of music.

Music is inherently temporal, in that the meaning of any event is inflected by a co-occurring awareness of events before and after (a fact frequently mentioned by Husserl). Music (again like consciousness) comprises many co-present elements (Husserl characterized their relations as harmony). Musicology offers a toolbox for framing dynamical structural hypotheses about listeners’ experiences of music.

Theories in cognitive musicology (e.g., those of Narmour, Jackendoff, Lerdahl, Huron, and others) can be adapted to phenomenology in general, in parallel to their application to fMRI interpretation. Properties that can be measured in both music and written/spoken language can also be tracked in brain scan data, to reveal close affinity to music at several scales of analysis (

[http://www.frontiersin.org/theoretical\\_and\\_philosophical\\_psychology/10.3389/fpsyg.2011.00063/full](http://www.frontiersin.org/theoretical_and_philosophical_psychology/10.3389/fpsyg.2011.00063/full) ). Consonance/dissonance measures distinguish healthy subjects from schizophrenia patients. Musical properties distinguish young and older brains, as well as healthy brain function in contrast to mild and moderate dementia. With suitable sonification, these differences can be made audible to audiences.

Overall, global and structural musical features of brain function seem to parallel pervasive differences in the character of experience. It may be that the cultural universals of music arise because music intuitively captures brain dynamics as they are experienced.

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**Johnny Marques de Jesus**  
*Federal University of Rio Grande do Sul (Brazil)*

***Bayesian–Enactive Dynamics Of The Multiple Drafting Operations Of Neurophenomenological Time***

This work propose a theoretical model of the neurophenomenological time in terms of an bayesian–enactive approach of the multiple drafting operations realized by the embodied–embedded brain/mind dynamical system. Since time is processed and encoded in various scales in the brain, firstly I´ll indicate hypothetically the probable localization of the neurophenomenological time within the range of these brain–time scales and how probably brain organization enables the phenomenal–time formation. My hypothesis is that, in the level of brain analysis, neurophenomenological time constitute a specific mode of global workspace dynamic system generated by specific integrational brain–time mechanisms and a specific forward emulator model. In a second moment, I´ll analyse the “internal” functional constitution of phenomenological time, and my special interest here is related to how the apprehensional interpreter–functions (that involves cognitive, kinesthetic and emotional features) of consciousness perceptually organizes and is influenced by non–conceptual sensations in the context of the retentional–impressional–protentional integrated dynamics, which intentionally produce specious present. In a third moment, I´ll neurophenomenologically reinterpret the multiple drafts model (avoiding the apparent incompatibilities present here). I´ll argue that the multiple drafts model is a dynamical system that can subsume (with modifications) the lag–fixed smoother model and the moving window emulator model in the context of a bayesian–enactive approach of the protentional functioning and a sensorimotor approach of the working memory–based functioning of retentions. I'll argue that these theoretical syntheses require a embodied–embedded biosemiosis realized by sense–making performances that incessantly produce interpretations generated in the interplay between retentional deepening/a posteriori revaluations, perceptually present sensations and bayesian protentional mapping of prepredicative proto–inductive estimations. I´ll conclude considering the basic enactive properties of that embodied–embedded biosemiosis which enables the type of sense–making proper to the neurophenomenological time. I´ll sustain that neurophenomenological time is a operational closure function of a enactive organism.

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**Dr Darian Meacham**  
*UWE, Bristol (Philosophy)*

***Trying Harder Without Trying: Cognitive Enhancement and the Neurophenomenology of Effort***

This paper takes a neurophenomenological approach to fundamental philosophical issues implicated in the debate over cognitive enhancement. It explores the possibilities for crossfertilisation between neurobiological approaches to the effects of 'cognitive enhancement' on the experiences of attention, wakefulness, effort and motivation one the one hand, and, on the other, a phenomenology of will and effort that has its origins in the work of French philosopher Maine de Biran [1]. Maine de Biran's thought has exercised an enormous influence on the way that the phenomenological tradition (especially Merleau–Ponty [2] and Ricoeur [3]) has addressed the relation between will, effort and the body. Phenomenologically, the paper critically engages with this line of thought.

