

**Workshop 'Process-based biology: Philosophical background and Implications' with Professor John Dupré, 17-21 May 2022**

University of Tartu, Department of Philosophy, Jakobi Street 2, room 114 (Philosophicum, ground floor), Tartu, Estonia

Date	Time slot	Event type	Topic
17 May 2022	9.30-10.00	Registration	
	10.00-11.30	Seminar	Life as process
	11.30-12.00	Coffee break	
	12.00-13.30	Seminar	Evolution
	<b>16.15-17.45</b>	<b>Public Lecture</b>	<b>Life as Process</b>
18 May 2022	10.00-11.30	Seminar	Causation
	11.30-12.00	Coffee break	
	12.00-13.30	Seminar	Disorder and Process
	<b>16.15-17.45</b>	<b>Public Lecture</b>	<b>Evolving Lineages</b>
19 May 2022	10.00-11.30	Visit to the Genome Centre	
	11.30-12.00	Coffee break	
	12.00-13.30	Seminar at the Genome Centre	
	<b>16.15-17.45</b>	<b>Public Lecture</b>	<b>Human Kinds</b>
20 May 2022	10.00-11.30	Seminar	Sex and Gender
	11.30-12.00	Coffee break	
	12.00-13.30	Seminar	Process Epistemology
	<b>16.15-17.45</b>	<b>Public Lecture</b>	<b>Human Individuals</b>
	18.30	Workshop Dinner	

**Lecture abstracts**

**17 May: Life as process**

In this lecture I shall discuss the ancient divide between conceptions of the world as composed of things—ultimately unchanging atoms—and as process, in which the only constant is change. Focusing on organisms, and looking at metabolism, life cycles and symbiosis, I shall outline a range of reasons why the living world, in particular, must be seen as processual, as consisting of a hierarchy of processes at a range of spatial and temporal scales. I shall point out some of the more noteworthy consequences of this position for biology and philosophy, and briefly mention some reasons for thinking that the non-living world should also be understood as processual.

**18 May: Evolving Lineages**

In this lecture I move up a level in the living hierarchy, from organisms to the lineages that they compose. Following a famous thesis due to Michael Ghiselin and David Hull, that species are individuals, I argue that lineages are individuals, but individual *processes*. As such, we should focus not, as is often the case, on the causes of their changes, but on the causes of their stability. This perspective suggests that natural

selection should be seen much more as a source of stability and less as a creative force in evolution. It also provides a lens with which to explore debates about the so-called extended evolutionary synthesis. Some of these themes will be illustrated with attention to the special case of evolving viruses.

### **19 May: Human Kinds**

In this and the next lecture I shall turn to the relevance of a processual metaphysics to our understanding of our own species. If the human lineage is a process, how should we think about the always controversial subkinds of the species, sex, gender and race? In the case of race, geographic origin does provide some discontinuities across the lineage, but as has already been widely acknowledged, these are extremely blurred and do not map well onto traditional race categories. Gender I take to be a set of developmental outcomes largely shaped by varying cultural norms. I shall also look at the recent suggestion that sex involves two distinct sublineages within the species (and indeed within a much larger phylogenetic grouping).

### **20 May Human Individuals**

In this lecture I consider some implications for the individual of the processual status. In particular I look at two classical philosophical issues, the problem of personal identity and the problem of free will. I argue that a process ontology illuminates both of these questions. In the case of personal identity, the identity over time of a process is generally taken to be based on causal continuity rather than conserved properties, so that it can be accepted that different stages of a life may have little in common. Familiar problems of bifurcation, whether fictional or real (homozygous twins) are easily dealt with. Open-ended processes, maintaining a degree of order in an indeterministic, highly disordered world can provide a place for autonomy and agency in living systems generally, and specifically for the special capacities of human individuals envisaged by defenders of free will.

### **Seminar materials**

#### **Life as process**

Key text: John Dupré (2020). "Life as Process". *Epistemology & Philosophy of Science*, vol. 57, no. 2, pp. 96-113. [Link](#).

Supplementary: Introduction. *Everything Flows*, eds. D. J. Nicholson and John Dupré, Oxford. [Link](#).

#### **Evolution**

Key text: John Dupré (2017). "The Metaphysics of Evolution." *Interface Focus*. Published online, August 18, 2017. [Link](#).

Supplementary: "Postgenomic Darwinism", In *Processes of Life*, Oxford 2010.

## Causation

Key text: John Dupré (2021). "Causally powerful processes." *Synthese*, 199(3), 10667-10683. [Link](#).

Supplementary: John Dupré (2013). I—John Dupré: "Living Causes." In *Aristotelian society supplementary volume* (Vol. 87, pp. 19-37). [Link](#).

## Disorder and Process

Key text: John Dupré (2018). "Processes, Organisms, Kinds and the Inevitability of Pluralism." In *Individuation, Process, and Scientific Practices*, eds. Otavio Bueno, Ruey-Lin Chen and Melinda Fagan, Oxford University Press, pp. 21-39. [Link](#).

Supplementary: "Metaphysical Disorder and Scientific Disunity", in *The Disunity of Science*, eds. D. Stump and P. Galison. [Link](#).

## Sex and gender

Key text: John Dupré (2021). "Gender as Process". In *Why Gender?* edited by Jude Browne, Cambridge University Press, pp. 57-77. [Link](#).

Supplementary: C. Fine, J. Dupré, J., & D. Joel (2017). "Sex-linked behavior: evolution, stability, and variability." *Trends in Cognitive Sciences*, 21(9), 666-673. [Link](#).

## Process epistemology

Key text: John Dupré and Sabina Leonelli (2022). "Process epistemology in the COVID-19 Era: Rethinking the research process to avoid dangerous forms of reification." *European Journal for the Philosophy of Science*. [Link](#).

Supplementary: Dupré, J., & Guttinger, S. (2016). "Viruses as living processes." *Studies in History and Philosophy of Science Part C: Studies in History and Philosophy of Biological and Biomedical Sciences*, 59, 109-116. [Link](#).