

Plenary Talks Abstracts

Oliver R. Scholz & Ansgar Seide, both University of Münster, Germany, *Inductive Metaphysics: Historical Reconstruction and Defence against its Critics*

In the first part of our talk, we reconstruct the meta-metaphysical programme of Inductive Metaphysics (IM) from the writings of Gustav Theodor Fechner, Wilhelm Wundt, Eduard von Hartmann, Oswald Külpe and Erich Becher. In the second part, we defend this programme against pertinent critique from both the Logical Positivists of the Vienna Circle (Rudolf Carnap, Moritz Schlick, Philipp Frank) and the Logical Empiricists of the Berlin Group (Hans Reichenbach, Paul Oppenheim, Walter Dubislav). Finally, we compare the programme of IM with recent programmes of “naturalistic metaphysics” or “scientific [better: science-driven] metaphysics”.

Matthias Neuber, University of Mainz, Germany, *Inductive Metaphysics in the Context of Two Movements: Critical Realism and Logical Empiricism*

At first glance, critical realism and logical empiricism seem to be opposed in their assessment of inductive metaphysics. While critical realists such as Wilhelm Wundt, Oswald Külpe or Erich Becher quite enthusiastically embraced and advanced the idea of an inductive, science-based account of metaphysics, logical empiricists such as Rudolf Carnap, Otto Neurath or Moritz Schlick either ignored or explicitly rejected this very idea. However, there was a *scientific realist faction* within the logical empiricist movement that came quite close to the idea of an inductive metaphysics as advocated by the critical realists. In this context, the views of Hans Reichenbach, Viktor Kraft, and Eino Kaila are of particular interest. Reichenbach’s endorsement of ‘inference to the best explanation,’ Kraft’s affirmative interpretation of what he called ‘constructive hypotheses,’ and Kaila’s comprehensive ‘invariantism’ can all be read as contributing to the *realization* of the idea of an inductive metaphysics. In the talk, I will provide the relevant arguments for this claim and, in addition, make some references to related views of the American critical realist Roy Wood Sellars.

Katherine Brading, Duke University, USA, *Principles and Evidence in Metaphysical Theorizing*

The 18th century is rich in debates lying at the intersection of metaphysics and physics, most famously over space, time, motion and force. Less well-known is the struggle for an account of bodies. At the beginning of the century, philosophers were able to tell us what bodies are: parts of matter that are extended, impenetrable, and mobile, and which move around according to certain laws. There were some details to be sorted out, and some puzzles to resolve (such as whether gravity belongs to the essence of bodies), but there was widespread agreement on the general picture. By the end of the 18th century, nobody knew what bodies are, and nobody expected philosophers to be able to solve this. What happened, why, and what should we learn? What does it mean for philosophers when in order to address *our* questions (such as “What is a body”) we are reliant on theorizing from *outside* philosophy (such as from physics)? In this talk, I will be particularly interested in the roles of principles (by which we constrain theorizing) and evidence (by which we justify our claims).

Andreas Hüttemann, University of Cologne & **Gerhard Schurz**, University of Düsseldorf,
Inductive Metaphysics in contemporary philosophy

In the first part (Andreas Hüttemann) the role and embeddedness of inductive metaphysics (IM) in contemporary philosophy, in comparison to competing metaphysical programmes are discussed, including the relation to conceptual a priori metaphysics, as well as to other a posteriori programmes in metaphysics. The basic methodological principles of IM, as understood in our research group are explained, consisting of (1) employment of inductive and abductive methods and (2) making use of empirical sources.

In the second part (Gerhard Schurz) important philosophical challenges for the methodology of inductive metaphysics are debated. These challenges stem from the highly theoretical and transdisciplinary nature of metaphysical principles and the corresponding difficulty of justifying abductive inferences from empirical knowledge to these principles. Two rationality criteria proposed for these abductive inferences are (i) the unification of many mutually independent empirical facts or laws and (ii) the independently testability of metaphysical theories by entailing use-novel empirical consequences.

