



## “What is HPS for?” Review of the Fifth Joint Workshop on Integrated History and Philosophy of Science

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## REVIEWS

### “What is HPS for?”

Review of the Fifth Joint Workshop on Integrated History and Philosophy of Science June 28th-29th 2010, University of Exeter\*

Felix Rietmann<sup>†</sup>

The Fifth Joint Workshop on Integrated History and Philosophy of Science asked participants, “What is HPS for?” This clearly instrumental question generated a welcome spectrum of practical responses. Examples of “HPS-in-action” included the concept of complementary science, suggestions for new pedagogical strategies and investigations into the socio-political dimensions of science. On the other hand, a more theoretical underpinning did emerge in a discussion of the pros and cons of pluralism. This emphasis on pluralism not only underlies complementary science, but may also provide a pragmatic working basis for developing a more active role for HPS in both science and society.

Hasok Chang (University College London) defines complementary science as the generation of scientific knowledge by historical and philosophical studies. The concept stems from a critical evaluation of Thomas Kuhn’s notion of normal science: while the daily activities of scientists do not allow for critical inquiry into established truths and past puzzles, such inquiry is, according to Chang, open to historians and philosophers of science. In “questioning the obvious” and “seeking the strange,” HPS may recover lost knowledge, generate a critical awareness of our scientific heritage and contribute to new developments (Chang 2004, 235-50). In his presentation Chang additionally suggested that complementary science could entail repeating old and designing new experiments. In current projects such as for instance “How does the battery work?” Chang gives examples of how complementary science might provide a framework for interdisciplinary collaboration not only between philosophers and historians, but also between historians, philosophers, and scientists. Chang hopes that this approach to HPS might actively help open the scientific enterprise to different kinds of inquiry by different sections of society.

While Chang’s interdisciplinary concept undeniably presents an interesting vision for integrated HPS, notable differences between scientific and

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historical-philosophical inquiry understandably gave rise to doubts about its feasibility. Criticisms of this nature centred around questions of its acceptance by the scientific community, its relevance for current scientific research, and its generalizability. John Dupré (University of Exeter) suggested, for instance, that complementary science might better be seen as a thesis about HPS than as a programme. While Chang’s complementary science shows that HPS does, indeed, matter to scientists, the possibilities of extending it to highly complicated areas of contemporary science, such as molecular biology, may be very limited. Such limitations led other contributors to worry that the scientific community might consider results of complementary science at best, uninteresting and, at worst, pseudoscientific. Against these concerns Chang pointed to the heterogeneity of scientists’ reactions and suggested that it might be possible to concentrate on early experimental sciences in which setups are comparably simple. However, he also stressed the pedagogical dimension of complementary science: if incorporated into curricula it could potentially lead to a shift in scientific education from mere textbook-learning towards an active and critical inquiry.

The following sessions, “Making HPS Relevant through Teaching” and “What is HPS for?” also advocated a more active role of integrated HPS in both education and policy. Peter Vickers (Leeds University) and Brendan Clarke (UCL) advanced different pedagogical strategies for making HPS relevant to high school and medical students, respectively. These included, for instance, the development of a “complex mechanism browser” that would enable medical students to actively explore the philosophical concept of causality. In a more policy-centred vein, Graeme Gooday and Gregory Radick (Leeds University) analysed the historical origins of intellectual property, and Josipa Petrunic (UCL) criticised Platonism in the philosophy of mathematics. Although disparate in their interests, each of these speakers emphasised HPS’s potential to contribute to socio-political maturity. In this context Gooday shed light on the metaphysical dimensions of contemporary terms, while Petrunic demanded a more humane and democratic perspective on mathematical knowledge with implications for both politics and education.

While the conference focused broadly on finding an active role for HPS in science, education, and policy, the section on pluralism aimed at furnishing integrated HPS with a philosophical basis. While there are different versions of pluralism, the general claim is “that some natural phenomena cannot be fully explained by a single theory or fully investigated using a single approach” (Kellert et al. 2006, vii). Pluralism is partly motivated by an empiricist attempt to overcome the long-standing debate between realism and anti-realism by sidestepping truth questions in pursuit of a pragmatic working basis for future inquiry (Chang 2001; Chang 2004, 231-3). Significantly, pluralism turns out to be congruent with most of the aforementioned potential functions of integrated HPS: complementary science opens the scientific enterprise to alternative (plural) modes of inquiry; socio-political awareness requires an openness towards counter-intuitive models

of thought; and integrated HPS promotes a pluralist outlook in education.

Other contributors to the conference discussed further uses for pluralism. Catherine Kendig and Chiara Ambrosio (UCL) showed, for instance, that pluralism might also be used as a historical tool to better characterise some past scientific movements. Ian Kidd (University of Durham) advanced a value-centred HPS as an extension of HPS into the realms of ethics and science policy. In contrast, Stephen John (University of Cambridge) took a more cautious tone, arguing that scientific pluralism may conflict with some critical tools of political decision-making.

The Fifth Joint Workshop on Integrated HPS stood out for its practical and truly interdisciplinary focus. Whether or not we endorse a pluralist philosophy, HPS’s critical engagement with history promises a colourful and broad debate regarding crucial questions of daily life.

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