

HPS&ST Note

June 2016

Introduction

This HPS&ST monthly note is sent direct to about 7,100 individuals who directly or indirectly have expressed an interest in the contribution of history and philosophy of science to theoretical, curricular and pedagogical issues in science teaching, and/or interests in the promotion of innovative and more engaging and effective teaching of the history and philosophy of science. The note is sent on to different international and national HPS lists and science teaching lists.

The note seeks to serve the diverse international community of HPS&ST scholars and teachers by disseminating information about events and publications that connect to HPS&ST concerns.

Contributions to the note (publications, conferences etc.) are welcome and should be sent direct to the editor: Michael R. Matthews, UNSW, m.matthews@unsw.edu.au .

Asian HPS&ST Conference, December 15-18, 2016, Pusan National University, South Korea.

Chairs: Hae-Ae Seo (Biology Education, PNU) & Youngmin Kim (Physics Education, PNU)

*Conference Theme: **Inquiry in Science and in Science Education: Historical, Philosophical and Pedagogical Dimensions***

Pusan National University is in Busan, South Korea's second largest city, located on the southern coast of the country with easy high-speed train and air connection to Seoul. The Conference will open on Thursday evening with a plenary lecture and welcoming reception in the evening and on Friday and Saturday for full day presentations. The Conference will close on Sunday at lunch time and a half-day excursion will be offered in the afternoon. A pre-conference research workshop on HPS and Education themes and methodologies will be organized for graduate students and junior scholars.

Plenary Speakers include:

Darrell P. Rowbottom is Professor and Head of Philosophy at Lingnan University, Hong Kong. He studied physics as an undergraduate (at Bristol), and history and philosophy of science (at the LSE) and philosophy (at Durham) thereafter. He subsequently held posts at several universities in the UK, including Bristol, Edinburgh, and Oxford. His current research focuses on general issues in the philosophy of science (e.g. scientific method, scientific realism, and scientific progress) and the philosophy of probability (e.g. intersubjective probability and measurement paradoxes). He also has interests in epistemology, metaphysics, and the philosophy of education.



See:

<http://www.ln.edu.hk/philoso/staff/rowbottom/>

Proposals for individual papers (1,000 words) and symposia are due by: **September 1, 2016**.

Inquiries to: Hae-Ae Seo (haseo@pusan.ac.kr)

Conference website: <http://asiahpsst2016.bolog.com/welcome.php>

Brief Opinions and Suggestions: Teach students the biology of their time

In order to make better educational use of the wide geographical and disciplinary reach of this HPS&ST Note, invitations are extended for readers to contribute brief opinion pieces or suggestions about any aspect of the past, present or future of HPS&ST studies.

Brief pieces, to 1,200 words, can be sent direct to editor. Ideally they might be pieces that are already on the web, in which case a few sentences introduction, with link to web site can be sent.

I am very pleased to be able to begin this series with the first such contribution as follows:

Gregory Radick, University of Leeds:

Teach students the biology of their time

An experiment in genetics education reveals how Mendel's legacy holds back the teaching of science



See:

<http://www.nature.com/news/teach-students-the-biology-of-their-time-1.19936>

Thanks to Springer Nature for allowing wider distribution of this article and link.

Vale: Andreas (Andrew) Quale 1938-2016

[Svein Sjøberg, professor (em) in science education, Oslo University, Norway]

Andrew Quale has passed away, at the age of 78, after having fought cancer for the past ten years. His first name was Andreas in Norwegian, but since he spent formative years in Australia, where his father worked as an engineer for large post-war hydropower construction works, most colleagues abroad know him under the name Andrew.

I came to know Andrew when I was in the final year of my physics class at school. He was five years older than me, and a student at the University in Oslo. He came as a substitute teacher when our physics teacher was on sick leave. I loved physics from my reading of many books, and had at a young age decided that I would become physicist myself. But I found school physics increasingly dull and boring, overloaded with firm facts, and always giving correct answers to questions nobody had asked.



The few lessons we had with Andrew restored my interest in physics as an intellectual as well as philosophical challenge. So I stuck to my plans to study physics, assuming that the physics I would meet at the university would be full of fascination and challenging ideas and with social, cultural and philosophical perspectives and implications.

(These expectations were not met, actually, but that is another story. But I became a physicist anyway.)

Andrew's PhD from 1974 was "On the Dynamics of Gravity and Matter Fields", related to Einstein's theory of general relativity. For many, this sounds very narrow and special. But when he talked about it, he managed to present the physics and its implications in thought-provoking ways. Andrew had also studied Russian, and had tough discussion with Soviet scholars. He told us about the reception of the relativity theory in the Soviet Union, and the many phases in the responses. Some issues were obviously related to the facts that Einstein was German, and also a Jew. More important was the alleged conflict between Einstein's theory and Marxism. Andrew's presentations of conflict like these placed physics as something different than the textbook version: sterile, clean and objective, and outside society, history, culture and conflicts.

