Accessibility and Consciousness – Program and Abstracts

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Friday, November 20

Session 1

9.15-10.30: Pascal LUDWIG & Emile THALABARD The varieties of conscious access
10.35-11.20: Michael LASSO Phenomenology lost in empirical research
-Break-
11.35-12.20: David SILVERMAN Consciousness and cognitive access: A sensorimotor approach
- Lunch -

Session 2

14.15-15.30: Uriah KRIEGEL Phenomenality as the Categorical Basis of Accessibility
15.35-16.20: Damiano La MANNA The functional role of Blockean phenomenal consciousness
-Break-
16.45-18.00: James STAIZICKER Access, Consciousness and Higher-Order Inexactness

Saturday, November 21

Session 3

9.15-10.00: Krystèle APPOURCHAUX Should we end the debate about the distinction between access and phenomenal consciousness?
10.05-11.20: Catherine TALLON-BAUDRY A neural mechanism to generate subjectivity?
-Break-
11.35-12.50: Michael GRAZIANO Consciousness and the social brain
- Lunch -

Session 4

14.30-15.45: Lionel NACCACHE How ‘Phenomenal Consciousness’ can be defined as a product of ‘Conscious Access’ based constructs
15.50-16.35: Anjana JACOB The epistemological basis of phenomenal consciousness
-Break-
17.00-18.15: Ned BLOCK Conscious, Preconscious, Unconscious
Abstracts:

Krystèle Appourchaux - Should we end the debate about the distinction between access and phenomenal consciousness?

The American philosopher Ned Block introduced in the 1990s (Block, N., 1995) a famous distinction between access and phenomenal consciousness. The notion of phenomenal consciousness seems to be the most controversial notion in the dichotomy, especially for the advocates of the global workspace theory of consciousness (Kouider, S., Sackur, J. et de Gardelle, V., 2012). However, I shall argue that the two notions are problematic in the way Ned Block framed them, for both common sense and pragmatic reasons. First, the notion of access consciousness falls short of rendering the common sense definition of consciousness. It brings confusion in that the “philosophical zombie” could be conscious in that sense. In other words, access on its own is not enough to capture the nature of conscious experience and might as well only refer to unconscious information processing. Block himself (Block, N., 2007, 2011) seems to have taken this into account when changing his original terminology into “cognitive access” on the one hand and “phenomenology” on the other, thereby avoiding the use of the term “consciousness”. However, Block’s notion of phenomenal consciousness is equally problematic in that his use of this term entails the possibility for a subject to have “phenomenal experience […] without knowing it” (Block, N. 2001), which seems contradictory with the idea that phenomenality is the “what it is like” (Nagel, T., 1974) of experience. Phenomenal consciousness therefore seems (rightly) mysterious because it misses the exact goal for which it was introduced in the first place: namely, to explain why conscious experience seems to be richer than the verbal reports describing it. I will argue that even though the distinction has been useful in pointing towards a grey area in contemporary neuroscience and experimental psychology, it is now time for a change of conceptual framework in order to facilitate the experimental study of consciousness. Using both Anthony Jack’s (1999) advocacy of first-person data and John Searle’s (Searle, J., 1990, 1992) criticism of a notion of consciousness which is limited to cognitive access, I will offer a few leads for this change of framework and back them up with recent empirical findings (Petitmengin et al, 2013) showing that, despite the limitations of consciousness put forward by Nisbett and Wilson (1977) and Johansson et al (2005), certain “pre-reflective states” – although this terminology should be revised – can actually become the object of precise verbal descriptions. Crucially, such descriptions are likely to allow for a better understanding of the phenomenology of consciousness and thereby usefully complement the current experimental paradigms used in neuroscience and cognitive psychology.

