

Seminars

Departmental Seminars

Seminars are held on **Thursdays from 4.30 to 6.00pm in Seminar Room 2**, Department of History and Philosophy of Science, Free School Lane, Cambridge. There is tea beforehand from 4pm in Seminar Room 1.

Organised by Karin Ekholm.

6 & 13 October Research Topics and Resources Seminars: see page 5

- 20 October **Robin Findlay Hendry (Durham University)**
No really, it is: 'water' and 'H₂O'
- 27 October **Xavier Roqué (Universitat Autònoma de Barcelona)**
The rise of modern physics in Spain: knowledge, power and memory
- 3 November **Bence Nanay (University of Antwerp and Peterhouse, Cambridge)**
Singularist semirealism
- 10 November **Cesare S. Maffioli (International Academy of the History of Science)**
The mathematicians' philosophy: early Italian perspectives on the intellectual appropriation of the mechanical arts
- 17 November **Abigail Woods (Imperial College London)**
Rethinking health, disease and modernity: a view from the farm, c.1930–70
- 24 November **Josipa Petrunic (University of Toronto)**
Cambridge mathematics in the north: Peter Guthrie Tait, Philip Kelland and the local nature of mathematics in Edinburgh, 1858–65

The Seventh Cambridge Wellcome Lecture in the History of Medicine will be held next term, on Thursday 19 January 2012. **Staffan Müller-Wille (University of Exeter)** will speak on 'Revisiting the Mendelian revolution'.

Seminar Programmes are sent out at the start of every term to the names on our mailing list. Please contact the Department if you would like to be added to or removed from the mailing list, or if you change your address.

Seminar information is also available at www.hps.cam.ac.uk/seminars

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Abstracts

20 October **Robin Findlay Hendry (Durham University)**

No really, it is: 'water' and 'H₂O'

'Water' is common to both scientific and vernacular language, and so is a good example with which to explore the disputed relationship between them. Does vernacular usage defer to science, so that water must be H₂O? If so, then for centuries the folk might apply the term to something that science may discover not to be water. Or may vernacular usage properly resist scientific reform, because it embodies a quite distinct body of knowledge and classificatory interests? In that case things that are not H₂O may rightly continue to be called 'water'. Call these options deference and difference: I argue that difference presupposes the basic adequacy and coherence of the vernacular usage. In the case of 'water' that adequacy and coherence is missing unless the term tracks H₂O content.

27 October **Xavier Roqué (Universitat Autònoma de Barcelona)**

The rise of modern physics in Spain: knowledge, power and memory

In the decades following the Spanish Civil War (1936–1939), General Franco's regime enlisted modern physics in the construction of an autarkic, totalitarian new state. The regime launched costly research and development programmes in nuclear physics, aeronautics and material sciences, and moulded a scientific community depleted by the war. It has proved difficult to make sense of these developments, especially since our understanding of the power relations of science in the dictatorship is shaped by the way its legacy has been handled. Francoism remains such an urgently conflicted issue, that these relations have been dismissed or minimized. Physicists and historians have emphasized that Francoist policy was indifferent if not hostile to modern science, and that the regime's official ideology, National Catholicism, did not reach beyond the rhetorical surface. I will challenge these views by discussing one important if neglected aspect of the coproduction of science and the regime. Beginning in the 1930s, prominent right-wing ideologues sought to replace the progressive liberal reading of physics that had prevailed in the country through the first decades of the century, for a reactionary modernist reading that stressed the spiritual dimension of the discipline. They explicitly echoed German debates on technology and culture, yet were careful to avoid any materialistic or atheistic implication and argued rather for the integration of science in the Christian scheme of the world. Physics was thus aligned with the political and religious discourse that became hegemonic after the war. I will reflect on the implications of this story for our understanding of science in totalitarian regimes, and account for its invisibility.

3 November **Bence Nanay (University of Antwerp and Peterhouse, Cambridge)**

Singularist semirealism

The aim of this talk is to carve out a new position in the scientific realism/antirealism debate and argue that it captures some of the most important realist and some of the most important antirealist considerations. The view, briefly stated, is that there is always a fact of the matter about whether the singular statements science gives us are literally true, but there is no fact of the matter about whether the non-singular statements science gives us are literally true. I call this view singularist semirealism. Singularist semirealism sides with scientific realism with regards to singular statements but it is an antirealist view with regards to non-singular statements. In this sense, singularist semirealism could be considered to be 'the best of both worlds'.