Quantitative studies of the cognitive enhancing effects of certain pharmaceuticals (e.g. Modafinil) have shown little improvement in the performance of cognitive tasks in healthy subjects [4,5]. Nonetheless, anecdotal evidence reports an augmentation of motivational feeling and increased capacity for the deployment of effort [6], perhaps explaining the apparent popularity of cognitive enhancers amongst some high performing groups [7]. Neurobiologists have begun to study this motivational effect in animal models [8].

This paper argues that the phenomenology of effort can provide an important set of guideposts in the neurological study of some of the ambiguous experiences associated with cognitive enhancement: attention, wakefulness, effort, will and motivation. Conversely, a systems approach to the neurological study of cognitive enhancement may provide important cues in the phenomenological analysis of the relation between these concepts by lending some insight into how they are linked on the level of neurological processes. This is relevant in the debate over cognitive enhancement per se and in the study of these fundamental philosophical concepts.

Neither neurology nor phenomenology has adequately characterised the concepts of attention, wakefulness, effort, will or motivation, let alone their (inter)relations and relations to habit and memory. Establishing a neurophenomenological approach to these issues is thus a potentially important step forward.

**Dr. Donnchadh O'Conaill**

*Department of Philosophy, Durham University*

### ***Neurophenomenology and the Explanatory Gap***

Neurophenomenology was introduced by Francisco Varela (1996) as a methodological programme to bridge the explanatory gap through a convergence between Husserlian phenomenology and cognitive science. A number of subsequent studies have made use of similar methods (Lutz 2002; Gallagher & Sørensen 2006; Froese & Fuchs 2012). However, the methodological basis of neurophenomenology has not always been clear, a point highlighted by the criticisms raised by Tim Bayne (2004).

I shall reconsider the specific methodological contribution which neurophenomenology can make to the problem of consciousness, by considering and replying to Bayne's criticisms. This will involve clarifying the nature of the explanatory gap itself. I shall argue that the gap is not conceptual, in the sense of a lack of entailment between physical and phenomenal concepts. Nor is it properly expressed by the supposed conceivability of zombies. Rather, it is the problem of explaining what it is about certain physical states in virtue of which they give rise to phenomenal consciousness.

Central to the problem so understood is the lack of a systematic and detailed description of the nature of the explanandum, phenomenal consciousness. I shall argue that Husserlian phenomenology is particularly suited to provide the kind of description needed, by describing both the noetic and noematic aspects of conscious states. In this way, phenomenology can uncover the transcendental structures and processes by which the subject becomes aware of anything.

Second, I shall defend Varela's methodology of reciprocal constraints against Bayne's criticism. I shall argue that this method is best understood as a way of establishing and testing possible bridging principles between phenomenal and neural data, by refining correlations posited between the two. The ultimate aim of this method is to discover correlations between the global neural system and the experiencing subject as described by transcendental phenomenology.

**Gabriele Sofia**

*Sapienza Università di Roma – Université Paris 8*

### ***Neurophenomenology and Theatre Studies***

Unlike the other arts, the performing arts don't produce any physical object that remains after the creative act of the performer. The hypothetical "object" of the performing arts is the relation between performers and spectators. We can thus suggest that the efficacy of the performing art stays in its effect on the spectator's experience: «theatre is the art of the spectator» like Eugenio Barba said (1995: 37). For the same reason we can say that the performing art's scholars cannot have any

idea of the theatrical event apart their own experience of it, mentioning Varela (1996: 331). It's not for hazard if, after a first period of interexchange between theatre cultures and neurosciences, some theatre scholars shifted their interests towards neurophenomenology. They followed the idea that scientific data, essential for analyzing the spectator's experience, were not enough, but a disciplined analysis of the first-person experience, as spectator of a theatre event, was also required. For example, Prof. Marco De Marinis has recently proposed the idea of an Embodied theatology: «a theatology, in which the researcher's body as well, and his subjectivity too, are somehow involved» (De Marinis 2012: 82).

