

Introduction to an Interdisciplinary Philosophy of Science

Week & Theme	Wicked Philosophy materials	Optional supportive literature
1 Wicked Philosophy for Wicked Problems <i>Introduction to an interdisciplinary philosophy of science for the study of our contemporary complex problems</i>	<ul style="list-style-type: none"> • § 1.1: Wicked Problems: The Great Challenges of Our Times • Accompanying knowledge clips: <ol style="list-style-type: none"> 1) What are wicked problems? 2) What are paradigms? 3) Complexity Thinking; 4) Self-Organisation; 5) Emergence 	<ul style="list-style-type: none"> • Homer-Dixon, T. 2011. Complexity Science. Shifting the trajectory of civilization, <i>Oxford Leadership Journal</i>, 2(1): 1-15.
2 What is 'the' scientific method? <i>The development from positivism to critical rationalism</i>	<ul style="list-style-type: none"> • § 1.2: The State of Modern Science – § 2.1: The Traditional Standard Research Model • Accompanying knowledge clips: <ol style="list-style-type: none"> 1) The traditional standard research model 2) Karl Popper and falsification 	<ul style="list-style-type: none"> • Popper, K.R. 1963. Selected paragraphs from <i>Conjectures and Refutations – The Growth of Scientific Knowledge</i>, London: Routledge & Kegan Paul Ltd: 33-53.
3 To explain or to understand - Is that the question? <i>The interpretivist approach as alternative for the 'standard' model of science</i>	<ul style="list-style-type: none"> • § 2.2: Interpretivism as an Alternative Paradigm • Accompanying knowledge clips: <ol style="list-style-type: none"> 1) Interpretivism as an alternative paradigm 2) The double interpretation problem 3) Prof. Giddens on (post)modernity 	<ul style="list-style-type: none"> • Giddens, A. 1976. Selected paragraphs from 'The production and reproduction of social life'. In: idem. <i>New Rules of Sociological Method: A Positive Critique of Interpretative Sociologies</i>: 104-116.
4 Projecting the future <i>The role of models and simulations in science</i>	<ul style="list-style-type: none"> • § 2.3 & § 2.4: Current Models & Future Thinking • Accompanying knowledge clip: <ol style="list-style-type: none"> 1) The role of models and simulations in finding explanations and formulating solutions for complex problems 	<ul style="list-style-type: none"> • Knuuttila, T. 2005. Models, representation, and mediation, <i>Philosophy of Science</i>, 72(5): 1260-1271.
5 Reality: is it given, or do we make it ourselves? <i>Objectivist versus subjectivist perspectives on reality</i>	<ul style="list-style-type: none"> • § 3.1 - § 3.2: Objectives Structures or Subjective Perspectives - A Clash of Approaches? • Accompanying knowledge clips: <ol style="list-style-type: none"> 1) The correspondence and coherence theory of truth 2) From Master Mind to Map Making 3) Prof. McIntyre on science denial and post-truth society 	<ul style="list-style-type: none"> • McIntyre, L. 2018. Did postmodernism lead to post-truth? In: idem. <i>Post-Truth</i>, Cambridge, MA – London: MIT Press: 123-150.
6 Structure and Agency - Two sides of one and the same coin <i>Overcoming the dichotomy between realism and constructivism</i>	<ul style="list-style-type: none"> • § 3.3.1 - § 3.3.2: The Duality of Structure & The Stratification of Nature • Accompanying knowledge clip: <ol style="list-style-type: none"> 1) The stratification of nature 	<ul style="list-style-type: none"> • Giddens, A. & Pierson, C. 1998. Interview Three: Structuration Theory. In: idem. <i>Conversations with Anthony Giddens: making sense of modernity</i>, Cambridge: Polity Press: 75-87.
7 (How) Can Complexity Thinking help us Deal with Complex Problems? <i>Can it indeed offer a new, overarching paradigm for a 'wicked' philosophy for our 'wicked' problems?</i>	<ul style="list-style-type: none"> • Ch1 revisited, § 1.4: Future Avenues • Ch3 § 3.3.3: A New Perspective: Knowledge as a Coral Reef • Accompanying knowledge clips: <ol style="list-style-type: none"> 1) Critical Realism 	<ul style="list-style-type: none"> • McMurtry, A. & Dellner, J. 2014. Relationalism: An Interdisciplinary Epistemology. Or, why our knowledge is more like a coral reef than fish scales, <i>Integrative Pathways</i>, Oct. 2014, 36(3): 6-12.