10 November **Cesare S. Maffioli (International Academy of the History of Science)**

The mathematicians' philosophy: early Italian perspectives on the intellectual appropriation of the mechanical arts

In this talk I suggest that mathematicians' early interest in philosophy was partly due to the need to understand the inventions of the mechanical arts. This theme is developed by discussing two rather

different cases. Attention is first focused on the Renaissance physician and mathematician Girolamo Cardano, who in his works gave philosophical dignity to the mechanical arts, explained the working principles of their findings and developed new fields, such as the mathematical study of the motion of water. The second case concerns the theories of matter of Galileo Galilei and Domenico Guglielmini. Some scarcely considered aspects of these theories, such as Galileo's quantification of the forces of cohesion of solids and liquids through the measurement of the force of void and Guglielmini's mechanistic views on the process of aggregation of salt particles in aqueous solutions, indicate that engineering experimentation in the field contributed in a determining way to the development of the new sciences and that mathematics' share in the corpuscular philosophy was greater than is usually thought.

17 November **Abigail Woods (Imperial College London)**

Rethinking health, disease and modernity: a view from the farm, c.1930–70

Focusing on veterinary understandings of livestock health and disease, this paper calls for a rethinking of the history of infectious disease concepts. Most existing literature on this topic highlights the reductionism of post-germ theory concepts when compared to earlier, more ecological understandings of disease. While interest in social and environmental determinants of disease did not disappear entirely, until the 1980s it was largely confined to individuals critical of industrial modernity and its environmental impacts. Then, new and emerging diseases such as AIDS, antimicrobial resistance, environmentalism, and the backlash against intensive farming brought ecological conceptions back into mainstream medical thought.

My paper will challenge this narrative by revealing that ecological conceptions of livestock disease were actually constitutive with agricultural modernity. The mid-century shift to more intensive husbandry systems and the privileging of livestock productivity led to the emergence of new diseases, along with new ways of thinking about and managing them. Formerly viewed as a consequence of germs invading susceptible bodies, livestock disease became an ecological product of bodies interacting with their environments, a condition influenced as much by feeding, breeding, housing and stockmanship as by pathogens. At the same time, health ceased to equate to an absence of disease symptoms, and became one of several factors contributing to optimal growth and productivity. In this way, it became possible to pursue health and productivity without attending directly to pathogens or disease. The paper concludes by examining the implications of these shifts for the traditional experts in livestock disease, veterinary surgeons.

24 November **Josipa Petronic (University of Toronto)**

Cambridge mathematics in the north: Peter Guthrie Tait, Philip Kelland and the local nature of mathematics in Edinburgh, 1858–65

This article relates to mathematics in Edinburgh leading up to and just following the Universities Act (Scotland) in 1858. Philip Kelland, Professor of Mathematics from 1838, and Peter Guthrie Tait, Professor of Natural Philosophy from 1860, were both Cambridge-trained Senior Wranglers. Yet, neither actor advocated a wholesale implementation of Cambridge-style Tripos examination in Edinburgh, despite the fact that the Universities Act provided them with the cultural space and impetus to do so. Tait and Kelland also collaborated on the development of the highly analytical mathematics of quaternions, though neither actor sought to impose this form of geometrical analysis on his students. Thus, despite their collective potential to serve as conduits through which Cambridge mathematics, or at least an analysis-heavy curriculum, could have been more explicitly imposed in the north, neither Kelland nor Tait enforced such a transformation. Rather, their contributions to the development of mathematical curricula in Edinburgh were shaped more by the university's institutional and cultural geography (where natural philosophy was privileged over and above symbolical mathematics) than by their own rigid training in Cambridge-style mathematics. In sum, this article explores the Scottish case study of Kelland and Tait to argue that mathematical knowledge is not simply transferable, but is heavily dependent upon local conditions.

Cabinet of Natural History

This research seminar is concerned with all aspects of the history of natural history and the field and environmental sciences. Seminars are held on **Mondays at 1pm in Seminar Room 1**. You are welcome to bring your lunch with you.

Organised by Sophie Waring.