Such experiences were probably also formative for Andrew when he much later became interested in constructivism, and even wrote a book on *Radical Constructivism: A Relativist*

Epistemic Approach to Science Education (2008). He insisted on being a constructivist, but he was also a person with sense for rationality and indeed objectivity. He was also an atheist and humanist, but with the greatest respect for all sorts of beliefs.

Andrew did not pursue a further career in physics research, but went into teaching. He held several positions, and also widened his field to include the use of information technology at a very early stage of this development. When he came into teacher education at Oslo University in 1995, we became colleagues until he retired. After that we were even closer friends.

Andrew was a real renaissance person, with an open mind and with nearly encyclopedic repertoire of science, culture, philosophy, art and music. When he passed away after years' of struggle against his cancer, he was working with new articles, and he studied Italian language. He had an urge to see his physics in a wider context, as a cultural product of the human mind. These values were also entrenched in his teaching and his relationship with colleagues and other people. Being tall and strong, he also talked with a strong voice. But he was nevertheless a good listener, always interested in other people's experiences and points of view. He made friends everywhere.

In addition to his impact on the local, Norwegian scene, he became an active participant in international fora. He was particularly at home in the environment related to HPS&ST, for history, philosophy, sociology and science teaching, where he met colleagues with similar interests, values and commitments. He had close friends in many countries. Many will remember Andrew as a most interesting, kind and always engaged person. He will be missed.

[Michael R. Matthews, School of Education, UNSW, Australia]

It was a great pleasure for me and for many other international scholars to meet Andreas at numerous biennial IHPST conferences where he was always an engaging and keenly interested contributor to the programme and to conference social life. We talked education, philosophy and about his high school experience in Australia, where he came with his family in the 1950s and was a border at Canberra Grammar School. Canberra was the nation's capital but then not much more than a big country town; in a wide, brown, flat, monolingual land. He found that 'football' was played with an oval ball, it was called 'rugby', and although a big boy, he never mastered the techniques of this foreign game. The contrast with his native mountainous, multilingual, soccer-playing Norway could not have been more stark.

And when he came to Australia for his school reunion we had most enjoyable meals and conversations shared with fellow IHPST and UNSW colleague Peter Slezak. Both of us shared Andreas' views on the need for education to convey something of the 'big picture' of science and its connections to culture, society and philosophy; and for science education to foster a scientific outlook or orientation to natural and social questions. And we agreed that for all of this, teachers having knowledge of and interest in HPS was essential. We had of course, animated discussion about constructivism, a topic on which Peter and I had opposite opinions to Andreas, some of mine having been laid out in a critical review of his *Radical Constructivism* book. But such scholarly disagreement did not intrude on our friendship and warm email exchanges.

During my long period of editorship of *Science & Education* many authors benefited from Andreas' anonymous informed and diligent reviewing of their manuscripts, all of which were done on time and with no need for 'reminders'. And I was pleased to be able to publish three of Andreas' own papers in the journal:

- Quale, A.: 2002, 'The Role of Metaphor in Scientific Epistemology: A Constructivist Perspective and Consequences for Science Education', *Science & Education* 11(5), 423-441.
- Quale, A.: 2007, 'Radical Constructivism and the Sin of Relativism', *Science & Education* 16(3-5), 231-266.
- Quale, A.: 2011, 'On the Role of Mathematics in Physics', *Science & Education* 20(7-8), 609-624.

