

Introduction

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The current and third issue of *Pulse* brings together an eclectic range of approaches and topics to the history, philosophy, and sociology of science. The papers collected within are organised around four broad themes. We begin with metaphysical issues in the philosophy of science, before proceeding to consider how individual philosophers have developed these themes in their own work. This is followed by a section dedicated to the history of science with a dual focus on past and contemporary cases. The issue is brought to a close with a look at the interaction between science and society. In what follows we offer a more detailed description of each section, the questions that define these sections, and the connections between the individual pieces that comprise them.

Philosophy of Science

The search for an account of how best to characterise the phenomena in the world has long been a goal of philosophers of science. Can an account capture the relationships between phenomena in the world, both causal and constitutive? Can this account serve as a guide to ruling out proposed phenomena that fail to meet certain criteria? The issue begins with two papers exploring these and related questions. Freitas begins by exploring physicalism – the view that everything in the world is physical. Stated as such, physicalism does not offer much to go on. Through the lens of recent work on the concept of physicalism, Freitas discusses whether ‘physicalism’ is actually apt to capture anything significant about the world around us. Freitas explores not only a variety of accounts of physicalism but also the strategies used to construct them. Specifically, he analyzes *via negativa* – constructing an account of what physicalism is by ruling out what it cannot consist in. He concludes that this strategy is doomed to fail and possibly so too is the traditional conception of physicalism. In our next piece, Morales discusses an alternative to classical physicalism – namely, non-reductive physicalism. Here we are introduced to the concepts of emergentism and downward causation – do new properties emerge through increasing complexity and can these new properties have a causal effect on properties at a lower level of complexity? Morales argues, conceptually at least, that they can – leaving the door open for empirical work to confirm such hypotheses.

Philosophers on Science

Often individual philosophers are associated with clear, neat, easily discernible views on science. In this section of the issue we present two papers that seek to engage with such historical figures and see what lessons can be learnt for contemporary science studies. Are the classic portraits of these figures accurate? Are their disagreements and similarities faithfully represented, or does more careful analysis reveal fruitful divergence from the received view of these philosophers and their engagement with science? In the first paper, Zsolt Kapelner takes up this very question and argues that there are interesting similarities between the work of Heidegger and the logical positivists – particularly Rudolf Carnap and Otto Neurath. Kapelner points to their respective views on the use and abuse of science, as well as the possibility of radical revision for any given scientific statement, in order to demonstrate how these philosophers share much, despite rarely being considered as complementary. In a similar vein, Massimiliano Simons turns our attention to two prominent French philosophers – Foucault and Althusser. Simons argues that, despite being the received view, the major point of difference between Foucault and Althusser on science was not their differences on the concept of ideology. Rather, Simons argues, their difference lies in the way that they understand the connection between ideology and science.

History of Science

The “History of Science” section is methodologically dominated by an internalist perspective, which focuses on the conceptual operations and epistemic and social effects of the discourse of knowledge itself. How is discourse of knowledge shaped by the historical context in which it takes place? From where does scientific authority emerge and how is it sustained?

Athanasios Rintotas provides a rich and ambitious account that counters orthodox historiographies of science that either completely disregard or discredit both the Middle Ages and the Arab influence on the constitution of “European Science.” Rintotas is interested in the dynamics of the process of scientificization of knowledge in the modern West as a paradigmatic process of reconceptualisation of the forms, the methods, and the goals of epistemic inquiry. Rintotas takes for granted the authoritative epistemic position of natural philosophy – which he also sees not as a pure product of the Greco-Roman Antiquity. Rintotas' paper thus makes two parallel arguments: (1) that the Arabic translations of the 11th - 12th centuries A. D. were crucial to the implantation of Greek natural philosophy

into the intellectual soil of continental Europe; and (2) that transformed Greek natural philosophy was itself crucial to the naturalisation of magic and alchemy, and to the reclassification of the sciences so that magic and alchemy would become more epistemically authoritative ways of dealing with nature.

Whilst Rinotas chooses to focus on the Arab contribution to “European” medieval and early modern scholastic knowledge, for both Ana Popović and Kylie Boazman modern 19th-century science seems decidedly European and a product of empire. Popović’s paper situates the meaning of late 19th-century soap advertisements in Britain at the intersection of classist medical and hygienist discourses of health-preservation and disease-prevention, and of racial-imperialist discourses of whitening and civilizing. Popović draws upon the work of Anne McClintock in order to point out the contours and the modes of operation of “commodity racism” as a form of popularization of “scientific racism.” Here she includes discussion of 19th-century anthropological theories on the origin of racial differentiation, the Darwinian theory of natural selection, and its subsequent ramifications in social theory and population government.

“Scientific racism” remains at the heart of Kylie Boazman’s article, which focuses on physiological sensitivity to pain and emotional sensibility as vectors of differentiation among human bodies in function of gender, race, and able-bodiedness. Boazman argues for the rhetorical and material co-constitution of science/scientist and scientific object through the very mobilization of that differentiation process. This striking juxtaposition of arguments and analytical angles testifies to the pluralism of science – in terms of the meanings attached to it, and of the cognitive and practical operations constitutive of it – and thus, ultimately, to its historicity.

Science and Society

The final section aims to bring forth questions arising from the multiple ways in which science and scientific discourse affect society and vice versa. Donatas Paulauskas’ article offers insights into the ways in which activist group ACT UP’s posters criticised scientific-popular discourses on AIDS in the late 1980s USA, by utilising and altering the meanings given to the image of monstrosity when picturing AIDS patients. Andrea Prajerová’s article questions how current medical interventions, such as foetal screening, have modified the issues connected to abortion in neoliberal society. By pointing out versatile feminist scholarship on abortion and “free choice” and combining it with the biopolitical theories of Michel Foucault, Ruth Miller, and Penelope Deutscher, Prajerová offers a nuanced and critical view on the

possibility to consider abortion as “free choice” in contemporary neoliberal society. She does this by highlighting how questions related to abortion are connected to normalised conceptions of race, gender and able-bodiedness. Finally, Tamara Szűcs article leads us deeper into questions related to the changing relations between humans and technology. By examining recent discourses related to Rosetta and Philae space projects, Szűcs develops Donna Haraway’s concept of a cyborg in order to argue for a need for a more nuanced understanding of the human-machine interaction that would not be centered on humans.

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