THE REASONER

New Work on Induction and Abduction, 29-30 September (virtual)

Inductive and abductive reasoning are indispensable not only in science, but also in philosophy, as the current work investigating these forms of reasoning clearly shows. The workshop *New Work on Induction and Abduction*, held online from September 29–30, 2021 brought together scholars from the fields of logic, epistemology, metaphysics, and philosophy of science in order to discuss the new insights and controversies regarding inductive and abductive reasoning.

The workshop focused on discussing four recent monographs: Igor Douven's "The Art of Abduction" (2021), Ilkka Niiniluotto's "Truth-Seeking by Abduction" (2018), John Norton's "The Material Theory of Induction" (2021), and Gerhard Schurz' "Hume's Problem Solved" (2019). Each of these monographs was commented upon by a renowned specialist in the corresponding field of research, and after that the replies and reflections by the authors of the monographs followed. The workshop also hosted presentations from leading scholars in this field of research, exploring and clarifying different aspects of inductive and abductive reasoning.

Oliver R. Scholz and Ansgar Seide (both WWU MÃŒnster) gave the first talk on *Induction, Abduction and Inductive Metaphysics. Historical Background and Systematic Perspectives*, in which they explored similarities and differences between inductive metaphysics as a methodological or meta-metaphysical research program, on the one hand, and inductive metaphysics as a historical movement in the 19th and early 20th century philosophy, on the other hand.

Elke Brendel (University of Bonn) highlighted in her *Commentary talk on Gerhard Schurz' "Hume's Problem Solved": Justifying Induction vs Justifying Deduction* the importance and originality of Schurz' attempt to resolve Hume's famous problem of induction by the help of optimality justification. However, she also argued that this form of justification cannot be expanded to deduction, because the putative optimality of classical logic in the sense of universal translatability of non-classical logics into classical logics does not work for well-established non-classical logics.

Gerhard Schurz (University of D́usseldorf) in his *Replies & Reflections* talk addressed this criticism by presenting new results about the translatability of four kinds of non-classical logics into classical logic: many-valued, intuitionistic, paraconsistent, and quantum logics. He argued for a generalization of optimality justifications towards a new program for foundation-theoretic epistemology, which can be applied for deductive, inductive, and abductive reasoning.

Adam Carter (University of Glasgow) presented his work on *Abduction, Scepticism, and Indirect Realism*, where he argued that abductive inference plays an important role in attaining perceptual knowledge. According to Carter, by making the transition from animal to reflective knowledge, a knower gains an epistemic perspective on her belief, from which she endorses the source of that belief as reliably truth-conducive, and thereby

improves the quality of antecedently attained perceptual knowledge.

Stathis Psillos (University of Athens) and Chrysovalantis Stergiou (American College of Greece) gave a commentary talk on *John Norton's "The Material Theory of Induction"*. They noted that, according to Norton, there are no universal principles of induction: all inductive inferences are material and warranted by local background facts. Psillos and Stergiou argued that Norton's material theory makes presuppositions in order to account for a regress problem, which seem to them no more appealing than presuppositions made by John Stuart Mill in his account of enumerative induction. They also argued that Norton's solution to Hume's original problem is based on premise circularity.

John Norton (University of Pittsburgh) concluded the first day of the workshop with his *Replies & Reflections*. Norton stressed that his material theory of induction does not rely on a principle of uniformity of nature and also that he does not object to such a principle because it is universal in scope. Rather, his main objection to the principle is that it is either so vague as to be inapplicable or just factually false. Norton also presented his approach of abduction as a two step structure, where the first step consists in comparing a favored theory with its foils and demonstrates that it is better in terms of accuracy and "evidential depth"; the second step is the more challenging one (and in practice oftentimes neglected) and aims to demonstrate that the favored theory is not only better but actually the best.

Christian J. Feldbacher-Escamilla (University of Cologne) and Gerhard Schurz opened the second day of the workshop with their talk on *Epistemic Engineering: The interplay of meta-induction and abduction in the justification of laws of nature*. They argued that meta-induction is a prediction method that solves the problem of induction by, first, employing optimality justifications instead of reliability justifications; and, second, using the past track record of induction to justify that induction is an optimal choice for making predictions. They also considered recent objections to this method and argued that these can be answered by using a principle of cognitive coherence and a weak inductive uniformity assumption that plays also an important role in the justification of scientific laws.

Paul Thorn (University of D´usseldorf) in his commentary talk on *Igor Douven's "The Theory and Practice of Abduction": Abduction, Induction, and Direct Inference* considered some ways by which one form of non-deductive inference might depend on another and argued that the reasons given in Douven's book for thinking that abduction is not dependent on induction are not entirely conclusive.

Igor Douven (INSHS, Paris) in his *Replies & Reflections* responded to this criticism by providing a detailed example (an evolutionary simulation) of two competing strategies of reasoning, inductive *vs* abductive, running against each other in an expert prediction game, and getting different results (with abduction being more successful in the long run).

Alexandros Apostolidis (University of Athens) and Stathis Psillos gave a talk on *Why Formal Abduction is not IBE*. They argued that AKM (Aliseda – Kowalski, Kuipers, Kakas – Magnani, Meheus) models recently proposed to formalize Inference to the Best Explanation (IBE) by means of explanatory abduction and minimal abduction are unsuccessful. They are neither internally equivalent with IBE, because their criteria for determining the best explanation are different, nor externally equivalent with IBE, because there exists at least one class of abductive problems where they end up with different solutions.

Stephen Biggs (Iowa State University) and Jessica Wilson's (University of Toronto at Scarborough) talk was entitled *Does Anti-Exceptionalism about Logic Entail that Logic is Justified A Posteriori?* They argued that abduction is an *a priori* mode of inference, and considered the consequences that this thesis has for the proper understanding of anti-exceptionalism about logic. In particular, they argued that the justificatory status of logic turns not on the role played by abduction as such, but on the justificatory status of *a priori* or *a posteriori* data on which abduction operates.

Atocha Aliseda Llera (National Autonomous University of Mexico, UNAM) gave the last commentary talk of the workshop, namely, on *Ilkka Niiniluoto's "Truth-Seeking by Abduction": Truth-Seeking by Abduction: A Rule for Progress in Science?* She considered the place of this book in the context of research on scientific change in a post-Kuhnean era in the philosophy of science, and discussed in detail Niiniluoto's account of abduction and truthlikeness; as well as his notion of abductive belief revision.

Ilkka Niiniluoto's (University of Helsinki) *Replies & Reflections* was the final talk of the workshop. Niiniluoto provided a historical sketch of the debate about verisimilitude and truthlikeness and outlined how this debate can be and also was in fact linked to the discussion of abduction, stressing also that he considers the most recent development in this area of research as highly promising.

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