Recent HPS&ST -Related Research Articles

- Boyer, T. H. (2016), Classical Zero-Point Radiation and Relativity: The Problem of Atomic Collapse Revisited. *Foundations of Physics*, 1-11. doi: 10.1007/s10701-016-0008-9 online first
- Calude, S. C., Longo, G. (2016). The Deluge of Spurious Correlations in Big Data. *Foundations of Science*, 1-18. doi: 10.1007/s10699-016-9489-4 Online first.
- Capobianco, G, Enea, M.R., Ferraro, G. (2016). Geometry and analysis in Euler's integral Calculus. *Archive for History of Exact Sciences*, 1-38. doi: 10.1007/s00407-016-0179-y Online first.
- Christidou, V., Bonoti, F., Kontopoulou, A. (2016). American and Greek Children's Visual Images of Scientists: Enduring or Fading Stereotypes? *Science & Education*, 1-26. doi: 10.1007/s11191-016-9832-8 online first
- Cunha, D. S. (2016). Interview with Shahid Rahman. *Kayros. Journal of Philosophy & Science*. 15(1), 85-96. Retrieved at: <http://tinyurl.com/ze3medf>
- Franklin, A. (2016). Physics Textbooks Don't Always Tell the Truth. *Physics in Perspective*, 18(1), 3-57. doi: 10.1007/s00016-016-0178-z
- García-Carmona, A., Díaz, J. A. (2016). Learning About the Nature of Science Using Newspaper Articles with Scientific Content. *Science & Education*, 1-24. doi: 10.1007/s11191-016-9831-9 online first
- Gómez, P. J. S. (2016). Students' Ideas and Radical Constructivism. *Science & Education*, 1-22. doi: 10.1007/s11191-016-9829-3 Online first
- Kampourakis, K. (2016). The "general aspects" conceptualization as a pragmatic and effective means to introducing students to nature of science. *Journal of Research in Science Teaching*, 53(5), 667- 682. doi: 10.1002/tea.21305
- Konnemann, C., Asshoff, R., Hammann, M. (2016) Insights Into the Diversity of Attitudes Concerning Evolution and Creation: A Multidimensional Approach, *Science Education*, 1-33. doi: 10.1002/sce.21226 online first
- Levine, J. (2016). The history of time and frequency from antiquity to the present day. *The European Physical Journal H*, 41(1), 1-67. doi: 10.1140/epjh/e2016-70004-3
- Malik, S. (2016). Observation Versus Experiment: An Adequate Framework for Analysing Scientific Experimentation? *Journal for General Philosophy of Science*, 1-25. doi: 10.1007/s10838-016-9335-y

- Rabi, Lior (2016). Ortega y Gasset on Georg Cantor's Theory of Transfinite Numbers. *Kayros. Journal of Philosophy & Science*. 15(1), 46-70. Retrieved at <http://tinyurl.com/ze3medf>
- Ramnaraina, U. D., Chanetsa, T. (2016). An analysis of South African Grade 9 natural sciences textbooks for their representation of nature of science. *International Journal of Science Education*, 38(6), 922-933. doi: 10.1080/09500693.2016.1167985
- Schinckus, C. (2016). From Cubist Simultaneity to Quantum Complementarity. *Foundations of Science*, 1-18. Doi: 10.1007/s10699-016-9494-7 online first.
- Schizas, D., Psillos, D., Stamou, G. (2016). Nature of Science or Nature of the Sciences? *Science Education*, 1-28. doi: 10.1002/sce.21216 online first
- Stoilescu, D. (2016). Aspects of theories, frameworks and paradigms in mathematics education research. *European Journal of Science And Mathematics Education*, 4(2), 140-154
- Symeonidou, I. (2016). Anamorphic Experiences in 3D Space: Shadows, Projections and Other Optical Illusions. *Nexus Network Journal*, 1-19. doi: 10.1007/s00004-016-0298-4 Online first.
- Weinstein, M. (2016). The periodic table and the model of emerging truth. *Foundations of Chemistry*, 1-18. doi: 10.1007/s10698-016-9252-5 Online first.
- Wray, K. B. (2016). Method and Continuity in Science. *Journal for General Philosophy of Science*, 1-13. doi: 10.1007/s10838-016-9338-8 online first

Recent HPS&ST Related Books

Apel, Thomas A. (2016). *Feverish Bodies, Enlightened Minds: Science and the Yellow Fever Controversy in the Early American Republic*. Stanford, CA: Stanford University Press.

“From 1793 to 1805, yellow fever devastated U.S. port cities in a series of terrifying epidemics. The search for the cause and prevention of the disease involved many prominent American intellectuals, including Noah Webster and Benjamin Rush. This investigation produced one of the most substantial and innovative outpourings of scientific thought in early American history. But it also led to a heated and divisive debate—both political and theological—around the place of science in American society.

Feverish Bodies, Enlightened Minds opens an important window onto the conduct of scientific inquiry in the early American republic. The debate between "contagionists," who thought the disease was imported, and "localists," who thought it came from domestic sources, reflected contemporary beliefs about God and creation, the capacities of the human mind, and even the appropriate direction of the new nation. Through this thoughtful investigation of the yellow fever epidemic and engaging examination of natural science in early America, Thomas Apel demonstrates that the scientific imaginations of early republicans were far broader than historians have realized: in order to understand their science, we must understand their ideas about God.” (From the Publisher)

More information at: <http://www.sup.org/books/title/?id=26338>

Araujo, Saulo de Freitas (2016). *Wundt and the Philosophical Foundations of Psychology: A Reappraisal*. Dordrecht, Netherlands: Springer.