- 10 October **Philippa Hardman (Darwin Correspondence Project, Cambridge)**
‘Your observations and experiments are by far the best which have ever been made’: the hidden world of women and science in Charles Darwin’s private correspondence
- 17 October **A. Kathryn Schoefert (HPS, Cambridge)**
Placing a laboratory: botanical buildings in Cambridge around 1900
- 24 October Fungus Hunt
- 31 October **Jenny Rampling (HPS, Cambridge)**
Halloween special: Trick or treatise? Alchemy as natural magic
- 7 November **Philip Howell (Geography, Cambridge)**
Domesticating the Victorian dog: a public life for a private animal
- 14 November **Katey Anderson (York University, Toronto)**
Descriptions and disciplines in the ocean: defining the perspective of oceanography in the 1920s
- 21 November **Tim Boon (Science Museum)**
Percy Smith: the self-creation of an amateur scientist and filmmaker
- 28 November **Christine Aicardi (Wellcome Library and UCL)**
Continuities in Francis Crick’s scientific life and the ethos of post-World War II Cambridge biophysics

Research Topics and Resources Seminars

Seminars on research topics and resources in history and philosophy of the sciences and medicine, **for all new graduate students**, are held in the first two weeks of term, on **Thursdays at 4pm in Seminar Room 2**. Tea is available from 3.45pm in Seminar Room 1. All welcome.

Each seminar will consist of short informal talks introducing some basic topics and methodologies. The seminars are complemented by an online guide at www.hps.cam.ac.uk/research.

Organised by Simon Schaffer and Anna Alexandrova.

- 6 October **Matthew Lane**: Research skills training offered by the School of Humanities and Social Sciences
Jenny Bangham: Researching the history of 20th-century biology
Katharina Kraus: Philosophy of science
Josh Nall: Researching in the Whipple Museum
- 13 October **Nick Jardine**: Introduction to research resources in HPS
Patricia Fara: Scientific images
Rohan Deb Roy: Empire and insects
Caitlin Wylie: Interviewing scientists for sociological research

History of Medicine Seminars

Seminars are on **Tuesdays from 5.00 to 6.30pm in Seminar Room 1**. Tea and biscuits are available from 4.40pm. All welcome!

Organised by Elaine Leong, Nick Hopwood and Karin Ekholm.

- 11 October **Jane Munro (Fitzwilliam Museum)**
Silent partners: artists and the mannequin from function to fetish
- 1 November **Hannah Newton (HPS, Cambridge)**
'Nott a sadder creature in the world': parental grief in early modern England, 1580–1720
- 8 November **Alex Mold (London School of Hygiene & Tropical Medicine)**
Speaking for the patient as consumer in late 20th-century Britain
- 22 November **Ronit Yoeli-Tlalim (Goldsmiths, University of London)**
Medicine in and around Dunhuang: preliminary assessment of ancient transmissions of medical knowledge along the Silk Road

Generation to Reproduction Seminars

These seminars, on **Tuesdays from 5.00 to 6.30pm in Seminar Room 1**, are funded by our Wellcome Trust strategic award in the history of medicine (www.reproduction.group.cam.ac.uk). Tea and biscuits are available from 4.40pm. All welcome!

Organised by Nick Hopwood.

- 18 October **Martina Schlünder (Justus-Liebig-Universität Giessen)**
Temporal economies in fertility research in Germany, 1900–45
- 15 November **Susanne Lettow (Freie Universität Berlin)**
Rethinking generation in the late 18th century: the concept of 'reproduction'

Generation to Reproduction Reading Group

This group discusses pre-circulated papers, classics as well as our own work, in the area of our Wellcome Trust strategic award in the history of medicine (www.reproduction.group.cam.ac.uk). We also hold work-in-progress sessions.

This term's meetings will be at 5–7pm (tea from 4.50) on **Tuesdays 25 October and 29 November in Seminar Room 1**. To join the group, please email generate@hermes.cam.ac.uk.

Twentieth Century Think Tank

The Twentieth Century Think Tank (TCTT) is a discussion group organised by graduate students and postdoctoral fellows. It offers broad coverage of 20th- and 21st-century topics in the history, philosophy and sociology of science, technology and medicine.

Copies of readings may be found in the TCTT box in the Whipple Library. Meetings are held **every other Tuesday during term at 1pm in Seminar Room 1**. All welcome, and feel free to bring lunch! There will also be occasional film and documentary showings.