Stephen Biggs, Iowa State University, USA, *Abduction as the Ultimate Arbiter of Modal Disputes*

Investigations of the epistemology of modality have centered on what Mallozzi et al. (2021) call the “Access Question”, which asks, in their words, “How can we come to know, or be justified in believing, what is necessary, possible, contingent, essential, and accidental?” This focus is understandable because without one or more answers to the Access Question the very possibility of modal knowledge remains elusive. Nonetheless, the time has come for a shift in focus. For, there are now several answers to the Access Question that plausibly adequately account for at least some (if not all) modal knowledge. Accordingly, modal epistemologists are now in position to turn attention to a different, if related, question—one reflecting that procedures offered as answers to the Access Question sometimes disagree about whether a given modal claim is true. Such cases of disagreement indicate that we need a means of resolving disputes over the truth of modal claims; we need an answer to what we call the (modal) “Arbiter Question”, which asks, “What is the ultimate arbiter of modal dispute?” In this talk, we will argue that the best answer to the Arbiter Question is abduction, i.e., inference to the best explanation. We start by clarifying what is required by way of an adequate answer to the Access Question and then confirming that various existing answers are adequate in the operative sense. We then identify two modal claims about which procedures associated with adequate answers to the Access Question disagree, thus motivating attention to the Arbiter Question. We then clarify what is required by way of an adequate answer to the Arbiter Question before showing that several adequate answers to the Access Question either entail or are compatible with abduction's being the ultimate arbiter of modal disputes. We then provide several reasons for taking abduction to be superior to other candidate answers to the Arbiter Question. Finally, we argue that taking abduction to be the ultimate arbiter of modal disputes doesn't hinge on any specific modal ontology—in particular, doesn't hinge on whether one endorses a broadly realist or anti-realist modal ontology—or on whether one treats modal theorizing as descriptive or prescriptive. We close by briefly noting that our discussion generalizes to the epistemology of metaphysics and plausibly of many other domains.

Jenann Ismael, Johns Hopkins University, USA, *Laplace meets Godel: how self-reference foils prediction*

There's an armchair metaphysics version of what determinism entails illustrated by the familiar image that Laplace gave us of a demon that can predict everything that will happen in the world from knowledge of initial conditions. There's an inductive metaphysics version that treats this as a physical problem and asks: is it even in principle possible to construct a Laplacian demon in a classical setting? The lessons are very different (and much more interesting) than the armchair version. I'll argue that there are both specific and general reasons that there could never be a Laplacian demon: not for classical mechanics, not for any theory.

Naomi Thompson, University of Southampton, UK, *Joint Carving, Realism, and Reality*

Some metaphysically interesting notions fall outside of the realm of the mind-independent, and as such will erroneously be considered unworthy of our attention by any view that thinks only of realist metaphysics as substantive (Taylor, forthcoming). In this paper I argue for two ways of conceiving of substantive metaphysics that includes some mind-dependent phenomena. The first proposal I consider accepts something like the realist notion of 'joint-carving' - that there are better and worse ways to carve things up - but denies that the 'joints' are entirely mind-independent. Some ways of thinking and talking are genuinely better than others, but part of what makes them better is that they are better for us, given some or all of factors including our particular interests, conceptual schemes, patterns of concern, and explanatory aims. Such a view has two immediate advantages over traditional realism: it allows that debates in e.g. social metaphysics can be substantive when they are cast in joint-carving terms, and it renders the problematic epistemology of the realist notion of joint-carving far more tractable. The second proposal is to think of 'reality' as a system of explanatory dependence that includes some suitably embedded mind-dependent phenomena, and thus to deny (if we continue to characterise realism in terms of mind-independence) that we should be realists about all of 'reality'.