“This book reassesses the seminal work of Wilhelm Wundt by discussing the history and philosophy of psychology. It traces the pioneering theorist’s intellectual development and the evolution of psychology throughout his career. The author draws on little-known sources to situate psychological concepts in Wundt’s philosophical thought and address common myths and misconceptions relating to Wundt’s ideas. The ideas presented in this book show why Wundt’s work remains relevant in this era of ongoing mind/brain debate and interest continues in the links between psychology and philosophy.

Wundt and the Philosophical Foundations of Psychology is a valuable resource for researchers, professors, and graduate students in cognitive and related psychology and philosophy disciplines.” (From the Publisher)

More information at: <http://www.springer.com/us/book/9783319266343#aboutBook>

Armstrong, D. M. (2016). *What is a Law of Nature?* Cambridge, MA: Cambridge University Press.

“First published in 1985, D. M. Armstrong's original work on what laws of nature are has continued to be influential in the areas of metaphysics and philosophy of science. Presenting a definitive attack on the sceptical Humean view, that laws are no more than a regularity of coincidence between stances of properties, Armstrong establishes his own theory and defends it concisely and systematically against objections. Presented in a fresh twenty-first-century series livery, and including a specially commissioned preface written by Marc Lange, illuminating its continuing importance and relevance to philosophical enquiry, this influential work is available for a new generation of readers.” (From the Publisher)

More information at: <http://tinyurl.com/hrwlkex>

Arnold, David (2016). *Toxic Histories: Poison and Pollution in Modern India*. Cambridge, MA: Cambridge University Press.

“In this meticulous toxicological assay of British India, David Arnold challenges us to rethink how we draw boundaries between the therapeutic and the poisonous, between purity and danger, and between European and Indigenous. Colonialism is refigured as the governance of poisons - and modernity turns into the titrating of toxicities. A revealing forensic study of poison as substance and metaphor under colonial rule, *Toxic Histories* also shows us how - and why - toxicity became a concept intrinsic to India's modernity. Thus Arnold traces the sad genealogy of our poisoned world.” Warwick Anderson, University of Sydney

“The idea of poison lurks below the surface of much of Indian history but it has rarely been investigated in its own right. In this path-breaking book, David Arnold demonstrates the importance of doing so. Exploring the practical uses and the ideological significance of poisons, Arnold shows how narratives of toxicity became central to the construction and evaluation of India's modernity. Brimming with fascinating insights, there is scarcely any aspect of Indian history which is not illuminated by this book.” Mark Harrison, University of Oxford

“Against the vast backdrop of India's pre-, colonial and post-colonial history, the eminent historian David Arnold asks the provocative question: do different places have their own toxic histories? In an outstanding display of scholarship, in equal measures subtle and sophisticated, full of striking and illuminating historical examples, and written with a clear

sense of how his analysis might engage with critical understandings of our own toxic present, Arnold's answer is a satisfyingly complex 'yes'." Ian Burney, University of Manchester

More information at: <http://tinyurl.com/hczk6h9>

Calaprice, Alice, Kennefick, Daniel, Schulmann, Robert (2016). *An Einstein Encyclopedia*. Princeton, NJ: Princeton University Press.

“This is the single most complete guide to Albert Einstein’s life and work for students, researchers, and browsers alike. Written by three leading Einstein scholars who draw on their combined wealth of expertise gained during their work on the Collected Papers of Albert Einstein, this authoritative and accessible reference features more than one hundred entries and is divided into three parts covering the personal, scientific, and public spheres of Einstein’s life.

An Einstein Encyclopedia contains entries on Einstein’s birth and death, family and romantic relationships, honors and awards, educational institutions where he studied and worked, citizenships and immigration to America, hobbies and travels, plus the people he befriended and the history of his archives and the Einstein Papers Project. Entries on Einstein’s scientific theories provide useful background and context, along with details about his assistants, collaborators, and rivals, as well as physics concepts related to his work. Coverage of Einstein’s role in public life includes entries on his Jewish identity, humanitarian and civil rights involvements, political and educational philosophies, religion, and more.

Commemorating the hundredth anniversary of the theory of general relativity, An Einstein Encyclopedia also includes a chronology of Einstein’s life and appendixes that provide information for further reading and research, including an annotated list of a selection of Einstein’s publications and a review of selected books about Einstein.