For more information, please visit our website <https://sites.google.com/site/hpstthinktank>. To join the mailing list, email hps-think-tank@lists.cam.ac.uk.

Organised by Leon Rocha and Kathryn Schoefert.

- 18 October **Christos Lynteris (CRASSH, Cambridge)**
The event in the syndemic: state and subject formation in the two Manchurian pneumonic plague outbreaks (1910–11, 1920–21)
- 1 November **Michal Murawski (Social Anthropology, Cambridge)**
The palace of cats and falcons: 21st-century fauna in a 20th-century skyscraper
- 15 November **Fran Bigman (English, Cambridge)**
A mould discarded: abortion and class in 1930s rhetoric and fiction
- 29 November **Atsuko Naono (School of Oriental and African Studies)**
Good practices in rural landscapes: J. Entrican and the rediscovery of indigenous medicine in colonial Burma

Things: Material Cultures of the Long Eighteenth Century

The seminar meets **alternate Tuesdays, 12–2pm in the CRASSH Seminar Room on Mill Lane**. A light lunch will be provided.

This series will use an approach based on objects to encourage us to consider the unity of ideas of the long 18th century, to emphasise the lived human experience of technology and art, and the global dimension of material culture. Each seminar will feature two talks each considering the same type of object from different perspectives.

Organised by Katy Barrett, Sophie Waring and others.

Further information at www.crassh.cam.ac.uk/page/1036/thingsmaterial-cultures-18thc.htm

- 11 October **Simon Schaffer (HPS, Cambridge) and Nick Thomas (Museum of Archaeology and Anthropology, Cambridge)**
Artefacts
- 25 October **Kim Sloan (British Museum) and Charlie Jarvis (Natural History Museum)**
Botany
- 8 November **Richard Dunn (National Maritime Museum) and Alexi Baker (HPS, Cambridge)**
Scientific instruments
- 22 November **Catherine Eagleton (British Museum) and Martin Allen (Fitzwilliam Museum)**
Coins

Graduate workshops

HPS History Workshop

Are you wishing for advice on how to write the tricky bit of your argument? Not sure how to write a good introduction? Trying to convert an essay or a chapter into an article? Sign up to share a draft of your next PhD chapter, book chapter, conference paper, journal article or MPhil essay with an audience of friendly HPS postgraduates and postdocs!

The History Workshop is an informal setting to discuss your written works-in-progress on any area of the history of science, medicine and technology, and get feedback from your early-career colleagues. Your paper will be circulated by email before the workshop. We'll then discuss it together over tea and biscuits at **5pm on alternate Wednesdays in Seminar Room 1**.

Sign up now to share your work with this new format of the History Workshop! Please contact Rohan Deb Roy or Caitlin Wylie.

- 12 October **Jenny Bangham:** Human genetics and the blood transfusion services: circulating records, samples and expertise, 1939–1945
- 26 October **Michael Bycroft:** The many roles of material variation in Charles Dufay's mémoires on electricity and phosphorescence
- 9 November **Salim Al-Gailani:** Private science and public morals: the diary of a late-Victorian teratologist
- 23 November **Josh Nall:** Proctor's Mars: new astronomy and new journalism in Britain in the 1870s and 1880s

HPS Philosophy Workshop

The HPS Philosophy Workshop is a fortnightly seminar devoted to the discussion of on-going work by researchers in philosophy. Papers are invited from all graduate students and post-docs: it is a great format for getting some constructive and informal feedback on an essay, PhD chapter or potential article. Papers are circulated by email one week in advance of each meeting – the author will then give a brief synopsis on the day followed by roughly 45 minutes of Q&A.

Meetings take place **every other Wednesday from 1–2pm in Seminar Room 1**. If you would like to present, or have any questions, please contact Emily McTernan.

- 19 October **Anna Alexandrova:** Buyer beware: robustness analyses in theoretical economics
- 2 November **Mark Colyvan:** The ins and outs of mathematical explanation
- 16 November **Emily Thomas:** The equivocation objection to priority monism
- 30 November **Huw Price:** Retrocausality – what would it take?