Igor Douven, IHPST, Pantheon-Sorbonne University, France, *The learnability of natural concepts*

According to a recent proposal, natural concepts are represented by the cells of an optimally designed similarity space. In this proposal, optimality is a matter of satisfying principles that a good engineer would follow if tasked with designing a conceptual system for creatures with our perceptual and cognitive capacities. One of these principles is that natural concepts should be easily learnable. While there is evidence for various parts of the optimal design proposal, there is so far no evidence directly linking naturalness to learning. I look at various computational models of learning known from artificial intelligence and machine learning and apply them to run simulations in perceptual color space. The results from the simulations will be seen to indicate that naturalness indeed facilitates learning.

Anjan Chakravartty, University of Miami, USA, *Scientific Kinds: Inductive Metaphysics Twice Over*

Ancient and medieval traditions of theorizing about natural kinds, or divisions in nature, sit uncomfortably with modern scientific practices of classification. Arguably, updating the former in light of the latter produces a philosophical understanding of scientific kinds that is exemplary of inductive metaphysics twice over. For one thing, considerations of inductive inference are central to scientific classification. For another, theorizing about the ontology of the resulting categories involves reflection typical of ‘naturalized’ or ‘scientific’ metaphysics. Whether these two, presumptively inductive dimensions of thinking about kinds each amounts to ‘inductive metaphysics’ may be contentious, depending on the precise meaning of the term. In this talk, I consider both dimensions.

Section Talks Abstracts

Section 1. Methodology of inductive metaphysics

Wednesday 9 August 2023

10:40-11:30 **Katie Morrow**, Bielefeld University, Germany, *An Underdetermination Problem for Inference to the Best Explanation in the Metaphysics of Science*

I develop an underdetermination problem for the metaphysics of scientific concepts. The problem is that multiple metaphysical systems (particularly, naturalism and constructivism) will always be compatible with all scientific evidence; this has practical implications for metaphysical explanatory aims. This means that attempted inference to the best explanation (IBE) will fail to single out a best theory. I consider whether theoretic virtues can act as a tie-breaker, but argue that appeal to theoretic virtues in the context of metaphysics of science is likely to be question-begging. This represents a serious problem for abductive metaphysics which I hope can be overcome.

11:30-12:20 **Mousa Mohammadian**, Ahmedabad University, India, *Theoretical Virtue in Science and Metaphysics: On Methodology of Theory Choice in Metaphysics*

Many scientists and philosophers of science hold that theoretical virtues – e.g., internal consistency, external consistency, empirical fit, accuracy, simplicity, explanatory power, predictive power, unification, and broad scope – play a crucial role in theory choice in science. But can theoretical virtues of *scientific* theories be used, justifiably and fruitfully, in *metaphysical* theory choice? In this paper, we study the conditions of truth-conduciveness of theoretical virtues in science and the possibility of satisfying these conditions in metaphysics. We argue for a qualified positive answer to the abovementioned question and based on it we offer a methodological proposal for a scientifically informed metaphysics.

15:40-16:30 **Filippo Mancini**, University of Bonn, Germany, *On justifying and explaining abduction*

Priest (2021) discusses a novel epistemological issue concerning anti-exceptionalism about logic (AEL). One crucial claim of AEL is that the correct logical theory has to be determined by abduction; and arguably, this is true both for deductive and non-deductive logics, abduction included. However, an abductive justification for a theory of abduction begs the question and, consequently, fails. Nonetheless, Priest argues that if in this context we use abductive arguments in an explanatory – opposed to a suasive – way, circularity does not pose any problem; instead, some other issues emerge and need to be addressed. In this paper I will further examine such a situation.

16:30-17:20 **Filippo Ferrari**, University of Bonn, Germany, *Logic is minimally intrinsically normative*

Three are the aims of this talk. The first is taxonomical: by relying on some work done by MacFarlane (2004), Steiberger (2018), and Ferrari (2021), I will distinguish between several questions we may ask about the normativity of logic in relation to reasoning. I will then focus primarily on what I call the source question, namely the question about what's the ultimate source of the normative function that logic is taken to exert on reasoning. With this in hand, I'll turn to my second aim which will be to discuss and critically assess some extrinsicist replies to the source question according to which the source of the normative function that logic exerts on reasoning is wholly external to the nature of logic (and the relation of logical consequence). Last, as my third aim, I will briefly and tentatively advance an intrinsicist reply to the source question. I will argue that there is a distinctive albeit minimal kind of logical normativity which is ultimately sourced in the relation of logical consequence itself.