More than 100 entries cover the rich details of Einstein’s personal, professional, and public life

Authoritative entries explain Einstein’s family relationships, scientific achievements, political activities, religious views, and more

More than 40 illustrations include photos of Einstein and his circle plus archival materials
A chronology of Einstein’s life, appendixes, and suggestions for further reading provide essential details for further research” (From the Publisher)

More information at: <http://press.princeton.edu/titles/10557.html>

Engel, Andreas K., Friston, Karl J., Kragic, Danica (Eds.) (2016). *The Pragmatic Turn: Toward Action-Oriented Views in Cognitive Science*. Cambridge, MA: The MIT Press

“Cognitive science is experiencing a pragmatic turn away from the traditional representation-centered framework toward a view that focuses on understanding cognition as “enactive.” This enactive view holds that cognition does not produce models of the world but rather subserves action as it is grounded in sensorimotor skills. In this volume, experts from cognitive science, neuroscience, psychology, robotics, and philosophy of mind assess the foundations and implications of a novel action-oriented view of cognition.

Their contributions and supporting experimental evidence show that an enactive approach to cognitive science enables strong conceptual advances, and the chapters explore key concepts for this new model of cognition. The contributors discuss the implications of an enactive approach for cognitive development; action-oriented models of cognitive processing; action-oriented understandings of consciousness and experience; and the accompanying paradigm shifts in the fields of philosophy, brain science, robotics, and psychology.” (From the Publisher)

More information at: <https://mitpress.mit.edu/books/pragmatic-turn>

Fleming, James Rodger (2016). *Inventing Atmospheric Science: Bjerknes, Rossby, Wexler, and the Foundations of Modern Meteorology*. Cambridge, MA: The MIT Press

“The goal of meteorology is to portray everything atmospheric, everywhere, always,” declared John Bellamy and Harry Wexler in 1960, soon after the successful launch of TIROS 1, the first weather satellite. Throughout the twentieth century, meteorological researchers have had global ambitions, incorporating technological advances into their scientific study as they worked to link theory with practice. Wireless telegraphy, radio, aviation, nuclear tracers, rockets, digital computers, and Earth-orbiting satellites opened up entirely new research horizons for meteorologists. In this book, James Fleming charts the emergence of the interdisciplinary field of atmospheric science through the lives and careers of three key figures: Vilhelm Bjerknes (1862–1951), Carl-Gustaf Rossby (1898–1957), and Harry Wexler (1911–1962).

In the early twentieth century, Bjerknes worked to put meteorology on solid observational and theoretical foundations. His younger colleague, the innovative and influential Rossby, built the first graduate program in meteorology (at MIT), trained aviation cadets during World War II, and was a pioneer in numerical weather prediction and atmospheric chemistry. Wexler, one of Rossby’s best students, became head of research at the U.S. Weather Bureau, where he developed new technologies from radar and rockets to computers and satellites, conducted research on the Antarctic ice sheet, and established carbon dioxide measurements at the Mauna Loa Observatory in Hawaii. He was also the first meteorologist to fly into a hurricane—an experience he chose never to repeat.

Fleming maps both the ambitions of an evolving field and the constraints that checked them—war, bureaucracy, economic downturns, and, most important, the ultimate realization (prompted by the formulation of chaos theory in the 1960s by Edward Lorenz) that perfectly accurate measurements and forecasts would never be possible.” (From the publisher)

More information at: <https://mitpress.mit.edu/atmospheric-science>

Hedesan, Georgiana D. (2016). *An Alchemical Quest for Universal Knowledge: The ‘Christian Philosophy’ of Jan Baptist Van Helmont (1579-1644)*. Abingdon, UK: Routledge.

“History of science credits the Flemish physician, alchemist and philosopher Jan Baptist Van Helmont (1579-1644) for his contributions to the development of chemistry and medicine. Yet, as this book makes clear, focussing on Van Helmont’s impact on modern science does not do justice to the complexity of his thought or to his influence on successive generations of intellectuals like Robert Boyle or Gottfried Leibniz.

Revealing Van Helmont as an original thinker who sought to produce a post-Scholastic synthesis of religion and natural philosophy, Georgiana Hedesan reconstructs his ambitious quest for universal knowledge as it emerges from the text of the *Ortus medicinae* (1648). Published after Van Helmont’s death by his son, the work can best be understood as a compilation of finished and unfinished treatises, the historical product of a life unsettled by religious persecution and personal misfortune. The present book provides a coherent account of Van Helmont’s philosophy by analysing its main tenets.” (From the Publisher)

More information at: <http://tinyurl.com/hp4q4e9>

Helfand, David J. (2016). *A Survival Guide to the Misinformation Age: Scientific Habits of Mind*. New York, NY: Columbia University Press.

“We live in the Information Age, with billions of bytes of data just two swipes away. Yet how much of this is mis- or even disinformation? A lot of it is, and your search engine can't tell the difference. As a result, an avalanche of misinformation threatens to overwhelm the discourse we so desperately need to address complex social problems such as climate change, the food and water crises, biodiversity collapse, and emerging threats to public health. This book provides an inoculation against the misinformation epidemic by cultivating scientific habits of mind. Anyone can do it—indeed, everyone must do it if our species is to survive on this crowded and finite planet.