On the other side, some actor physical training and the performative practices of the XX century could be represented and studied as highly sophisticated physical techniques to discipline the subjective experience. According to this, we can notice how, from 1972 to the end of his life, Jerzi Grotowski stopped making spectacles in order to develop a research of the human being upon himself. He used the actor technique like a «vehicle» to research a different level of awareness (Grotowski 1993): a «yoga for the actor» as Grotowski's latter work has been called (Taviani 1999).

The paper proposes to show the epistemological importance of neurophenomenology and first-person methodology for theatre studies, but also to underline the potentiality that actor embodied knowledge should represent for the neurophenomenology.

**Anna-Maija Tuunanen**

*Senior Lecturer, Department of Architecture, Tampere University of Technology, Finland*

***Moments Of Resonance: Archeology Of Spatial Resonance By Practising Epoché***

What could be a link between neurophenomenology and architecture?

The background of my research is in the claim of Le Corbusier, that architecture should have a living character. It should be a living zone between us and the environment. This has led me to focus on studying the personal experience of space. What happens when we encounter architecture? When we are touched in such a way, that it opens something essential in us and for some moments we might feel a strong sense of belonging to our surroundings.

As a designer I need this knowledge of my own personal experience of spaces and feelings and intuition connected to them. I consider this knowledge as a fundamental grounds, the hidden layers, we should recognize and be open to and to be able to access. How else can we touch other people, than to get it out of our guts?

How can I access the first-person experience? With this paper I go through how I use the dynamic structure and methods of becoming aware presented by Francisco Varela and his colleagues, Natalie Depraz and Pierre Vermersch, and how I apply Varela's ideas in my PhD research, INVISIBLE EXPERIENCE.

Embodiment is the key, how body, mind and space are connected. I am practicing the three-phase- structural dynamics of becoming aware and borrowing the idea of "Portable Laboratories" from Varela. The resonating moments in spaces are presented in models and other visual means. The research is built as a dialogue between science and art. I am changing views from applying the methods from neurophenomenology and reflecting back the first person/ third person perceptions in spaces, mine and others, to the recent neurological knowledge about senses, embodied mind and consciousness.

My goal is to establish a practise, which can extend the consciousness of embodiment in spaces and finally affect our approach in architecture.

**Camila Valenzuela Moguillansky**

*Laboratoire Psychologie de la Perception CNRS UMR 8158, Université Paris Descartes, Paris, France;  
Centre de Recherche en Épistémologie Appliquée CNRS UMR 7656, École Polytechnique, Paris,  
France*

***Pain and Body Awareness: A Phenomenological Approach to Understand the Bodily Experience of Persons Suffering From Fibromyalgia***

Evidence shows a relationship between pain and disruptions in body awareness. Pain-related alterations in body awareness have been previously reported in chronic pain syndromes such as complex regional pain syndrome (CRPS), phantom limb pain and chronic lower back pain. Additionally, modifications created in body awareness by the use of different devices such as the mirror box, prisms and more recently virtual reality have been shown to modulate pain perception. The relationship between body awareness and pain has been mainly explored in pain syndromes that involve localized pain, meaning pain that is restricted to a single body part. These studies have been carried out mostly through research methodologies grounded in "the third-person perspective" that does not take lived experience into consideration. Little work has been done to explore the relationship between body perception and pain in conditions involving widespread pain, and even less work has attempted to assess the corresponding lived experience. The present work explores the impact of chronic and global pain on the bodily experience of fibromyalgia patients thanks to an interview technique inspired by phenomenological approaches. Through this technique, called "elicitation interviews", I gathered patients' description of their pain crises. The analysis of the interviews suggests that throughout a pain crisis, a basic structure repeats itself in a recursive manner over time.

The main components of this structure are the bodily sensations, their recognition, and the physical and mental attitudes associated with this recognition. These attitudes seem to have a modulating role reinforcing or appeasing the crisis. A second result is a detailed description of the alteration of the patients' body and inner space perception. This work finally shows that a phenomenological study of pain experience can highlight internal operations associated with the transformation of a bodily sensation into the experience of distress and suffering.