Thursday 10 August 2023

10:40-11:30 **Cruz Davis**, University of Massachusetts Amherst, USA, *Getting Real About Metaphysical Inference*

In this paper, I propose a novel approach to doing metaphysics that places investigation into our inductive methodology (as opposed to discerning the truthmakers for the content of our best theories) as front and center in metaphysical investigation. I argue that, while this approach has gone relatively unnoticed, it's thrust upon us by a proper naturalist rejection of apriorism. Moreover, I argue this approach has the benefit of discerning a common ground between what makes scientific knowledge and metaphysical knowledge possible while also being in a position to reject recent worries about the rationality of anti-metaphysical alternatives.

11:30-12:20 **Christian J. Feldbacher-Escamilla**, University of Cologne, Germany, *Abductive Knowledge vs. Abductive Preference*

In Alexander Bird's "Knowing Science" (2022) knowledge plays a dominant role in assessing progress of science. However, one might wonder how we can make any significant step forward in science given such a high epistemic standard. Bird's answer is twofold: First, regarding the inferential basis, he weakens the constraints for our evidence by arguing for the claim that all our knowledge is evidence ($E=K$). In this way, we can use whatever we know as evidence for or against our hypotheses and so we are not confined (contra the version of empiricism he criticises) to directly trace back everything to experience and observation. Second, he argues for using an inference method that aims at being perfectly located at the intersection of ampliative and knowledge-preserving inferences. It is his form of abduction, namely inference to the only explanation (IOE) or Holmesian inference that seems to perfectly fill this spot. In this contribution, we will argue that Bird's justification of IOE is incomplete. In order to complete his account of knowing science, he either has to buy in some form of evidential uniqueness thesis, or he has to agree to be pushed more towards rational preference than knowledge. Since the former is implausible and the latter counters his programme of (meta)knowing science, we argue that this poses a serious dilemma of his account.

15:40-16:30 **Matthias Rolffs**, University of Bern, Germany, *Conceptual Re-Engineering for Inductive Metaphysicists*

Conceptual re-engineering is the development of new concepts that are both similar to corresponding old concepts and more useful for certain purposes. Inductive metaphysics is an approach to metaphysical questions that takes empirical information seriously and is methodologically continuous with the sciences, while at the same time allowing for a priori elements of metaphysical theory-building. Taking conceptual re-engineering in the philosophy of causation as my main example, I will argue that conceptual re-engineering and inductive metaphysics are a good fit: Acknowledging conceptual re-engineering as an important element of the inductive metaphysicist's toolbox allows us (i) to strengthen the methodological continuity with the sciences and (ii) to locate the relevance of empirical as well as a priori considerations for certain metaphysical questions.

16:30-17:20 **Markus Schrenk**, University of Düsseldorf, Germany, *Data, Curve-Fitting, and Model-Building in Metaphysics*

Curve-fitting and model-building are fruitful methods within the empirical sciences. Abductive metaphysicians claim that they can and should play a central role in metaphysics, too. However, within the empirical sciences, these methods rely on data and evidence. If they shall play a role in metaphysics what, then, is the analogue of data/evidence for metaphysical curve-fitting and model-building? Focussing on causation, I suggest to take the extension (and anti-extension) of our pre-theoretic concept of causation as the data our theory/model of causation shall capture. I discuss which kind of outliers could be ignored and how error fragility can be avoided.

Friday 11 August 2023

10:40-11:30 **Chalas Kévin**, University of Louvain, Belgium, *Inferences from scientific theories and the threat of empirical incoherence: defending a metaphysics for scientific practice*

“Inductive Metaphysics” allows using not only scientific theories but also scientific practices to ground metaphysical claims, which is praiseworthy. However, problems of “empirical incoherence” in the philosophy of physics literature show that, sometimes, there happen to be conflicts between metaphysical assertions claimed to be the best explanation of a theory and others taken to be the best explanation of the practice supporting the theory. To preserve Inductive Metaphysics from contradiction, I propose to defend a set of guidelines to diffuse these tensions.

