Causality in the Sciences of the Mind and Brain, Aarhus University 27-29th June 2016

Abstracts for Keynote Talks in Order of Appearance

Monday:

John Campbell, University of California at Berkeley
TBA

Carrie Figdor, University of Iowa
Mental Causation from the Perspective of Neuroscience

The philosophical literature on mental causation has focused on the problem of supervenient causation and the problem of the causal efficacy of content. In the first, the problem is how to ensure that a supervenient mental cause is not merely redundant. In the second, the problem is to show how what we think – the content of a thought – makes a causal difference to what we do. Jaegwon Kim's basic articulation of the problems have structured debates on these issues for decades. In this talk I will approach the problem of mental causation in the sciences from a neuroscientific perspective. My goal is to consider how advances in neuroscience may change our understanding of the causal explanations we construct that involve mental causes, and in consequence the way the problem of mental causation itself has been articulated in philosophy of mind. I will look in particular at the changing etiology of intentional action from the perspective of the neuroscience of addiction, using the addict's aberrant will in the way we generally use deficits to understand cognitive functions. The underlying neurobiology points to a much more complicated picture of what it is for us to will an action, in just the way that neurobiology has revealed a much more complicated picture of what it is for us to experience pain. I consider what a neurobiologically informed concept of the will might look like, and the effect of this construct on the traditional problems of mental causation.

Tuesday:

Holly Andersen, Simon Fraser University
A New Place for Action Explanation in Scientific Causal Explanation

I make the case that the causal exclusion problem has little if anything useful to add to a discussion of the role of mental causation in the sciences, whereas good old fashioned action explanation a la Anscombe has a much more significant role to play in developing theoretical frameworks by which to relate causal variables at different levels in cognitive neuroscience. Kim's causal exclusion problem has distant roots in a disagreement between Anscombe and Davidson, one outcome of which was Davidson's thesis of anomalous monism to which Kim responded with the causal exclusion problem. Returning to this dispute between Anscombe and Davidson opens up a different path forward in understanding the role of uniquely mental variables in the sciences. Both agree on a now-largely-rejected notion of causal explanation, namely, the deductive-nomological model, and then disagree about whether or not action explanation is of that kind. Davidson then thinks action explanation must be of the same sort as *this* kind of explanation, whereas Anscombe thinks it could not be. I re-evaluate their arguments in light of a very different model of causal explanation in the sciences, Woodward's interventionist account: what would action explanation look like if it were of *that* sort of causal explanation? By carefully keeping track of individual causal tokens and what might explain them, versus variables as tokens grouped in different ways with correspondingly different explanations, I show that there can be, in sciences such as cognitive neuroscience, legitimately testable and fully empirical causal claims involving uniquely mental variables that satisfy Anscombe's desiderata for action explanation. These variables can be treated in the

same way that any other (non-mental) variable can be treated, and provide a useful framework by which to connect causal claims made at higher and lower levels.

Michael Baumgartner, University of Geneva
The inherent empirical underdetermination of mental causation

Numerous non-reductive physicalists (e.g. Shapiro, Sober, Menzies, Campbell, Raatikainen, Andersen) have argued that the causal efficacy of the mental can be established by empirical evidence—thereby once and for all dissolving metaphysical exclusion worries that have haunted the position of non-reductive physicalism for decades. This paper aims to show that these 'evidentialist' hopes are futile. I argue that, if the mental is taken to non-reductively supervene on the physical, there cannot exist empirical evidence for its causal efficacy. While causal structures without non-reductive supervenience relations can be conclusively identified in ideal discovery circumstances, it is impossible, in principle, to generate evidence that would favor models with mental causation over models without. Ascribing causal efficacy to the mental, for the non-reductive physicalist, is a modeling choice that must be made on the basis of metaphysical background theories or pragmatic criteria guiding the selection among empirically indistinguishable models.

Jackie Sullivan, University of Western Ontario
Experimentation and causal explanation in the mind-brain sciences

Providing causal explanations of cognitive phenomena is widely thought to require input from different areas of the mind-brain sciences. That causal claims are tested in highly local and idiosyncratic experimental contexts, however, poses some challenges for integrating those claims into general causal models. One aim of this talk is analyze a historical case study as a means to clarify the nature of these challenges and their implications for integrative causal explanations. The more general aim is to illuminate some fundamental features of how causal knowledge develops and advances in the sciences of the mind-brain.

Wednesday:

William Bechtel, University of California
Rethinking Causality in Neural Mechanisms: Non-holonomic Constraints and Control Hierarchies