Program (Philosophy of) Science in a Post-Truth Society

Week & Theme	Wicked Philosophy materials	Optional supportive literature
1 Wicked Problems in a Post-Truth Society <i>Introduction to boundary crossing science for the 21st century challenges</i>	<ul style="list-style-type: none"> Chapter 1 Twenty-First-Century Science Accompanying knowledge clips: <ol style="list-style-type: none"> 1) What are wicked problems? 2) What are paradigms? 3) Complexity Thinking; 4) Self-Organisation; 5) Emergence 	<ul style="list-style-type: none"> Homer-Dixon, T. 2011. Complexity Science. Shifting the trajectory of civilization, <i>Oxford Leadership Journal</i>, 2(1): 1-15. Lotter, H. 1999. The Complexity of Science, <i>Koers</i>, 64(4): 499-520.
2 How to distinguish scientific knowledge from pseudoscience <i>On the various approaches to knowledge acquisition, and how we can differentiate these from conspiracy theories and other false, pseudo-scientific claims</i>	<ul style="list-style-type: none"> Chapter 2 Contemporary Approaches Accompanying knowledge clips: <ol style="list-style-type: none"> 1) The traditional standard research model 2) Karl Popper and falsification 3) Interpretivism as an alternative paradigm 4) The double interpretation problem 5) Prof. Giddens on (post)modernity 	<ul style="list-style-type: none"> Popper, K.R. 1963. Selected paragraphs on Popper's demarcation criteria from his book <i>Conjectures and Refutations</i>, London: Routledge & Kegan Paul Ltd: 33-53. Foucault, M. 1971. <i>Orders of discourse</i>. Inaugural lecture delivered at the Collège de France, London: Sage Publications: 7-12.
3 Truth Theories & Constructed Facts <i>Nature versus culture? Scientific objectivity as social construction</i>	<ul style="list-style-type: none"> Chapter 3 Structure and Action in Science Accompanying knowledge clips: <ol style="list-style-type: none"> 1) The correspondence and coherence theory of truth 2) From Master Mind to Map Making 3) The stratification of nature 4) Critical Realism 	<ul style="list-style-type: none"> Latour, B. 1988. The quandary of the fact builder & Translating interests. In: idem. <i>Science in Action</i>, Cambridge MA: Harvard University Press: 103-121. Bhaskar, R. 2005. Critical Realism in the Social Sciences? Interview with Bhaskar by Buch-Hansen, H. <i>Distinction</i>, 11: 59-64.
4 The Pro's and Con's of Modernity's Rationality Project <i>On the intended and unintended consequences of the Project of Reason</i>	<ul style="list-style-type: none"> Chapter 4 Science as a Rational Process, §4.1 -4.3 Accompanying knowledge clip: <ol style="list-style-type: none"> 1) Prof. Giddens on (post)modernity 	<ul style="list-style-type: none"> Toulmin. S. 1990. Selected paragraphs from <i>Cosmopolis. The Hidden Agenda of Modernity</i>, New York: The Free Press: 167-201. Giddens, A. 1990. Modernity or PostModernity? In: idem. <i>Consequences of Modernity</i>, Cambridge: Polity Press: 45-54.
5 Knowledge versus Wisdom <i>On the role of science with regard to existential questions</i>	<ul style="list-style-type: none"> Chapter 4 Science as a Rational Process, §4.4 -4.5 Accompanying knowledge clip: <ol style="list-style-type: none"> 1) Prof. Lakoff on the biased view on rationality of 'Enlightened' thinkers 2) Prof. McIntyre on science denial and post-truth society 	<ul style="list-style-type: none"> McIntyre, L. 2018. Did postmodernism lead to post-truth? In: idem. <i>Post-Truth</i>: 123-150. Cambridge, MA – London: MIT Press. Wijnberg, R. 2020. Truth be sold. How truth became a product. <i>De Correspondent</i>, 5 March 2020.

<p>6 The Societal Value of Science <i>The impact of science on society and the role of value frames in joint knowledge creation</i></p>	<ul style="list-style-type: none"> • Chapter 5 Robust Knowledge for Complex Problems, §5.1 & 5.2 • Accompanying knowledge clips: <ul style="list-style-type: none"> 1) Prof. Latour on Gaia 	<ul style="list-style-type: none"> • Lenton, T. M., & Latour, B. 2018. Gaia 2.0. <i>Science</i> 361 (6407): 1066-1068. • Morin, E. 2008. Blind Intelligence, In: idem, <i>On Complexity</i>, Cresskill: Hampton Press: 1-6.
<p>7 Science in a Post-Truth Society <i>How to keep away from extreme relativism and hopeful towards the future?</i></p>	<ul style="list-style-type: none"> • Chapter 5 Robust Knowledge for Complex Problems, §5.3 & 5.4; Table 3.1 from Chapter 3 • Accompanying knowledge clips: <ul style="list-style-type: none"> 1) Prof. Nowotny on Quality Criteria for Research into Complex Issues 	<ul style="list-style-type: none"> • Nowotny, H. 2016. The Embarrassment of Complexity, In: idem. <i>The Cunning of Uncertainty</i>, Cambridge/Malden: Polity Press: 128-136.