Ned Block - Conscious, Preconscious, Unconscious

A discussion of the categories of conscious, preconscious and unconscious with special reference to the “no-report” paradigm for consciousness research.
Michael Graziano - Consciousness and the social brain

Neuroscientists understand the basic principles of how the brain processes information. But how does it become subjectively aware of at least some of that information? What is consciousness? In my lab we are developing a theoretical and experimental approach to these questions that we call the Attention Schema theory. The theory begins with attention, a mechanistic method of handling data. Some signals are enhanced at the expense of other signals and are more deeply processed. In the theory, the brain does more than just use attention. It also constructs information – incomplete, schematic, sometimes even inaccurate information – about what attention is, what the consequences of attention are, and what its own attention is doing at any moment. This “attention schema” is used to help control attention, much as the “body schema,” the brain’s internal simulation of the body, is used to help control the body. This integrated set of information, the attention schema, incomplete and sometimes inaccurate as it is, forms the basis from which the brain concludes and reports that it has subjective awareness of things. The semi-magical, physically ethereal properties that we typically attribute to awareness are a product of the inaccuracies in that model. Moreover, we attribute awareness to others in a social context because it is useful to model the attentional states of others. Psychophysical evidence suggests that awareness does indeed act as the internal control model of attention, and imaging data suggests that some of the same brain regions involved in attributing awareness to others are also involved in attributing awareness to ourselves. An increasing set of studies therefore supports the Attention Schema theory.

Anjana Jacob - The epistemological basis of phenomenal consciousness

Philosophical discussions of sensory states presume an understanding of what is distinctive about sensory information. A distinction is implicitly made between the sensory information in mental states and non-sensorily encoded information they can be said to carry. A clear grasp of this distinction, I will argue, is vital but missing. It turns out to be no easy task to provide it. But once we clearly articulate the distinction, I show that we are compelled to adopt an understanding of phenomenal character that is epistemologically driven and which unifies the concepts of the sensory and the phenomenal. The distinction between phenomenal and access consciousness is then seen to be at best unhelpful, and at worst arising from a poor grasp of the fundamental distinction assumed between sensory and non-sensory information. The latter’s critical significance here should not be surprising for access consciousness appeals to the rational control of action. Such a “rational” element must be etched in terms of what is epistemologically non-sensory and it sets the backdrop against which we understand “the phenomenal”. As my paper shows, phenomenal consciousness itself then turns out to be epistemological in character.

Uriah Kriegel - Phenomenality as the Categorical Basis of Accessibility

As I see it, Ned Block's distinction between phenomenal and access consciousness originated as a powerful argument against the global workshop theory of consciousness, according to which consciousness is nothing but global accessibility. In the first part of this talk, I will argue that the argument is decisive. In the second part, however, I will argue that it does not work against a neighboring thesis, namely, that the rigidified definite description “the actual categorical basis of global accessibility” can serve as the reference-fixer of "consciousness" for the purposes of scientific theorizing about consciousness.
**Damiano La Manna - The functional role of Blockean phenomenal consciousness**

Ned Block famously distinguished between access consciousness (A-consciousness) and phenomenal consciousness (P-consciousness). A mental state is A-conscious if its content can be accessed and used in the rational control of action, reasoning, etc. A mental state is P-conscious if there is something it is like for its subject to be in it. Uriah Kriegel has suggested that A-consciousness can be construed as (part of) the functional role of P-consciousness. But Kriegel’s characterization of the latter departs from Block’s. Indeed, while Kriegel thinks that P-consciousness can be explained in representational terms, Block does not. I argue that there is a way to preserve Block’s original characterization of P-consciousness as a nonrepresentational property, while endorsing Kriegel’s proposal about its functional significance. This is by construing P-consciousness as a self-presentational property that does not harbor a distinction between awareness and experience, and by allowing it to carry representational content.

**Michael Lasso - Phenomenology lost in empirical research**

In the study of consciousness, Ned Block (among others) claims that ‘phenomenology overflows access’. This is to say that the phenomenology involved in any given stimulus is more ‘rich’ and ‘detailed’ than what our higher cognitive functions are capable of accessing. The problem is that his position in the controversy is not completely supported by the empirical research in visual perception. I focus primarily on the 2003 Landman et al. study on visual perception and memory, specifically the storage capacity of working memory and iconic memory in visual perception. I argue that Block’s interpretation of the results of this study assumes a close association with iconic memory and phenomenology, and it relies too heavily on ‘specific visual representations’ as the measurement of storage capacity of iconic memory. Not enough research has been done to directly support either of these points.