Graduate Training

Training workshops for the Department's graduate students and postdoctoral researchers are held throughout the academic year. Most, but not all, are on **Fridays at 1pm in Seminar Room 1**. The full programme is available at www.hps.cam.ac.uk/students/training.

Reading and discussion groups

Philosophy of Science Reading Group

We will be reading selected chapters from *Naturalism without Mirrors* by Huw Price (OUP, 2011). Meetings will involve a short presentation by a member of the group followed by a general discussion.

Meetings will take place on **Thursdays at 2pm in Seminar Room 1** and are open to all. Organised by Jonathan Birch and Hasok Chang.

- 6 October Chapter 1, 'Moving the Mirror Aside'
- 13 October Chapter 2, 'Metaphysical Pluralism'
- 20 October Chapter 8, 'Truth as Convenient Friction'
- 27 October Chapter 9, 'Naturalism without Representationalism'
- 3 November Chapter 11, 'Pragmatism, Quasi-Realism and the Global Challenge'
- 10 November Chapter 12, 'The Semantic Foundations of Metaphysics'
- 17 November Chapter 13, 'Metaphysics After Carnap: the Ghost Who Walks?'
- 24 November Chapter 14, 'One Cheer for Representationalism?'

Philosophy of Biology Reading Group

We will be reading *Not by Genes Alone: How Culture Transformed Human Evolution* by Peter J. Richerson and Robert Boyd (University of Chicago Press, 2005).

Meetings will take place on **Fridays at 2pm in the HPS Lodge Seminar Room** and are open to all. Organised by Jonathan Birch.

- 7 October Chapter 1, 'Culture is Essential'
- 14 October Chapter 2, 'Culture Exists'
- 21 October Chapter 3, 'Culture Evolves'
- 28 October Chapter 4, 'Culture Is an Adaptation'
- 4 November Chapter 5, 'Culture Is Maladaptive'
- 11 November Chapter 6, 'Culture and Genes Coevolve'
- 18 November Chapter 7, 'Nothing About Culture Makes Sense Except in the Light of Evolution'
- 25 November Commentaries by Simpson and Beckes, Mameli, Sperber and Cladière, and Shennan (*Biology and Philosophy*, March 2008)

Science and Literature Reading Group

The Growth of the Mind

We meet fortnightly on **Mondays from 7.30 to 9pm in the Godwin Room at Clare College (Old Court)**. Some readings are available online: follow the links at www.hps.cam.ac.uk/seminars.

Organised by Daniel Friesner (Science Museum), Esther Momcilovic (HPS) and Liz Smith (Darwin Correspondence Project). All welcome!

- 17 October Ibn Tufayl, *Hayy Ibn Yaqzan* (12th century). There is an excellent modern translation by Lenn E. Goodman (paperback, Chicago University Press, 2009). You can also use Simon Ockley's 1708 translation.
- 31 October W. Chesselden, 'An Account of Some Observations Made by a Young Gentleman, Who Was Born Blind, or Lost His Sight so Early, That He Had no Remembrance of Ever Having Seen, and Was Couch'd between 13 and 14 Years of Age', *Philosophical Transactions*, Vol. 35, 1727–1728, pp. 447–450.
- Buffon, 'Des sens en général' from his *Histoire naturelle*, Tome 3 (1749). William Smellie's 1781 translation.
- 14 November Charles Darwin, 'A biographical sketch of an infant', *Mind*, Vol. 2, No. 7, Jul. 1877, pp. 285–294.
- Frances Hodgson Burnett, *The One I Knew the Best of All: A Memory of the Mind of a Child* (1893), Chapter 1 (pp. 1–21).
- 28 November Melanie Klein, 'Infantile Anxiety-Situations Reflected in a Work of Art and in the Creative Impulse' (1929), *International Journal of Psycho-Analysis*, Vol. 10, pp. 436–443. Reprinted in *Love, Guilt and Reparation* (1975).
- Jean Piaget, *La représentation du monde chez l'enfant* (1926), translated by Joan and Andrew Tomlinson as *The Child's Conception of the World* (1929), Chapter VII (pp. 207–251).

Astronomical Images Group

These meetings are part of the AHRC project 'Diagrams, Figures and the Transformation of Astronomy, 1450–1650', which analyses the production, function and terminology of early modern astronomical imagery.