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**Mario Villalobos**

*School of Philosophy, Psychology and Language Sciences, The University of Edinburgh*

***Moderate Doses of Hermeneutics and Deconstruction: Educating the Phenomenology of Neurophenomenology***

Neurophenomenology constitutes one of the most important research programs associated to enactive paradigm in cognitive sciences [11, 12]. As the name explicitly indicates, phenomenology, both as a method and philosophic system, plays in it an essential role. Yet phenomenology constitutes in itself a heterogeneous philosophical corpus, with different sub-schools and circles of authors not always aligned among them. Enactivism is thus faced with the task of specifying what kind of phenomenology is the most suitable for the purposes of a neurophenomenological project [5].

While the first generation of enactive approaches (1990–2000) opted strongly for the bodily phenomenology of Merleau-Ponty [13, 6], the second (current) generation has taken as a central axis the biological phenomenology of Jonas [3, 4, 10, 14].

In my talk I argue (i) that by embracing Jonas's phenomenology enactivism has chosen the wrong kind of phenomenology, and (ii) that said choice may have disastrous effects on neurophenomenology.

I contend that Jonas' philosophy [8] represents an illegitimate anthropomorphic projection of Heideggerian existentialism [7], and that the enactive approach should rid of itself of it. I suggest that said anthropomorphism has to do, in part, with the lack of (i) a hermeneutical analysis on the particular and irremovable linguistic

constitution of human experience, and (ii) a deconstructive analysis on the alleged immediacy of lived experience.

These analyses, exemplified by the hermeneutical phenomenology of Ricoeur [9, 10] and the deconstructive reading of Derrida [1, 2], are not foreign to the phenomenological tradition but form part of its own development. Though originally focused on criticizing Husserl's eidetic phenomenology, they are, I contend, also valid and needed for Jonas' phenomenology.

The final section of my presentation is dedicated to showing how, using moderate doses of hermeneutics and deconstruction, the enactive approach can prevent Jonasian anthropomorphic distortions and keep neurophenomenological program safe.

## Poster Presentations

**Asier Arias Domínguez**

*Complutense University of Madrid, Philosophy IV Department*

### ***Neurophenomenology, First/Third-person Methodologies and Deflationism***

#### *1. First-person methodologies and the science of consciousness*

We devote the first part of this presentation to considering the following question. Assuming that trained subjects for neurophenomenological experiments can successfully elude all naïve or theory-influenced preconceptions that taint first person reports, do not we have to explain consciousness as it seems to appear for most of naïve subjects? If, for example, visual consciousness is not a plenum –as change blindness shows– but almost every naïve subject believes it is, we have to explain why they tend to make this kind of judgments. Then we need not only first-person data from phenomenologically trained subjects, but also from naïve subjects, because just first person reports from trained subjects will not give us enough insights on what most conscious subjects tend to think about the different features of their conscious experience, and one of the first and most important tasks we have to deal with in developing an inventory of what can be found in the phenomenological world is to tell its real population from the population we tend to believe that is living there. Experiments with naïve subjects are required to make these distinctions.

#### *2. The descriptive problem*

In the second part of the presentation we briefly address a problematic assumption on consciousness: the conception of consciousness as a rich plenum. Varela did not seem to completely get rid of it and, thereby, he continued speaking of “the richness of experience” (Varela et al., 1991: 19) and appealing to the need of a revolution in Western science (Varela, 1996) to study consciousness scientifically. In this context, we will argue for the inevitability of deflationists and skeptics approaches to first-person reports remarking some recent experimental data and theoretical elaborations (e. g. Schwitzgebel, 2011). Nevertheless, the nuances to which we have referred, despite being relevant, do not, by no means, invalidate the neurophenomenological methodology or its promising results (see Petitot et al., 1999).

**Katharina Bluehm**

*Freelance artist teaching on embodied perception at the Academy of Fine Arts Dresden and other institutions*

### ***Varieties of Vision***

*„[T]he pictorial mode of visual perception ... depends in the last analysis ... on conditions of attitude. The visual field is a product of the chronic habit of civilized*

*man of seeing the world as a picture.*“ (J.J. Gibson).