11:30-12:20 **Ole Höffken**, University of Heidelberg, Germany, *Virtue-Centric Abduction*

I take as point of departure the ‘plentitude problem’ and the resultant ‘inevitability of conflicting verdicts’ which have been formulated by Frank Cabrera in relation to the concept(s) of explanation presupposed in abduction/Inference to the Best Explanation.

To answer these challenges, Cabrera proposes the ‘virtue-centric conception of explanation’ (VCC). I propose a revised form of the VCC, based on Paul Thagard’s model of ‘coherence-based inference’, which offers an elaborate account of the theoretical virtues. While Thagard takes explanatory ‘coherence-producing’ relations as primitive, I propose an explanation-

independent account of abduction by taking relations of entailment (sufficiently restricted) or conditional probability as coherence-producing.

15:40-16:30 **James Fraser**, University of Wuppertal, Germany, *Effective Metaphysics*

This paper discusses a problem with connecting metaphysical theorising to empirical science. Where much of contemporary metaphysics focuses on questions about the fundamental nature of reality, the empirically supported claims of current scientific theories concern the non-fundamental. After developing this problem I go on to suggest a potential way out. One might adopt a methodology of “Effective Metaphysics”, articulating the non-fundamental content of empirically supported scientific theories while remaining neutral on questions about the fundamental.

16:30-17:20 **Donnchadh O’Conaill**, University of Fribourg, Switzerland, *The Limits of Inductive Metaphysics*

Inductive metaphysics connects metaphysical thinking with scientific work, and offers the possibility of overcoming long-standing metaphysical problems. However, this approach has important limitations; specifically, inductive metaphysical arguments often rest on controversial premises which limit their force. I shall first illustrate these limitations, using as a case study Matthew Tugby's inductive argument for realism about properties. I shall then propose a diagnosis, explaining why inductive metaphysics, even though it does improve on more traditional a priori metaphysical methods, is limited in these ways.

Section 2. Metaphysics and Science

Wednesday 9 August 2023

10:40-11:30 **Paul Hoyningen-Huene**, University of Hannover, Germany & University of Zürich, Switzerland, *Thomas Kuhn as an inductive metaphysician*

I claim in this talk that in all his life, Thomas Kuhn’s philosophical ambitions fundamentally concerned inductive metaphysics. The relevant empirical evidence is our knowledge of the historical development of the basic natural sciences, inductively generalized by Kuhn to a “schematic description of scientific development.” What is an appropriate world concept as the subject of science that emerges (by abduction) from this developmental scheme? Kuhn claimed that “the view towards which I grope would be Kantian [...] with categories of the mind which could change with time.”

11:30-12:20 **Lorenzo Spagnesi**, University of Trier, Germany, *Idealized Models in Science and Metaphysics: A Kantian approach*

Idealized models play an important role in science (e.g. Godfrey-Smith 2009) and in metaphysics (e.g. Paul 2012). Since idealized models are unrealistic representations, it is an open question whether they can be legitimately employed to understand the world. In this paper,

I defend the Kant-inspired thesis that the regulative ideal of systematicity is what justifies the employment and objectivity of models. More specifically, idealized models possess genuine epistemic value if they are constructed and assessed to provide a systematic account of the world. I conclude by discussing the prospects of a Kantian approach to inductive reasoning in science and metaphysics.

