

Workshop Intelligence and Abilities

Science of Intelligence & Human Abilities

22-23 March 2021

Programme (all times in CET)

22.3.21 (Monday)

14:00-15:00

Dimitri Coelho Mollo: Unifying the sciences of intelligence: abilities and representation

15:00-15:15

Break

15:15-16:15

Martin Rolfs: Delineating abilities of an active visual system

16:15-16:30

Break

16:30-17:30

Barbara Vetter: The epistemology of ability

17:30-17:45

Break

17:45-18:30

Roundtable with all workshop speakers

23.3.21 (Tuesday)

14:00-15:00

Romy Jaster: A Challenge for Ability Accounts of Practical Intelligence

15:00-15:15

Break

15:15-16:15

Ellen Fridland: Practical Intentions, Action Schemas, and Strategic Control in Skill

16:15-16:30

Break

16:30-17:30

Carlotta Pavese: Intelligence, Regress, and Novelty

17:30-17:45

Break

17:45-18:30

Roundtable with all workshop speakers

Abstracts

Unifying the Sciences of Intelligence: abilities and representation

Dr Dimitri Coelho Mollo (Science of Intelligence & Berlin School of Mind and Brain, Humboldt-Universität zu Berlin)

The notion of intelligence is relevant to several fields of research, including, among others, cognitive and comparative psychology, and artificial intelligence. However, there seems to be little agreement across these fields on what characterises intelligence, and what factors may be relevant to explaining it. I put forward a proposal for an operational characterisation of intelligence in terms of a cluster of behavioural capacities, which can play a unifying role across the sciences of intelligence. I argue that model-like representational capacities are required to satisfy that operational characterisation, thus suggesting model-based cognition as an underlying principle of intelligence. Finally, I examine some of the constraints that this principle poses on the possible cognitive architectures, biological and artificial, that can produce intelligent behaviour.

Delineating Abilities of an Active Visual System

Prof Martin Rolfs (Department of Psychology & Science of Intelligence, Humboldt-Universität zu Berlin)

The visual system is often considered to have a mind of its own, whose purpose is to provide packaged descriptions of the environment needed for other functions of the mind (decision making, emotion, language, reasoning, motor control, etc.). Indeed, vision appears to be characterized by an impeccable ability to impose structure on ambiguous scenes. Yet, what we see is the output of processes happening behind the scenes, while the processes themselves escape conscious access. As a consequence, theorists and empiricists struggle to draw a clear line between the abilities of the visual system from those of cognition. For some abilities, such as seeing depth or motion, a visual origin is undisputed, but for others the case is less straight-forward. An example of this is the long-standing debate, started by David Hume and Albert Michotte, on whether detecting causality in dynamic events is a perceptual process (much like seeing motion or color), or based on cognitive reasoning that merely builds on visual data. I will argue that making this distinction is possible by showing that the process in question (here, causality detection) exhibits core features of the active visual system (in particular, spatial and featural specificity) that are unsuspecting to result from cognitive reasoning. I will show that this general approach promises not only to delineate the abilities of the visual system from those of cognition, but also to reveal how visual processing is linked to visual behavior.

The Epistemology of Ability

Prof Barbara Vetter (Department of Philosophy & Human Abilities, Freie Universität Berlin)

Abilities have been studied in metaphysics, action theory and semantics, but there is hardly any work on the epistemology of ability. Yet arguably we must have knowledge of our own abilities to act intelligently (or, indeed, intentionally). In this talk, I take first steps towards an epistemology of ability, making use of the two central features of abilities: they are modal, and they are agentive. I argue that standard approaches in modal epistemology, contrary to initial appearances, do not account for our knowledge of abilities. I then turn to the relation between agency and ability knowledge, where we find a tight circle: agency both requires and generates ability knowledge. Getting out of the circle provides us with the beginning of a plausible epistemology of ability, or so I argue.

A Challenge for Ability Accounts of Practical Intelligence

Dr Romy Jaster (Department of Philosophy, Humboldt-Universität zu Berlin)

According to a prominent view, practical intelligence is some sort of ability, roughly, the ability to govern one's actions in the light of norms and standards. In the talk, I will argue that this view is difficult to spell out against the background of a plausible view of abilities. I'll consider three broad strands of views of abilities and show that neither provides a suitable model to accommodate the sort of ability associated with practical intelligence. Clearly, practical intelligence cannot be spelled out in terms of a modal tie between motivation and performance, as conditional analyses would suggest. A view that waives the motivation altogether, as Vetter suggests for the stimulus in the case of dispositions, looks more promising, but it is an implausible view of abilities. And a view that gets by without the motivation in some cases, as my own, cannot be adopted by the proponent of the Ability Account of Practical Intelligence because the resulting view exhibits a vicious circularity.

Practical Intentions, Action Schemas, and Strategic Control in Skill

Dr Ellen Fridland (Department of Philosophy, King's College London)

While much of skilled action happens “under the radar” it is important to acknowledge that a significant portion of skill also involves good old-fashioned thinking. For instance, there is no way to be a skilled tennis player, if you don't know that you have to, e.g., pick up the racket and swing it towards a ball. But not all personal-level knowledge about skill is of this kind. In this talk, I'll argue that skills are organized and structured by embodied, strategic, personal-level intentions that guide skill instantiations. These intentional structures, on my account, are action schemas that function both to represent and guide skilled action. Relying on the mental practice literature, I'll maintain that skilled agents uniquely possess strategic, practical, organizing intentions that guide their skilled actions in appropriate and effective ways. It follows that skilled agents are better than novices not

only at implementing the intentions that they have but also at forming the right intentions. That is, skilled agents have strategic control.

Intelligence, Regress, and Novelty

Prof Carlotta Pavese (Human Abilities & Sage School of Philosophy, Cornell University)

My talk is about the nature of intelligence. I start by emphasizing the teleological nature of intelligence, and after surveying different sorts of intelligence, I isolate the notion of agentive intelligence. I outline an intellectualist view of agentive intelligence and I explain how many other sorts of intelligent behavior can be explained by this intellectualist view. I defend the resulting theory of intelligence against a recent version of the regress challenge due to Weatherson and against Dreyfus's novelty objection.