To contrast the phenomenology of primordial vision, I present evidence of what can be said about the experience of an online-coping creature which is (as yet) incapable of stepping out of the online-process, taking an objectifying and reflective stance. There is no clear subject-object distinction to be expected. Both the perceiver and the perceived fall into one, i.e. into the experience of existence within a certain state of desire and a prereflective sensorimotor intentional stance. Gestalt discrimination and synthesis of 3-dimensionality are in place, but no object is brought before a subject.

I ask how the use of language and pictures relates to this primordial condition. Cultural practices are taken to add to but, importantly, not to replace the phylogenetically older, highly functional practices of intelligent coping. As such,

(1) the former subtly modifies the character of the latter. The phenomenology of embodied online-coping which we know as self-conscious, concept possessing humans is argued to differ from the case described above without arriving at an act-content distinction.

(2) Language and pictures come to dominate theories of world reference. Language-use leads to reducing cognition to the propositional format. Picture use corresponds to the concept of vision in the sense of stored fully detailed visual fields. Especially under the condition of report this might influence the phenomenology.

(3) Pictures obviously arise as culturally enacted products in their own right, not as frozen vision. They are argued to induce powerful new phenomenological dynamics, but not to change general life-world vision into a pictorial mode.

In the perception of fellow creatures vision typically mediates a sensorimotor access of the other as embodied agent. Altogether, the phenomenology of vision obviously depends on the whole individual and the intersubjective and cultural practices it is embedded in and not simply on what the visual system can do.

**Sanneke de Haan**

*University of Amsterdam, Department of Psychiatry, Amsterdam Medical Center (AMC)*

***Phenomenological Effects of Deep Brain Stimulation for Obsessive-Compulsive Disorder Patients***

Nowadays, psychiatric disorders are often regarded as diseases of the brain. Although cognitive neuroscientific research has great potential for enriching our understanding of psychiatric disorders, there is a growing recognition that these findings need to be embedded in a larger, interdisciplinary picture to account for the complexity of psychiatric disorders. Treatment with Deep Brain Stimulation (DBS) seems to fit a brain-chauvinist approach to psychiatric disorders. However, phenomenological investigations may provide valuable insights to arrive at a better understanding of both the effects of treatment and the phenomenology of the disorder.

I will present some preliminary results from our research project (together with Erik Rietveld and Damiaan Denys) on the changed way of being in the world of Obsessive-Compulsive Disorder (OCD) patients who are treated with DBS. DBS is a technique in which electrodes are implanted in a patient's brain to directly stimulate a specific area with an electrical pulse. It is a relatively new technique that has so far been used primarily to treat severe movement disorders, Parkinson's disease and epilepsy – with relatively good results. Recently, DBS has been tested with patients suffering from treatment-resistant depression and obsessive compulsive disorder (OCD). Contrary to psychotherapeutic and chemical forms of treatment, the effects of DBS can be very quick and direct, which provides a unique opportunity to witness the phenomenological changes from disorder to recovery. It seems that standard

measurements of OCD are insufficient to capture the global changes in these patients. In line with a phenomenological approach to psychiatric disorders, qualitative research indicates that patients indeed seem to experience a different way of being in the world. Our aim is to make this ‘way of being in the world’ more tangible through an affordance-based model – which I will present here.

**Tom Feldges**

*University of Hull*

### ***Neurophenomenology and Pain-Research?***

Varela’s (1996) neurophenomenology proposed to link neuro-science as a third-person approach to consciousness with phenomenology as a first-person approach to overcome the difficulties of accounting for subjectivity by scientific means; the “hard problem” (Chalmers, 1996) of consciousness related research. Varela’s work has gained importance in current psychological research aiming to address the problem of subjectivity and consciousness (Raudrauf et.al, 2003). Self-report is deemed to be the gold-standard in pain-research, supposedly connecting subjective and scientific accounts (Brown et.al., 2011). This paper explores the limits of a neurophenomenological approach to pain as one of the most direct conscious experiences.