This survival guide supplies an essential set of apps for the prefrontal cortex while making science both accessible and entertaining. It will dissolve your fear of numbers, demystify graphs, and elucidate the key concepts of probability, all while celebrating the precise use of language and logic. David Helfand, one of our nation's leading astronomers and science educators, has taught scientific habits of mind to generations in the classroom, where he continues to wage a provocative battle against sloppy thinking and the encroachment of misinformation.” (From the Publisher)

More information at: <http://cup.columbia.edu/book/a-survival-guide-to-the-misinformation-age/9780231168724>

Hochadel, Oliver, Nieto-Galan, Agustí (2016). *Barcelona: An Urban History of Science and Modernity, 1888–1929*. Abingdon, UK: Routledge.

“The four decades between the two Universal Exhibitions of 1888 and 1929 were formative in the creation of modern Barcelona. Architecture and art blossomed in the work of Antoni Gaudi- and many others. At the same time, social unrest tore the city apart. Topics such as art nouveau and anarchism have attracted the attention of numerous historians. Yet the crucial role of science, technology and medicine in the cultural makeup of the city has been largely ignored. The ten articles of this book recover the richness and complexity of the scientific culture of end of the century Barcelona. The authors explore a broad range of topics: zoological gardens, natural history museums, amusement parks, new medical specialities, the scientific practices of anarchists and spiritists, the medical geography of the urban underworld, early mass media, domestic electricity and astronomical observatories. They pay attention to the agenda of the bourgeois elites but also to hitherto neglected actors: users of electric technologies and radio amateurs, patients in clinics and dispensaries, collectors and visitors of museums, working class audiences of public talks and female mediums. Science, technology and medicine served to exert social control but also to voice social critique. Barcelona: An urban history of science and modernity (1888-1929) shows that the city around 1900 was both a creator and facilitator of knowledge but also a space substantially transformed by the appropriation of this knowledge by its unruly citizens.” (From the Publisher)

More information at: <http://tinyurl.com/jc2eq3n>

Horwich, Paul (2016). *Probability and Evidence*. Cambridge, MA: Cambridge University Press.

“In this influential study of central issues in the philosophy of science, Paul Horwich elaborates on an important conception of probability, diagnosing the failure of previous attempts to resolve these issues as stemming from a too-rigid conception of belief. Adopting a Bayesian strategy, he argues for a probabilistic approach, yielding a more complete

understanding of the characteristics of scientific reasoning and methodology. Presented in a fresh twenty-first-century series livery, and including a specially commissioned preface written by Colin Howson, illuminating its enduring importance and relevance to philosophical enquiry, this engaging work has been revived for a new generation of readers.” (From the Publisher)

More information at: <http://tinyurl.com/jh8jsau>

Mukherjee, Siddhartha (2016). *The Gene: An Intimate History*. London, UK: Simon & Shuster.

“From the Pulitzer Prize-winning, bestselling author of *The Emperor of All Maladies*—a magnificent history of the gene and a response to the defining question of the future: What becomes of being human when we learn to “read” and “write” our own genetic information? Siddhartha Mukherjee has written a biography of the gene as deft, brilliant, and illuminating as his extraordinarily successful biography of cancer. Weaving science, social history, and personal narrative to tell us the story of one of the most important conceptual breakthroughs of modern times, Mukherjee animates the quest to understand human heredity and its surprising influence on our lives, personalities, identities, fates, and choices.

Throughout the narrative, the story of Mukherjee’s own family—with its tragic and bewildering history of mental illness—cuts like a bright, red line, reminding us of the many questions that hang over our ability to translate the science of genetics from the laboratory to the real world. In superb prose and with an instinct for the dramatic scene, he describes the centuries of research and experimentation—from Aristotle and Pythagoras to Mendel and Darwin, from Boveri and Morgan to Crick, Watson and Franklin, all the way through the revolutionary twenty-first century innovators who mapped the human genome.

As *The New Yorker* said of *The Emperor of All Maladies*, “It’s hard to think of many books for a general audience that have rendered any area of modern science and technology with such intelligence, accessibility, and compassion...An extraordinary achievement.” Riveting, revelatory, and magisterial history of a scientific idea coming to life, and an essential preparation for the moral complexity introduced by our ability to create or “write” the human genome, *The Gene* is a must-read for everyone concerned about the definition and future of humanity. This is the most crucial science of our time, intimately explained by a master.” (From the publisher)

More information at: <http://www.thegenebook.com/>

Pritchard, Duncan (2016). *Epistemic Angst: Radical Skepticism and the Groundlessness of Our Believing*. Princeton, NJ: Princeton University Press.

