"Causality and Free Will. Between Neurosciences and Philosophy"
Abstracts

Helen Beebee (UManchester)
To what extent can neuroscientific evidence shed light on moral and legal responsibility?

The debate about the relevance of neuroscientific evidence to the attribution of moral and legal responsibility has been going on for some considerable time now, with no end in sight. I take a philosophical 'back--to--basics' approach to the issue, arguing that it is crucial to get clear at the outset about the roles that neurological and psychological descriptions of what goes on in our heads should play in causal explanations of action. Once we appreciate that neurological and psychological explanations convey very different kinds of information and hence are not normally in competition with each other, it becomes clear (I claim) that it is psychological explanation that remains the primary tool for assessing moral and legal responsibility. While the consequence of this is not that neurological explanation never has a legitimate role to play in the attribution of responsibility, it does entail that the proper role for neurological explanation is quite tightly circumscribed.

Achim Stephan (UOsnabrück)
Emergence and Free Will

Many problems that have been discussed in the philosophy of mind have been discussed from an emergentist's perspective. But there is little consideration, if any, of the problem of free will. I will try to shed some new light on this old problem by approaching it from the perspective of emergentism, where both *diachronic* and *synchronic* aspects will play a role. Leading questions are, for example, whether or not the capacity of having a free will can be reductively explained, or whether the "emergence" of this capacity could have been predicted, in principle. To reflect on these questions we have to distinguish various explications of what the capacity of having a free will *really* is.

Andreas Jansen (Philipps-University Marburg)
Free Will – Where is the noise?

In modern neuroscience and related literature we observe a bias towards a certain type of finding – (mainly positive, hypothesis confirming, many published results are on the boarder of significance, usually at p=0.05). The raw data, however, often look very different than the presented data, essentially including much more noise. In the light of those biases, the published evidence seems to lack the power to support the strong claims it is referring to, like, among others, the famous conclusion that the free will is an illusion. The studies that reach those results should be looked at with the knowledge of the publication selectivity. The debate about the illusionary free will indicates the existence of a broader problem concerning the interpretation of data and their publication in the field of modern neuroscience.

Kim Wende (UCLouvain)
Language, Executive Function, Schizophrenia: why we need a new approach to Free Will in neuroscience

Cognition and language are unique functions of the human mind. Therefore, cognitive sciences and linguistics are particularly important for neuroscience and help to generate new hypothesis when modelling the functions of a human brain.

Together these disciplines should approach the diagnostic question, if/when the human mind/brain could be considered as free or un-free. This issue stresses the relevance of modern neuroscience in the free will debate, due to its practical implications for society and the law. We hypothesize, that *rational abstract cognition is the unique ability of the human brain that makes for a free will.* In our model, the brain accomplishes causal cognition by prediction-feedback loops, "tuning" our perceptual system to *implicitly expect causal occurrences in ongoing event observation.* If this functional interaction is not intact, the will is not able to think causal (rational). As for example in patients with Schizophrenia Psychosis, the lack of this cognitive ability could be considered a momentary un-free mind, that should not be held responsible for their actions.

In the conclusion of my talk, I suggest that free will belongs to any human brain that is able to *causal cognition.*

Anna Drozdzewska (UCLouvain)
What do we talk about when we talk about free will?

The debate on free will is one of the most exciting ones, it touches the core of who we are, and has always been in the scope of interest of philosophy, but received a burst of new energy since it attracted the attention of the scientific community, especially in neuroscience. The cooperation between philosophy and neuroscience can take us much further than ever before, and together with psychology and sociology, all the fields can greatly benefit from this collaboration, finding new ways to approach old problems.

Free will is in itself not a homogeneous problem; it includes a range of issues like moral responsibility, the limits of human freedom, mental causation, the relation between mind and body and many more. For interdisciplinary research to be possible, we need to be clear in what we consider free will. This point is especially important in experimental settings where a, usually, limited initial hypothesis on the properties of free will leads to general conclusions encompassing a large number of issues. Surprisingly, very few authors define free will in their research clearly; many of them use vague terms of "folk" or intuitive concepts, indirectly assuming that the notion is somewhat clearer than it actually is. In my presentation, I analyze different approaches to the problem of free will, both in philosophy as well as in neuroscience, showing the big differences in the initial, pre-experimental definitions. I offer my own hypothesis on how we can define free will, and analyze what consequences would my approach to free will have in experimental settings.

Olivier Sartenaer (UCLouvain)
Emergent Evolutionism, Determinism and Unpredictability

The prime objective of this paper is to map the space of the possible, consistent approaches one can adopt in order to vindicate the claim that there exist in nature thoroughly deterministic systems whose future behavior cannot be predicted, no matter how advanced or fined-tune our cognitive and technical abilities turn out to be. In particular, three approaches are identified and exemplified on the basis of a specific theoretical (scientific or philosophical) framework. They are respectively grounded in the fact that (i) it is not always possible to formulate (the right form of) a predictive algorithm [chaos theory], (ii) it is impossible to precisely specify the state of a system in order to plug this specification into a predictive algorithm [Bohmian mechanics], or (iii) it can happen that a new irreducible law appears between the moment a prediction is made and the time at which it is supposed to come true [emergent evolutionism]. While the first two strategies have received much attention during the last decades, the third one, older, is often overlooked as a consistent -- though metaphysically heavy - alternative way of vindicating the idea that determinism and unpredictability can peacefully coexist.