Meetings will be held on **Thursdays at 1–2pm in Seminar Room 1**. All are welcome – do please feel free to bring lunch! Email Isla Fay to be added to the mailing list.

- 10 November **Jeanne Peiffer (Centre National de la Recherche Scientifique)**
Diagrams stemming from the Nuremberg environment of Albrecht Dürer
- 24 November **Irina Schmiedel (Bergische Universität Wuppertal)**
Botanical knowledge between science and representation

Twentieth-Century Biology Reading Group

The group will discuss papers relating to the history, philosophy and historiography of 20th-century biology. Articles will be placed well in advance in a box in the Whipple Library.

Meetings are **every other Tuesday from 1–2pm in the Lodge Seminar Room.**

Organised by Dmitriy Myelnikov.

11 October Biological samples, session 1: Anthropological encounters

Warwick Anderson, *The Collectors of Lost Souls: Turning Kuru Scientists into Whitemen* (Baltimore: The Johns Hopkins University Press, 2008).

Introduction (pp. 1–8)

Chapter 4, ‘The Scientist and His Magic’ (pp. 91–115)

Chapter 6, ‘Specimen Days’ (pp. 133–160)

25 October Biological samples, session 2: Human tissues in vitro

Duncan Wilson, *Tissue Culture in Science and Society: The Public Life of a Biological Technique in Twentieth Century Britain* (Basingstoke: Palgrave Macmillan, 2011).

Chapter 4, ‘Converting Human Material into Tissue Culture, c.1910–70’ (pp. 54–69)

Chapter 5, ‘“A Cell is Not an Animal”: Negotiating Species Boundaries in the 1960s and 1970s’ (pp. 70–91)

8 November Images, session 1: Manipulated embryos

Clare Williams, Jenny Kitzinger & Lesley Henderson, ‘Envisaging the Embryo in Stem Cell Research: Rhetorical Strategies and Media Reporting of the Ethical Debates’, *Sociology of Health & Illness* 25 (2003): 793–814.

Lorenzo Beltrame & Silvia Giovanetti, ‘When the Oocyte Becomes an Embryo: The Social Life of an Ambiguous Scientific Image in Italian Newspapers (1996–2007)’, *Nuncius* 24 (2009): 489–507.

22 November Images, session 2: The public life of proteins

Peter Keating & Alberto Cambrosio, ‘Arguing with Images: Pauling’s Theory of Antibody Formation’. In *Visual Cultures of Science: Rethinking Representational Practices in Knowledge Building and Science Communication*, edited by Luc Pauwels (Hanover, New Hampshire & London: Dartmouth College Press, 2006).

Black, Suzanne, ‘Domesticating the Crystal: Sir Lawrence Bragg and the Aesthetics of “X-ray Analysis”’, *Configurations* 13 (2005): 257–282.

Philosophy and History of Physics Reading Group

The Rise of Field Physics

This reading group meets on **Tuesdays, 2.30–3.30pm in Seminar Room 1**. Organised by Hasok Chang, Simon Schaffer, Nazim Bouatta and Jeremy Butterfield.

11 October **Hasok Chang** introduces:

M. Hesse, *Forces and Fields* (London: Thomas Nelson and Sons, 1961), chap 8, 'The Field Theories', 189–225.

18 October **Jeremy Butterfield** introduces:

M. Lange, *Introduction to Philosophy of Physics*, 2002, Chapters 3 and 4.

25 October **Nazim Bouatta** introduces:

Poincaré, *Science and Hypothesis*: Chapter X: The theories of modern physics, 160–182; Chapter XII: Electricity and Optics, 211–224; Chapter XIII: Electrodynamics, 225–244.

1 November **Simon Schaffer** introduces:

James Clerk Maxwell, 'Ether', from *Encyclopaedia Britannica*, reprinted in W.D. Niven, *Scientific papers of James Clerk Maxwell*, 1890, volume 2, 763–75 (copy will be available).

Daniel Siegel, 'Thomson, Maxwell and the universal ether in Victorian physics', in G.N. Canto and M.J.S. Hodge (eds.), *Conceptions of ether* (1981), 239–68 (Whipple Library S3 CAN).

P.M. Harman, *The natural philosophy of James Clerk Maxwell* (1998), section VIII.1, 162–75 (Whipple Library S7 MAX HAR).