15:40-16:30 **Brigitte Falkenburg**, University of Dortmund, Germany, *Analogical and Inductive Reasoning in the "Critique of Pure Reason"*

Kant's analogical reasoning in the first "Critique" traces back to his pre-critical analogy between the inductive methods of metaphysics and Newtonian physics. In the Preface B of the first "Critique", Kant supports his "Experiment of Reason" in defence of transcendental idealism with analogies reminiscent of this pre-critical methodology. The "Experiment of Reason" aims at refuting transcendental realism, including naturalism, based on the cosmological antinomy. My talk will focus on two different kinds of inductive metaphysical reasoning based on this approach, and on the way in which they are related. Kant's idea of a systematic unity of nature gives rise to the regulative principles of natural science, on the one hand. But on the other hand, it also gives rise to the subjective claims of a doctrinal belief compatible with transcendental idealism, which is a neglected topic of Kant research that only recently began to draw more attention.

16:30-17:20 **Kristina Engelhard**, University of Trier, Germany, *Kant's justification of the objectivity of theory choice*

The inference to the best explanation is a method of reasoning that can involve criteria of theory choice, like simplicity, explanatory strength and fit with the explananda. It is an important device in scientific reasoning; IM holds that it is also an important device in metaphysics. According to Kant, transcendental ideas can only be used regulatively: in his discussion of the regulative use of transcendental ideas Kant introduces three principles of this regulative use that are, according to Kant, like the transcendental ideas supplied by pure reason: homogeneity, specification, continuity (CpR B 670-696). In choosing the valid system of empirical laws in his metaphysics of nature we are guided by these three methodological principles. In the first phase of this project IR was able to show that Kant in fact uses an IBE involving those three principles in his MFNS (cf. IR's paper *Kant's non-aprioristic practice of metaphysics in his Metaphysical Foundations of Natural Science*). They can be taken to be theory choice criteria. Initially they are nothing but heuristic principles; however, their use in IBEs is objective. Contrary to most present-day accounts, Kant thinks that the objective use of these criteria is in desperate need of justification. This thought might be even more pressing in the case of metaphysics, because a direct experimental verification or falsification of metaphysical theories is less available than with empirical scientific theories. Kant delivers this justification in his introduction to the *Critique of the Power of Judgement*. The principle of pure power of judgment, purposiveness, is supposed to supply this justification. The three regulative principles raise many questions in Kant-scholarship: how do they relate to the other transcendental ideas? How are they generated by pure reason? With respect to Kant scholarship, I investigate Kant's deduction, explication and justification of these principles of the regulative use of the transcendental ideas. With respect to the contemporary debate, I find out whether Kant's arguments are still compelling from a present-day point of view. A vital question here would be whether the purposiveness of nature really has to be presupposed to hold these criteria of theory choice as objective criteria or whether there is a substitute and if purposiveness is a necessary precondition whether there are good reasons to defend it.

Thursday 10 August 2023

10:40-11:30 **Oleksiy Polunin**, National University of Life and Environmental Sciences, Kyiv, Ukraine, *The manipulability theories of causality in the space of the multiple mental representations of time flow*

A mental representation of causality relies on the temporal connectedness of causal relations. Conventionally the temporal connectedness is built upon the singular time flow. So, one ignores that human mind develops few cognitive representations of time flow (Polunin, 2021). Each of them has specific features and specifically impacts on representation of an event in time. Thus we elaborate the role of the different time representations for mental modelling of causality. This makes the novelty of our approach. We argue for an essential variability of mental representation of causality in the space of the multiple cognitive representations of time flow. This variability can be demonstrated without any real change of the worldly events.

11:30-12:20 **Fabian Hundertmark**, University of Bielefeld, Germany, *Causal Bases in the Life-Sciences*

Potentialities are instantiated in part because they can manifest in certain counterfactual situations. Most potentialities are instantiated in virtue of so-called "causal bases". After presenting my account of causal bases, I will show that a closer look at various potentialities and their causal bases studied in the life sciences (from cell biology to clinical psychology) gives us good reason to substantially revise our assumptions about causal bases. In particular, I will show that causal bases in the life sciences are regularly extrinsic, processual, and contrastive. Moreover, my focus on these life-science examples makes it clear that potentiality instantiations often have multiple causal bases at different levels.