Husserl’s (1901) second concept of consciousness (Logical Investigations) allows for a direct awareness of sensations and feelings without necessitating inner perception or intentionality. This has similarity with Varela’s (1999) pre-reflective dynamic and Varela & Depraz’s (2000) embodied affective tonality. However, it is argued that Husserl’s (1913) eidetic reduction (the epoché, Ideas I.) cannot be an appropriate method to investigate direct and pre-reflective pain-experiences. The absence of any perceptive component does not allow for eidetic seeing.

A second move makes use of Husserl’s transcendental investigation. Husserl is not primarily concerned with the contents of conscious acts, but aims to reveal the conditions of the possibility of consciousness via the transcendental reductions. This section critically engages with standard-designs in pain-research (Peyron et.al., 2000). It is argued that Husserl’s transcendental reductions could reveal structures of a reflective and cognitive engagement with pain. But this on the imminent danger of having content-related results influenced by experimental designs in terms of confounding variables inherent to the experimental set-up.

Neurophenomenological research constitutes an important contribution to trying to bridge Levine’s (1983) “explanatory gap”. Nevertheless, careful consideration in relation to the methodologically inherent limitations of both the epoché and the transcendental reductions is necessary to secure credible results.

**Kate Genevieve**

*Artist in Residence, The Sackler Centre for Consciousness Science*

### ***Staging Subjectivity***

This paper will explore my practice-based research project Latent Dimensions, that seeks to explore the scientific study of subjective experience by bringing together phenomenological approaches and contemporary neuroscience research with my art practice. This research, funded by Arts Council England, was carried out as Artist in Residence at the Sackler Centre for Consciousness Science at the University of Sussex. Through a series of meetings with Dr Anil Seth and Dr Keisuke Suzuki I have created hybrid performances and installations that investigate issues around their work into conscious presence and interoceptive awareness. In this paper I will share techniques, discoveries and audience reactions gained during the production of two projects: No Place and Falling Through Myself. Both these performance pieces are designed to engage the somatic experience of participants, using visual and bio-

sensor technologies to interrogate the deeply subjective and personal feeling of one's body in its environment. No Place uses live performance and Virtual Reality goggles, applying the multi-sensory techniques used in the 'Rubber Hand illusion' to explore feelings of embodiment in relation to visual environments. Falling Through Myself investigates interoceptive awareness by incorporating Pulse-sensor technology to effect the immersive sound and visual environments that participants encounter. Both projects create structured, narrative experiences that explore participant's presence through time, whilst precisely choreographing participant's visual attention to stage illusions that disturb their bodily presence. The collaboration with the Sackler Centre for Consciousness Science is founded on the belief that sensitive movement work and rich, immersive environments created by the arts could be usefully suggestive to neuroscience's study of subjectivity, agency, embodiment and emotion – issues that have always been at the heart of dance and performance work. I will discuss this and put forward the case that if science is to meaningfully explore subtle states of Presence – or to use Alva Noë's term, the "Varieties of Presence" – narrative, performance and visual craft will be key.

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**Tobias Huber**

***Qualia, Natural Kinds, and the Introspectibility of Brain States***

Qualia, the qualitative basic features of subjective experience that are accessible in introspection, appear, from a first-person perspective, as irreducible phenomenal content that seems to prevent scientific explanation. In my presentation, however, I will argue for an empirically plausible elimination of qualia. In the first part, I will reconstruct Thomas Metzinger and Diana Raffman's argument that we cannot define introspective identity criteria for qualia because of the limitations of perceptual memory. I will then discuss two semantic eliminative strategies, each of which relies on a particular theory of reference — in the first case, the descriptive theory of reference, and in the second case, the causal-historical theory of reference. In each case, I will identify problems for a semantic eliminativist strategy about qualia. Contrary to what Edouard Machery has termed semantic eliminativism, which concludes that the referent(s) of "qualia" do not exist because some empty predicates fail to refer to the theoretical entity in question, I will defend a scientific type of qualia eliminativism by arguing that qualia is not a useful notion for the empirical sciences. I will conclude in arguing for the plausibility of Paul Churchland's hypothesis that we are in principle able to directly introspect our brain states. If Churchland's hypothesis is correct, then our introspective judgements are no more infallible than our perceptual judgments and, further, we could learn to implement the third-person perspective from a first-person perspective.