8 November TBA

15 November TBA

22 November **Chitra Ramalingam** introduces:

David Gooding, "'Magnetic Curves" and the magnetic field: experiment and representation in the history of a theory', in *The Uses of Experiment: Studies in the Natural Sciences*, ed. David Gooding, Simon Schaffer and Trevor Pinch (Cambridge University Press, 1989), 182–223.

David Gooding, 'Final steps to the field theory: Faraday's study of magnetic phenomena, 1845–1850', *Historical Studies in the Physical Sciences* 11 (1981): 231–275.

29 November TBA

History and Theory Reading Group

Classics in Integrated HPS

In this series of four meetings we explore integrated HPS through classic works in the genre. Integrated HPS includes history of science informed by philosophy of science, philosophy of science informed by history of science, and works that combine these two approaches. We read extracts from four ‘classics’ alongside biographical information about the authors and commentaries by more recent historians and philosophers of science. We ask what kind of integrated HPS the authors practised, why they practised it, and how their work compares to, and contributed to, later work in HPS.

We meet on **alternate Fridays, 2.30pm to 4pm in Seminar Room 1**. Articles will be placed in advance in a History and Theory box in the Whipple. Further details of the readings, including suggested additional readings, will be listed at www.hps.cam.ac.uk/seminars/theory.html. Organised by Minwoo Seo, Michael Bycroft and Hasok Chang.

- 14 October Johannes Kepler, ‘A Defence of Tycho Against Ursus’, and the birth of history and philosophy of science
Selections from Nicholas Jardine, *The Birth of History and Philosophy of Science: Kepler’s ‘A Defence of Tycho Against Ursus’, With Essays on its Provenance and Significance* (Cambridge: Cambridge University Press, 1984).
Nicholas Jardine, ‘The Places of Astronomy in Early-Modern Culture’, *Journal for the History of Astronomy* 29 (1998): 49.
Nicholas Jardine, ‘History of Science Comes of Age’, forthcoming.
- 28 October Edwin Arthur Burt, ‘The Metaphysical Foundations of Modern Physical Science’, and the Scientific Revolution
Selections from Edwin Arthur Burt, *The Metaphysical Foundations of Modern Physical Science: A Historical and Critical Essay* (London: Routledge and Kegan Paul, 1932).
Lorraine Daston, ‘History of Science in an Elegiac Mode: E.A. Burt’s “Metaphysical Foundations of Modern Physical Science” Revisited’, *Isis* 82, no. 3 (1991): 522–531.
Gary Hatfield, ‘Metaphysics and the New Science’, in *Reappraisals of the Scientific Revolution*, edited by David C. Lindberg and Robert S. Westman (Cambridge: Cambridge University Press, 1990), 93–166.
- 11 November Gaston Bachelard, ‘The Formation of the Scientific Mind’, and epistemological breaks
Selections from Gaston Bachelard, *The Formation of the Scientific Mind: A Contribution to a Psychoanalysis of Objective Knowledge*, translated by Mary McAllester Jones (Manchester: Clinamen, 2002).
Christina Chimisso, ‘From Phenomenology to Phenomenotechnique: The Role of Early Twentieth-Century Physics in Gaston Bachelard’s Philosophy’, *Studies in History and Philosophy of Science Part A* 39, no. 3 (September 2008): 384–392.
Stephen Gaukroger, ‘Bachelard and the Problem of Epistemological Analysis’, *Studies in History and Philosophy of Science Part A* 7 (1976): 189–244.
- 25 November Norwood Russell Hanson, ‘Patterns of Discovery’, and the theory-ladenness of observation
Selections from Norwood Russell Hanson, *Patterns of Discovery: An Inquiry into the Conceptual Foundations of Science* (CUP Archive, 1958).
Norwood Russell Hanson, ‘The Irrelevance of History of Science to Philosophy of Science’, *The Journal of Philosophy* 59, no. 21 (1962): 574–586.
Michael Heidelberger, ‘Theory-Ladenness and Scientific Instruments in Experimentation’, in *The Philosophy of Scientific Experimentation*, edited by Hans Radder (Pittsburgh: University of Pittsburgh Press, 2003), 138–151.

Kant Reading Group

In Michaelmas Term, we will read the Analytic of Principles of the *Critique of Pure Reason* (1781/7).