15:40-16:30 **Javier Suárez Díaz & Marie I. Kaiser**, both University of Bielefeld, Germany, *How to Conceive Inductive Metaphysics for Philosophy of Biology?*

The method of inductive metaphysics requires gathering insights from different empirical sciences to shed new light on metaphysical debates of a very diverse range. In this talk, we will examine whether and how the method could be useful to shed light on different debates in philosophy of biology. We will focus on examples from our own research on biological dispositions and use it as evidence to illuminate how the method can be used for better thinking philosophy of biology.

16:30-17:20 **Niklas Parwez**, University of Düsseldorf, Germany, *The Normic-Dispositional Interpretation of Fitness*

In this talk, I will argue for a revision of the propensity interpretation of fitness (PIF), which I call the normic-dispositional interpretation of fitness (NIF). According to NIF, fitness is best understood as a functional property realized under evolutionary 'normal' conditions in the sense of Schurz (2001). While previous readings of PIF have struggled to make sense of the claim that fitness is a propensity, NIF is naturally embedded into a long-run interpretation of

propensities. Furthermore, I will generalize this approach to the theoretical framework of cultural evolution by claiming its validity for both biological and cultural evolutionary dynamics.

Friday 11 August 2023

10:40-11:30 **Michael te Vrugt**, University of Münster, Germany, *The metaphysics of thermodynamics*

I show that thermodynamics and statistical mechanics have, despite being frequently overlooked in this context, significant potential for inductive metaphysics. A first example [1] is the special composition question, which asks when objects compose a further object. Thermodynamics leads to a new approach, the thermodynamic composition principle: Systems in thermal contact compose a single system. Another example [2] is haecceitism. Order-preserving dynamics, a novel method from statistical mechanics, is intrinsically haecceistic and makes better empirical predictions than non-haecceistic alternatives.

[1] M te Vrugt, *Synthese* 199, 12891–12921 (2021)

[2] M te Vrugt, *British Journal for the Philosophy of Science* (forthcoming).

11:30-12:20 **Twan Stiekel**, Humboldt University Berlin, Germany, *Quantum Mechanics as a Challenge for Inductive Metaphysics*

Quantum mechanics (QM) is a physical theory with unprecedented success in describing and predicting measurements but faces difficulties in telling us what the world is like unobserved. In this paper, I explore whether we could revise our metaphysics to be more consistent with QM by giving up our belief in a mind-independent reality. I consider two objections that could also be seen as challenges for inductive metaphysics in general. First, how do we make a choice between metaphysical alternatives if both are sufficiently empirically adequate? Second, can inductive metaphysics challenge notions and principles that are presupposed in our empirical practices?

15:40-16:30 **Alessandro Torza**, National Autonomous University of Mexico, *Toward a Constructive Theory of Metaphysical Indeterminacy*

The aim of this talk is to articulate a novel theory of metaphysical indeterminacy that (i) avoids the pitfalls of the main extant proposals (metaphysical supervenience; determinable-based account; gappy account); (ii) is motivated in terms of our best science, and in particular by quantum mechanics, rather than by purely conceptual considerations; (iii) provides a reductive analysis of the notion of metaphysical indeterminacy; (iv) has a broad range of application encompassing both empirical and non-empirical domains; (v) does not employ 'esoteric' metaphysical primitives such as naturalness, ground, dependence, and the like; (vi) is orthogonal to purely logical questions (Is logic classical? Is semantics bivalent? Is language compositional?). The view will be contextualized and defended against the backdrop of the literature on metaphysical indeterminacy that has flourished over the past few decades.

16:30-17:20 **Cristian Soto**, University of Chile, *Physical laws, modality, and empiricism*

Within the framework of inductive metaphysics, we address the modal character of laws from an empiricist perspective. Physical modality best accounts for the modal status of possibilities and necessities in physical laws. They are empirical, hence being investigated by employing theory and model construction processes, improving inductive practices, and weighing evidence supporting modal claims. Laws do not yield mere summaries of actual phenomena, but they inform us about ranges of possibilities and necessities in various domains. We shall disentangle physical and mathematical modalities, resisting the assumption of primitive mathematical constraints.