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**Laurie Petch**

*Lecturer in Educational Psychology, Centre for the Study of Children, Families and Learning Communities, University of Sheffield*

***Exploring Children's Anxiety Via Phenomenological and Existential Perspectives***

This paper will consider what, if anything, is missing from mainstream cognitive-behavioural conceptions of anxieties in children aged between four and eighteen years by describing two studies. The first study was an exploratory comparison between recent meta-analyses of interventions for childhood anxiety, both the author's own and those published by other researchers, on the one hand and a synthesis of qualitative, first person studies of this state of mind on the other. This comparison leads to the hypothesis that meta-analyses conflate first and third person perspectives in ways that elide important dimensions of anxiety, not least in failing to differentiate everyday, neurotic anxiety from existential angst. Lastly, in the second study, the hypothesis that angst is an important dimension of anxiety which is absent from mainstream anxiety self-report measures for children is tested and confirmed through factor analysis.

**Blake Thompson***Virginia Tech, Department of Philosophy****Constructive Phenomenalism and The Hard Problem***

Contemporary proposals aimed at closing the explanatory gap routinely ignore an alternative framework in which they might situate themselves. This alternative framework is what I will call “constructive phenomenalism”. Constructive phenomenalism says that all of the conceptual content relevant to the hard problem reduces to phenomenal content. I argue that the most common objection to constructive phenomenalism, given in the philosophical literature, is question begging. This objection to phenomenalism takes the form of an inference to the best explanation, for 'matter', on the basis of 'conscious experience'. My objection to the objection comes in two varieties. The first variety concerns agreement over explanandum. The physicalist is positing the existence of 'matter' in order to explain the existence of 'conscious experience'. However, constructive phenomenalism takes 'conscious experience' to be explanatorily primitive in much the same way the physicalist takes 'matter' to be primitive. In virtue of this difference in their explanatory frameworks, it appears that the physicalist will beg the question if s/he attempts to explain the existence of 'conscious experience' by any means whatsoever. At best, the physicalist and the phenomenalist will simply butt heads over what it is that needs explaining. The second problem highlights a meta-semantic worry. In order for some utterance to be an inference, the terms in the utterance must refer appropriately. In the normal cases, outside of their debate about 'matter', the phenomenalist and the physicalist will agree on assignments of referents to terms. Where they part company is in the case of “matter”. The phenomenalist's position is that “matter” is a non-sense term as it is employed by his/her interlocutor. Thus, the very presumption that the utterance presented by the physicalist is a genuine inference may beg the question.

**Lucas Wilkins, Thomas Greg Corcoran***Center for Computational Neuroscience and Robotics, University of Sussex****The Statistical Gaze: Phenomenology and Mathematical Modelling***

The shift towards the use of phenomenology in both cognitive science and neuroscience has involved the integration of a number of mathematical resources from dynamical systems theory (DST). These are taken to be foundational in the sense that they are considered to provide the framework in which one can relate scientific measurements with phenomenological experience. We review recent developments in these foundational ideas from DST (in their original domain) which we claim have implications for their use in a truly phenomenological stance in the neurosciences.

We find that many of the questions which are approached by phenomenology are poorly suited to the formalisms of phase spaces and attractors per se, despite them having received so much attention.

In statistical theory there is a long standing epistemological discourse which reflects the widespread disjunction between objective and subjective approaches to knowledge. Because of this, the statistical theories that exist now are those which have survived attacks from both fronts. As successful statistical theories have, successful neurophenomenological theory should straddle the gap between first-person and third-person.

Just as the experience of the experimenter plays some role in the design and execution of experiments so too does the experience of a modeller. We argue that the modeller re-enacts their experience of the world in their formal descriptions – and that in statistics, this re-enactment has already received significant attention. We focus in particular on the implicit or explicit use of stationarity and ergodicity, as well

as the ideas of openness and isolation.

In light of these observations, we argue from here that statistical theory, unlike DST (in its current state), is well positioned for use in neurophenomenology.

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