10.00-11.00:

**The role of early visual cortex in conscious and nonconscious visual processing: TMS studies**  
*Mika Koivisto*  
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Recent transcranial magnetic stimulation (TMS) studies on the role of early visual cortex (EVC: V1/V2/V3) in conscious and nonconscious visual processing are reviewed. The results reveal causal evidence for the necessity of EVC in visual awareness but also in nonconscious visual processing of motion, orientation, color, and shape. In addition, the results support the role of recurrent processing between EVC and V5 in motion perception, EVC and lateral occipital cortex in perception of shape and natural images, and EVC and parietal cortex in visual feature binding. However, there is no uniform evidence for a view that recurrent processing would be uniquely associated with visual awareness.

11.00-12.00:

**The new science of the soul: the biological origin of the problem of consciousness, and why neuroscience will never solve the problem**  
*Tony Jack*  
*Brain, Mind and Consciousness Lab*  
*Case Western University, Cleveland, Ohio*

The new science of the soul: the biological origin of the problem of consciousness, and why neuroscience will never solve the problem”

Why do the majority of people believe in some form of mind-body dualism? This belief, most simply expressed as the view that humans have a soul, has prevailed throughout history and culture. Yet, we are told, neuroscience will banish the soul. Is this right? I will argue for the opposite view: that work in neuroscience and psychology shows that belief in the soul is a natural and inevitable consequence of healthy brain structure. To do this, I present a new model of cognitive structure proposed to account for the problem of consciousness. This model makes a number of novel empirical predictions, for which evidence is presented. Mind-body dualism has been thought to pose a number of threats to metaphysics, science and society. I argue that none of them represents a well-founded objection. The bigger threat we face is that posed by scientific triumphalism.