Section 3. Inductive approach to metaphysical issues

Wednesday 9 August 2023

10:40-11:30 **Alexander Gebharter**, Marche Polytechnic University, Italy, *Quantifying proportionality and the limits of higher-level causation and explanation*

Supporters of the autonomy of higher-level causation (or explanation) often appeal to proportionality, arguing that higher-level causes are more proportional than their lower-level realisers. Recently, measures based on information theory and causal modeling have been proposed that allow to shed new light on proportionality and the related notion of specificity. In this paper we apply ideas from this literature to the issue of higher vs. lower-level causation (and explanation). Surprisingly, proportionality turns out to be irrelevant for the question of whether higher-level causes (or explanations) can be autonomous; specificity is a much more informative notion for this purpose.

11:30-12:20 **Vera Hoffmann-Kolss**, University of Bern, Switzerland, *Causes, Contexts, and Norms*

Causal modelling approaches usually aim to describe a notion of causation that is used in explanations in the empirical sciences. One consideration that is currently receiving growing attention is that causal relations, especially those that occur in the special sciences, may be context-dependent. For example, whether a medical treatment increases a person's life expectancy depends on the conditions under which it is administered. However, which context is the relevant one is often not fully determined by the underlying causal structure, but is at least to some extent a normative decision. In this paper I argue that a causal modelling approach that takes this normative component into account is superior to one that ignores the normative aspect of causation.

Thursday 10 August 2023

10:40-11:30 **Martin Grajner**, Technische Universität Dresden, Germany, *Inductive Metaphysics: Lessons for the Notion of Ground*

Many philosophers have recently turned their attention to the notion of grounding to state claims of metaphysical structure or determination. But little to no efforts have been made by proponents of grounding to illuminate whether a grounding-based approach to metaphysics is compatible with the basic tenets of inductive metaphysics. In this paper, I fill this lacuna. The view I sketch claims that in determining which metaphysical grounding claims we should accept we can rely on non-debunked intuitions but at the same time we have to take into account (i) what the empirical sciences tell us about the nature of reality and (ii) employ methods from the empirical sciences in deciding between competing grounding claims.

11:30-12:20 **Quentin Ruyant**, The Complutense University of Madrid, Spain, *Possible Situations and Induction Towards Necessity*

A possible worlds analysis of necessity relations makes it hard to understand how we could know them by induction on past experience. A possible situations framework is more hospitable to induction. Situations are local, coarse-grained states of affairs. Possible situations are alternative ways actual situations could be given environmental and natural constraints. Assuming that the situations we experience are representative of all possible situations of the same class, we can gain knowledge of necessity by induction. This is a weak form of necessity, but the resulting picture is more congruent than possible worlds with scientific practice and ordinary modal discourse.

Friday 11 August 2023

10:40-11:30 **Maria Sekatskaya & Gerhard Schurz**, both University of Düsseldorf, Germany, *Abductive Account of Free Will*

Most accounts of free will either assert that there are metaphysically necessary conditions for free will, or claim that free will is a purely psychological phenomenon that does not need any metaphysical grounding. We will review the problems of both the aprioristic metaphysical accounts and the psychological accounts. After that, we will offer a new abductive account which aims to solve these problems. This abductive account is based not only on the intuitions of philosophers but also on the intuitions of the folk, researched by experimental philosophy, and on the theories of moral responsibility in the perspective of cultural evolution.

11:30-12:20 **Kian Salimkhani & Martin Voggenauer**, both University of Cologne, Germany, *On solving the problem of the direction of time*

There is an apparent contradiction between the time-reversal invariant fundamental laws and our experience of temporal asymmetries. Call this the problem of the direction of time. While the standard approaches (e.g., by Reichenbach or Albert and Loewer) attempt to solve this problem reductively, Maudlin argues that a fundamental intrinsic direction of time is indispensable. In this talk, we explore the question of when positing such fundamentals is justified and when we should look for better explanations. In particular, we examine whether assuming a fundamental intrinsic direction of time or providing a reductive explanation is better.