

## Second joint MCMP–Hannover Workshop “Philosophy of Science”

This workshop which is jointly organized by the Munich Center for Mathematical Philosophy and the chair for theoretical philosophy at LU Hanover will cover a wide range of topics related to the philosophy of science – including the epistemology and ethics of science, philosophy of physics, causality and decision theory.

**Date:** 28<sup>th</sup> and 29<sup>th</sup> of June 2019 (Friday + Saturday)

**Venue:** Leibniz Universität Hannover, Institut für Philosophie,  
Im Moore 21, Room B410 (5<sup>th</sup> Floor)

**Speakers:**

Anke Bütner	(LU Hanover)
Enno Fischer	(LU Hanover)
Sebastian Krug	(LU Hanover)
Reuben Stern	(LU Hanover)
Shanna Slank	(U Wisconsin-Madison)
Joe Dewhurst	(LMU Munich)
John Dougherty	(LMU Munich)
Kim Naumann	(LMU Munich)
Alexander Reutlinger	(LMU Munich)
Dunja Šešelja	(LMU Munich)

**Length of talks:** 30 minutes talk + 15 minutes discussion + 5 minutes buffer

### Preliminary schedule

Friday (June 28)

13:30-14:00	<i>Registration</i>
14:00-14:50	Talk: <b>Shanna Slank</b> and <b>Reuben Stern</b>
14:50-15:40	Talk: <b>Sebastian Krug</b>
15:40-16:10	<i>Coffee Break</i>
16:10-17:00	Talk: <b>Dunja Šešelja</b>
17:00-17:50	Talk: <b>Joe Dewhurst</b>
17:50-18:40	Talk: <b>John Dougherty</b>
19:30	<i>Dinner</i>

Saturday (June 29)

09:00-09:50	Talk: <b>Anke Bütner</b>
09:50-10:20	<i>Coffee Break</i>
10:20-11:10	Talk: <b>Enno Fischer</b>
11:10-12:00	Talk: <b>Alexander Reutlinger</b>
12:00-13:20	<i>Lunch Break</i>
13:20-14:10	Talk: <b>Kim Naumann</b>

## Titels and Abstracts of Talks

### **Shanna Slank and Reuben Stern: “Transformative Choice and Indeterminate Values”**

Building on Collins (2015), we develop a decision-theoretic framework that uses sets of utility functions to model the way in which agents are neutral about how much they value possible outcomes when making epistemically transformative choices. We then use this framework to offer a rigorous and principled account of the circumstances in which the transformative aspects of choice threaten the ability to choose rationally and authentically. One upshot is that, contra L. A. Paul, there is no special problem for making some "life-making" transformative choices rationally and authentically.

### **Sebastian Krug: “Imprecise probabilities, epistemic freedom and dominance reasoning in decision theory”**

Several authors (e.g. Levi, Spohn, Price and Liu) have argued that an agent in the process of deciding between several possible actions, can not have beliefs about which of the various possible options she will choose. Stern (2018) has suggested to model this condition on deliberating agents – sometimes called *epistemic freedom* – in the framework of imprecise probabilities, by requiring beliefs about options to be maximally imprecise. I will present some mathematical observations which seem relevant to this approach and the question whether (and under which circumstances) epistemic freedom, understood in this way, can justify *dominance reasoning* in decision problems like Newcombs Problem, and thereby justify two-boxing.

### **Dunja Šešelja: tba**

### **Joe Dewhurst: “Causal emergence and real patterns in complex systems”**

Eric Hoel has recently proposed an interpretation of causal emergence in complex systems based on an information theoretic framework. I will review his proposal and argue that while it establishes only a weak (epistemic) form of emergence, this might nonetheless be sufficient for something like causal emergence in the special sciences. This is because 'causal' explanations in these sciences often take place at a more abstract level, where tracking real patterns is more important than describing underlying microstructural interactions. However, it will still turn out that there is no such thing as causal emergence in a strong (ontological) sense, because the existence of these real patterns depends on an underlying physical structure that is (at least in principle) fully explanatory.

### **John Dougherty: “Problems, puzzles, and paradoxes in particle physics”**

In the second half of the twentieth century, theorists in high-energy physics regularly spoke in terms of "problems", "puzzles", and "paradoxes". So, for example, the current "strong CP problem" arises from the generally-accepted solution to the "axial U(1) problem", and this solution involves the solution of the "Sutherland-Veltman paradox". In this talk I argue that we should distinguish problems with extant high-energy theory from problems that are meant to suggest novel physics. Problems of the first kind – for example, the Sutherland-Veltman paradox or the axial U(1) problem – are questions of reconciling existing theory with observation, and have a good track record of being solved in informative ways. Problems of the second kind, like the strong CP problem, are significantly more open. I

appeal to this distinction to raise a concern for Richard Dawid's account of non-empirical theory confirmation, which involves an induction on successful solutions of problems and puzzles like this in the history of high-energy theory.

### **Anke Bütner: “Diagnostic Overshadowing in Psychiatric-Somatic Comorbidity: Epistemic Injustice or Bad Luck?”**

Patients with mental illnesses have higher prevalence and mortality rates with regard to common somatic diseases and causes of death, such as cardio-vascular problems or cancer. One factor contributing to this excess morbidity and mortality is the sub-standard level of physical healthcare offered to the mentally ill. In particular, they are often subject to diagnostic overshadowing: a tendency to attribute physical symptoms to a pre-existing diagnosis of mental illness. I argue that diagnostic overshadowing constitutes two kinds of testimonial injustice. For one, there are classic cases of agential, transactional testimonial injustice resulting from prejudices against the mental ill. In addition, there are cases of non-agential, structural testimonial injustice resulting from features of the health care system. To overcome diagnostic overshadowing, remedies on the individual as well as structural and organizational level are necessary, culminating in a need for a new culture of “shared diagnosis”.

**Enno Fischer: tba**

### **Alexander Reutlinger: “What is Epistemically Wrong with Research Affected by Sponsorship Bias? The Evidential Account”**

Biased research occurs frequently in the sciences. In this paper, I will focus on one particular kind of biased research: research that is subject to sponsorship bias. I will address the following epistemological question: what precisely is epistemically wrong (that is, unjustified) with biased research of this kind? I will defend the evidential account of epistemic wrongness: that is, research affected by sponsorship bias is epistemically wrong if and only if the researchers in question make false claims about the (degree of) evidential support of some hypothesis H by data E. I will argue that the evidential account captures the epistemic wrongness of three paradigmatic types of sponsorship bias.

### **Kim Naumann: “Science Scepticism and the role of independent experts”**

Science Scepticism has become a challenging problem for science and society: Non-experts respectively laypeople who expect scientific consensus as a basis for social and political decisions are manipulated by sceptics who strategically create doubt to hinder any formation of a scientific consensus. Therefore, it is necessary to find a criterion for scientific knowledge that is independent of the formation of a consensus. Otherwise important political decisions are delayed or even hindered. In this talk, I introduce such an alternative approach based on the concept of independent expertise.