“Epistemic Angst offers a completely new solution to the ancient philosophical problem of radical skepticism—the challenge of explaining how it is possible to have knowledge of a world external to us.

Duncan Pritchard argues that the key to resolving this puzzle is to realize that it is composed of two logically distinct problems, each requiring its own solution. He then puts forward solutions to both problems. To that end, he offers a new reading of Wittgenstein’s account of the structure of rational evaluation and demonstrates how this provides an elegant solution to one aspect of the skeptical problem. Pritchard also revisits the epistemological disjunctivist proposal that he developed in previous work and shows how it can effectively handle the other aspect of the problem. Finally, he argues that these two antiskeptical positions, while superficially in tension with each other, are not only compatible but also mutually supporting. The result is a comprehensive and distinctive resolution to the problem of radical skepticism, one that challenges many assumptions in contemporary epistemology.” (From the Publisher)

More information at: <http://press.princeton.edu/titles/10636.html>

Wittner, D. G., Brown, P. C. (Eds) (2016). *Science, Technology, and Medicine in the Modern Japanese Empire*. Abingdon, UK: Routledge

“Science, technology, and medicine all contributed to the emerging modern Japanese empire and conditioned key elements of post-war development. As the only emerging non-Western country that was a colonial power in its own right, Japan utilized these fields not only to define itself as racially different from other Asian countries and thus justify its imperialist activities, but also to position itself within the civilized and enlightened world with the advantages of modern science, technologies, and medicine.

This book explores the ways in which scientists, engineers and physicians worked directly and indirectly to support the creation of a new Japanese empire, focussing on the eve of World War I and linking their efforts to later post-war developments. By claiming status as a modern, internationally-engaged country, the Japanese government was faced with having to control pathogens that might otherwise not have threatened the nation. Through the use of traditional and innovative techniques, this volume shows how the government was able to fulfil the state’s responsibility to protect society to varying degrees. The contributors push the field of the history of science, technology and medicine in Japan in new directions, raising questions about the definitions of diseases, the false starts in advancing knowledge, and highlighting the very human nature of fields which, on the surface, seem to non-specialists to be highly rational.

Challenging older interpretative tendencies, this book highlights the vigour of the field and the potential for future development. Therefore, it will be of huge interest to students and scholars of Japanese history, Asian history, the history of science and technology and the history of medicine.” (From the Publisher)

More information at: <http://tinyurl.com/zawefse>

Stern, Fritz (2016). *Einstein's German World*. Princeton, NJ: Princeton University Press.

“The French political philosopher Raymond Aron once observed that the twentieth century "could have been Germany's century." In 1900, the country was Europe's preeminent power, its material strength and strident militaristic ethos apparently balanced by a vital culture and extraordinary scientific achievement. It was poised to achieve greatness. In *Einstein's German World*, the eminent historian Fritz Stern explores the ambiguous promise of Germany before Hitler, as well as its horrifying decline into moral nihilism under Nazi rule, and aspects of its remarkable recovery since World War II. He does so by gracefully blending history and biography in a sequence of finely drawn studies of Germany's great scientists and of German-Jewish relations before and during Hitler's regime.

Stern's central chapter traces the complex friendship of Albert Einstein and the Nobel Prize-winning chemist Fritz Haber, contrasting their responses to German life and to their Jewish heritage. Haber, a convert to Christianity and a firm German patriot until the rise of the Nazis; Einstein, a committed internationalist and pacifist, and a proud though secular Jew. Other chapters, also based on new archival sources, consider the turbulent and interrelated careers of the physicist Max Planck, an austere and powerful figure who helped to make Berlin a happy, productive place for Einstein and other legendary scientists; of Paul Ehrlich, the founder of chemotherapy; of Walther Rathenau, the German-Jewish industrialist and statesman tragically

assassinated in 1922; and of Chaim Weizmann, chemist, Zionist, and first president of Israel, whose close relations with his German colleagues is here for the first time recounted. Stern examines the still controversial way that historians have dealt with World War I and Germans have dealt with their nation's defeat, and he analyzes the conflicts over the interpretations of Germany's past that persist to this day. He also writes movingly about the psychic cost of Germany's reunification in 1990, the reconciliation between Germany and Poland, and the challenges and prospects facing Germany today.

At once historical and personal, provocative and accessible, Einstein's German World illuminates the issues that made Germany's and Europe's past and present so important in a tumultuous century of creativity and violence.”

