Predictive Coding, Delusions, and Agency

Macquarie University
Sponsored by the Research Centre for Agency, Values and Ethics (CAVE)

May 15 2015

Program

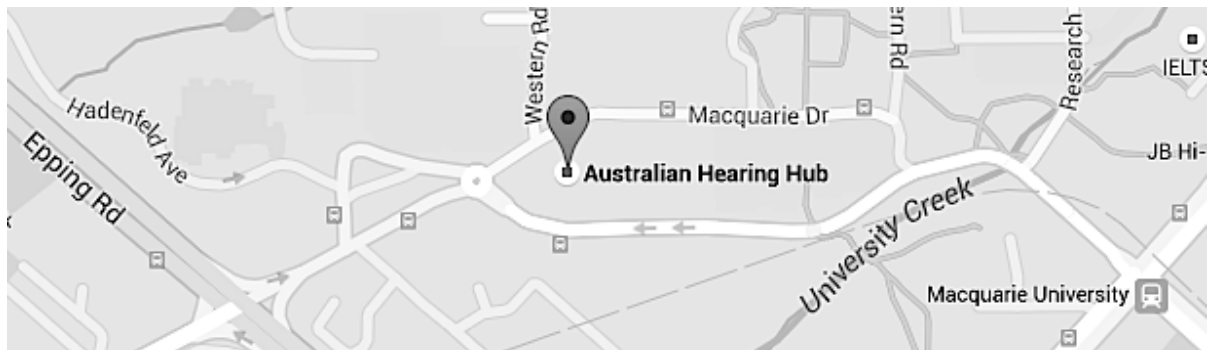**1:30-2:30pm** Jakob Hohwy "Prediction error minimization and delusion"

2:30-3:30pm Philip Gerrans "The SAD self: Predictive coding and self-representation in social neuroscience."

3:30-4pm Afternoon Tea

4pm–5pm Elizabeth Schier "The Baby and the Bathwater: Computations using prediction and the predictive coding framework"

All sessions will be held in The Australian Hearing Hub, room 3.610.
For directions to Macquarie, see `http://www.mq.edu.au/on_campus/getting_to_macquarie/`
Questions? Contact colin.klein@mq.edu.au

Titles and Abstracts

"Prediction error minimization and delusion"

Jakob Hohwy
Cognition & Philosophy Lab
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The prediction error minimization framework (PEM) is a general approach to brain function. PEMs broad explanatory reach and fine-grained conceptual set of tools makes it a good candidate for throwing new light on psychopathologies like delusions and other psychotic symptoms. The aspect of PEM that is most promising for explaining delusions is processing of volatility prediction errors in hierarchical inference. Though promising, this use of PEM fails to address several aspects of delusions. Volatility processing needs to be seen in the context of how PEM deals with action, which in turn speaks to fundamental aspects of prediction error minimization, or the free energy principle.

"The SAD self: Predictive coding and self-representation in social neuroscience. Social Anxiety Disorder (SAD) as a case study."

Philip Gerrans
Department of Philosophy
University of Adelaide

SAD exemplifies an increasingly prominent idea expressed by Moutoussis et. al. Namely "inferred representations of the self have a normative function: to predict and optimise the likely outcomes of social interaction". The SAD self is a model we construct in order to predict the affective consequences of social engagement. This is why, for example representation of the social world as hostile, intractable and uncertain (or all three) gives rise to characteristic pathologies of selfhood... "people make inferences about themselves and others to minimise interpersonal surprise enabling them to make decisions that are most consistent with their model of the inter-personal world." In what follows we argue that this idea is supported by neurocognitive evidence. In particular SAD gives us an opportunity to examine neurocognitive properties of so called "resting" or "task independent" states within a predictive coding framework. It does seen clear for example that SAD people have a different task-independent profile to that of non-SAD. How should we interpret these differences? In brief, as implementing a maladaptive model of "social coping potential".

"The Baby and the Bathwater: computations using prediction and the predictive coding framework"

Elizabeth Schier and Glenn Carruthers
Philosophy and Cognitive Science
Macquarie University

In this paper we draw a distinction between computational processes that make use of predictions and the predictive coding framework. Using the example of delusions of alien control we argue that there is good reason to think this is in part explained by a problem with processing (forming or accessing) motor predictions. But this computational processes using predictions does not in any direct way support the more radical predictive coding framework