In the Analytic of Principles, Kant develops his theory of schematism which has notoriously given rise to much controversy. This theory, he claims, solves the problem of the application of the categories, the pure concepts of the understanding, to our spatiotemporal intuitions. In the subsequent chapters of the Analytic of Principles, he shows in particular how the categories can be applied to various determinations of time. From these applications, the principles of our thinking can be derived, such as the axioms of intuition, the anticipations of perceptions, the analogies of experience and the postulates of pure thinking in general. Thus, the idea of schematism, which was once depreciated as an obscure element of Kant's theory, could be shown by several commentators to be the completing part of the Transcendental Deduction of the categories.

Meetings are held in the **HPS Lodge, 3.30–5.00pm on Tuesdays**. They begin with a short presentation and are followed by general discussion. All are most welcome. If you have any questions, please feel free to contact Katharina Kraus.

Kant, Immanuel (1781/7, 1998) (CpR) *Critique of Pure Reason*, trans. and ed. P. Guyer and A.W. Wood, Cambridge: CUP.

- 11 October A130/B199 – A139/B178
Introduction + On the schematism of the pure concepts of the understanding – Part I
- 18 October A140/B179 – A147/B187
On the schematism of the pure concepts of the understanding – Part II
- 25 October A148/B187 – A158/B197
The System of Principles of Pure Understanding – First & Second Section
On the supreme principle of all analytic/synthetic judgments
- 1 November A158/B197 – A166/B207
Systematic representation of all synthetic principles of pure understanding
Axioms of Intuition
- 8 November A166/B207 – A176/B218
Anticipations of Perception
- 15 November A176/B218 – A189/B232
First Analogy of Experience
- 22 November A189/B232 – A211/B256
Second Analogy of Experience
- 29 November A211/B256 – A218/B265
Third Analogy of Experience
A218/B265 – A226/B274
The postulates of empirical thinking in general

AD HOC

AD HOC is a history of chemistry reading group based in Cambridge and London. While our main focus is historical, we also consider the philosophical, sociological, public and educational dimensions of chemistry. This term's theme is '**Elements of Controversy**'.

The group meets four times per term, on **Mondays, 5pm–6.30pm in Seminar Room 1**. Readings are available from the Whipple Library, and also circulated via our mailing list. A parallel series of meetings is held in London. For details visit our website, www.hps.cam.ac.uk/adhoc.

Organised by Hasok Chang and Jenny Rampling.

17 October 'Gold and lead' – introduced by **Stephanie Seavers (University College London)** and **Jennifer Rampling (HPS, Cambridge)**

Excerpts from Spike Bucklow, *The Alchemy of Paint: Art, Science and Secrets from the Middle Ages* (London and New York)

31 October 'Chlorine' – introduced by **Ruth Ashbee (University College London)**

R. Ashbee, 'The Discovery of Chlorine', Ch. 1 of H. Chang & C. Jackson (eds.), *An Element of Controversy: The Life of Chlorine in Science, Medicine, Technology and War* (BSHS Monographs), pp. 15–40.

14 November 'Mercury' – introduced by **Andrew Cunningham (HPS, Cambridge)**

Reading to be confirmed.

Thursday 1 December (7pm): 'Is water H₂O?' – lecture by **Hasok Chang (HPS, Cambridge)** at the Department of Chemistry, organised by the Cambridge University Chemical Society

Language groups

Latin Therapy

Latin Therapy will meet on **Fridays in the HPS Lodge from 4–5.30pm**. The first meeting this term will take place on 14 October and the last on 25 November. All levels are welcome and beginners are strongly encouraged to come along. Each week we will cover some introductory grammar, followed by a text suggested by members. The pain of the ablative absolute will be salved with copious tea and biscuits!

More information can be found at our website: www.hps.cam.ac.uk/latintherapy. To be added to the mailing list, or to suggest a text, please contact Susannah Gibson.

Greek Therapy

Greek Therapy meets **every Wednesday during term time in the HPS Lodge from 5.15 to 7.15pm**.

We are an informal group for beginners and for experienced readers of Greek seeking to brush up their skills. The first hour of every session consists of a basic grammar session and reading simple texts, followed by an hour of reading a slightly more advanced text (TBA, but often Plato). For information or to be added to the mailing list, please email Liz Smith.