**Pascal Ludwig & Emile Thalabard - The varieties of conscious access**

**Lionel Naccache - How ‘Phenomenal Consciousness’ can be defined as a product of ‘Conscious Access’ based constructs**

**David Silverman - Consciousness and cognitive access : A sensorimotor approach**

To explain consciousness naturalistically, we must close two different explanatory gaps (Hurley and Noë, 2003). The comparative gap is the problem of accounting naturalistically for phenomenal qualities, the qualities that distinguish differing kinds of conscious experience from one another. Closing this gap requires us to explain, for example, why consciously seeing the colour red has the phenomenal quality associated with red and not blue. In addition to accounting for relatively specific types of awareness, such as seeing particular colours, closing the gap also requires us to account for the character of more general types, such as seeing (as opposed to hearing) or perceiving (as opposed to imagining). In addition to relatively specific qualities, such as the look of red or the smell of coffee, I will consider these broader categories to be types of phenomenal quality too.
The absolute gap, on the other hand, is the problem of accounting naturalistically for subjective quality, the quality of being conscious rather than non-conscious. Closing this gap requires us explain what distinguishes conscious subjects and experiences from things that altogether lack consciousness. Block puts the problem of closing the explanatory gaps like this: “All scientifically oriented accounts should agree that consciousness is in some sense based in the brain; once this fact is accepted, the problem arises of why the brain basis of this experience is the basis of this one rather than another one or none, and it becomes obvious that nothing now known gives a hint of an explanation” (Block, 2009, p. 1113).

The sensorimotor theory (O'Regan and Noë, 2001) endorses a conditional version of this claim: If consciousness is construed as being identical to neural activity, then we will find we have no way to explain it. O'Regan and Noë make this point by way of criticising accounts of the neural correlates of consciousness, observing that for whatever correlate we identify - for example, oscillations at particular frequencies - an unanswered question will remain about why the experience and the neural activity are correlated. The sensorimotor theory should also distance itself from representationalism, which claims that phenomenal and/or subjective quality can be reduced to neurally borne representational content (e.g., Tye, 2000). The problem with representationalism is that whereas it can plausibly reduce consciousness to content, it lacks a sufficiently metaphysically robust means to reduce content to the physical (see Hutto and Myin, 2013).

Instead of denying that consciousness is intelligible, however, the sensorimotor theory claims that consciousness can be intelligibly understood as a kind of skilful embodied interaction with the outside environment. The theory’s main focus, until recently, has been the comparative gap. It claims that perception is a skilful activity which draws on a mastery of sensorimotor contingencies (SMCs), the systematic ways that the sensory inputs received from a given object are prone to change in line with movements by the perceiver or object perceived. The phenomenal qualities featured within a given modality, e.g. (in the visual modality) the quality of the colour red, are accounted for by SMCs determined by characteristics of the object, while the phenomenal qualities associated in general with each sense modality, for example the phenomenal quality of vision, are accounted for by SMCs determined by the characteristics of the sense organs. The theory also appeals to sensorimotor patterns to explain the richness of visual experience, and to distinguish perceptual experience from other kinds of experience, such as interoceptive awareness of one’s own bodily states.

Consider that this aspect of the account is not enough to close the absolute gap, because there are cases where an unconscious agent can exercise sensorimotor mastery, as with a guided missile, while in other cases a conscious being may exercise sensorimotor mastery unconsciously, as with a car driver who successfully navigates obstacles, traffic lights, etc., while attending to a conversation with her passenger.

O’Regan’s (2011) version of the sensorimotor theory aims to explain phenomenal quality by identifying it with the perceiver’s cognitively accessing the sensorimotor mastery she is presently exercising. This takes place where she is poised to deploy her sensorimotor mastery in the pursuit of certain higher-level forms of thought and behaviour such as verbal report, reasoning and action-planning. A car driver who is conscious of her perceptually-guided action in this way will be poised, for example, to say things like “I need to slow down now”.

In making this suggestion, O’Regan makes use of Block’s (1995) conception of cognitive access, but claims, in contrast with Block, that cognitive access is identical to phenomenal consciousness, and therefore that explaining cognitive access suffices to account for the subjective quality of phenomenal consciousness (with SMCs explaining its phenomenal quality). O’Regan offers a tentative endorsement of the Higher Order Thought (HOT) approach which, making a version of this claim, posits that subjective quality occurs where the subject has higher-
order thoughts about her lower order mental states (e.g., Rosenthal, 1986).

I here argue that the sensorimotor theory cannot help itself either to Block’s or the HOT theorist’s conceptions of cognitive access, because all depend on the idea that perception and cognitive access are constituted by the deployment of internal representations, while the sensorimotor theory rightly observes that experience must be thought of as constituted by the exercise of sensorimotor skill, with internal representations relegated to an at most enabling role.

My suggestion is that we continue to identify subjective quality with cognitive access, but conceive of cognitive access as the exercise of a kind of reflexive (i.e. self-referential) sensorimotor skill. Insofar as this remains analogous to a HOT approach, it will be to the self-representational version (e.g. Kriegel, 2009), which claims that a mental state is conscious when it has itself as part of its content. The challenge, in offering a sensorimotor analogue, will be to explain what makes a sensorimotor ability (i) reflexive and (ii) suitably skillful, and to do so in a way that avoids appealing either to neurally-borne representational content or to a crude and implausible form of behaviorism.

To this end, I argue that the sensorimotor theory could usefully understand cognitive access to depend constitutively on language-use (or “linguaging”) as conceived by Maturana (Maturana and Varela, 1987; see also Villalobos, 2014), who presents languageing not as the deployment of internal machinery, but as an essentially embodied, temporally-extended and socially-embedded activity (although in contrast with Maturana, I will claim that consciousness is neither explanatorily primitive nor epistemically private). By construing cognitive access in this way, I intend to offer an account of subjective quality that adequately characterises what it is to be conscious while also being thoroughly naturalisable.

James Stazicker - Access, Consciousness and Higher-Order Inexactness

The notion of cognitive access to a mental state M is ambiguous between (1) cognition which represents M, and (2) cognition which takes M as computational input. I’ll argue that these forms of cognition are dissociated in experiences of phenomenal continua, in that (1) is less sensitive than (2) to the contents of conscious perceptual states. I’ll then show how this dissociation can be leveraged into arguments to the best explanation, first against ‘higher-order’ theories according to which consciousness consists in (1), and secondly against standard formulations of the ‘global broadcasting’ theory according to which consciousness consists in a species of (2). The result is prima facie reason to accept that consciousness is independent of cognitive access.

Catherine Tallon-Baudry - A neural mechanism to generate subjectivity?

Subjectivity is a central, defining feature of consciousness, but how it can be generated by the brain remains elusive. I propose that visceral organs (heart, gut) that constantly send neural information up to the central nervous system provide a potentially important source of self-specifying information that has been so far mostly overlooked. Cerebral responses to those organs would define a subject-centered referential from which first person perspective can be expressed. I will present recent findings in magneto-encephalographic data in humans measuring the neural response evoked at each heartbeat. I will show that neural responses to heartbeats in key nodes of the default-mode network are relevant for subjectivity: neural responses to heartbeats predict visual consciousness (Park et al, Nat Neurosci 2014) and encode the self-relevance of spontaneous thoughts (Babo-Rebelo et al, in prep). Finally, I will show that spontaneous neural dynamics in the default-mode network are influenced by the infra-
slow (~0.05) activity of the electrical pacemaker located in the stomach (Richter et al, in prep). Together, those results indicate that the central monitoring of the cardiac and gastric electrical pacemakers by the default-mode network may constitute a source of self-specifying signals necessary for subjectivity.
ACCESSIBILITY & CONSCIOUSNESS

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Projet ANR Metascience

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