More information at: <http://press.princeton.edu/titles/10733.html>

Coming HPS&ST-Related Conferences

July 3-5, 2016, Sixth Integrated History and Philosophy of Science conference (&HPS6)

Details at: <https://philosophyofsciencenetwork.wordpress.com/hps6/>

July 8-9, 2016, ‘Representations of Nature(s), Humans and God(s) in Literature’, International Commission on Science and Literature DHST/IUHPST Hermoupolis, Syros Island, Greece.

Details from: George Vlahakis gvlahakis@yahoo.com

July 10-15, 2016, Second World Conference on Physics Education, São Paulo, Brazil.

Details at: <http://www.wcpe2016.org/en/>

July 13-15, 2016, Science in Public 2016, University of Kent, Canterbury, UK

Details at: <http://scienceinpublic.org/science-in-public-2016/>

July 16-18, 2016, 18th UK-European Foundations of Physics Conference

Details at: <http://www.lse.ac.uk/philosophy/blog/2015/10/01/foundations-2016/>

July 18-22, 2016, History and Pedagogy of Mathematics, Montpellier, France

Details at: <http://hpm2016.sciencesconf.org/resource/page/id/2>

July 26-30, 2016, 43rd ICOHTEC meeting: Technology, Innovation, and Sustainability: Historical and Contemporary Narratives. Porto, Portugal

Details at: <http://www.icohtec.org/annual-meeting-2016-cfp.html>

August 1-4, International Society for the Philosophy of Chemistry, Conference, Boca Raton, Florida, USA

Details at: <https://sites.google.com/site/ispc2016/program>

August 10-13, 2016, Annual Meeting of the Cognitive Science Society, Philadelphia, MA, USA

Details at: <http://cognitivesciencesociety.org/conference2016/index.html>

August 22-25, 2016, 1st European IHPST Regional Conference, Flensburg, Germany

Details at:

http://ihpst.net/content.aspx?page_id=22&club_id=360747&module_id=189361

August 26-28, 2016, International Conference of East-Asian Association for Science Education, Tokyo, Japan.

Details at: <http://ease2016tokyo.jp/>

September 1-2, 2016, Teaching & Learning in Early Modern England: Skills & Knowledge in Practice, University of Cambridge, Cambridge, UK.

September 5-7, 2016, European Physical Society, *2nd International Conference on the History of Physics*, Pöllau Castle, Pöllau, Austria.

Abstract submission deadline: 28 April 2016

- Details at: www.historyofphysics.org
- September 16-17, 2016, Mathematical Biography: A MacTutor Celebration, St Andrews University, Scotland
Details at: <http://www.mcs.st-and.ac.uk/mathbiog/>
- September 19-23, University of Copenhagen, Graduate HPS&ST course
Details at: www.ind.ku.dk/hpscouse
And from: Ricardo Karam (ricardo.karam@ind.ku.dk).
- September 22-23, 2016, Philosophy of Scientific Experimentation 5(PSX5), University of Belgrade, Belgrade, Serbia
More information at: <http://philsci.org/images/docs/flyers/Flyer.pdf>
- September 22-24, 2016, The 7th International Conference of the European Society for the History of Science (ESHS), Prague
Details at: <http://www.7eshs2016.cz>
- October 3-7, 2016, XII International Ontology Congress, San Sebastian, Spain
Submissions by July 15. Details at: www.ontologia.net
- October 26-28, 2016, Conference on science and democracy, Pisa, Italy
Details at: <http://iasc.me/2016-conference/>
- October 26-28, 2016, Nature of Science Symposium, Limerick, Ireland
Details at: LimerickNOS2016@gmail.com
- October 28, 2016, Science and Religion in Education Conference, Oxford, UK
Details at: <http://www.faradayschools.com/events/conference/>
- October 28-29, 2016, 32nd Boulder Conference on the History and Philosophy of Science “Gravity: Its History and Philosophy”
Deadline for Submission: August 1, 2016.
Contact: Allan Franklin Allan.Franklin@colorado.edu
- November 5, 2016, Leibniz: Legacy and Impact, Manchester Metropolitan University, UK
Abstract deadline: February 28.
Details at: <http://leibniz-translations.com/leibniz2016.htm>
- November 14-15, Symposium: The Dilemmas of Upright Scientists, Israel, Tel-Aviv University
Inquiries to: Yuliana Litov, ylitov@tauex.tau.ac.il
- November 27-27, 1st Inter-regional Research Conference on Science and Mathematics Education: Interfacing Arab and European Science and Mathematics Education Research, American University of Beirut, Beirut, Lebanon
Details at: <http://www.aub.edu.lb/fas/smec/Pages/1stInter-RegionalConference.aspx>
- December, 14-16, 2016, Third Lisbon International Conference on Philosophy of Science: Contemporary Issues, Portugal, Lisbon University
Details at: <http://lisbonicpos.campus.ciencias.ulisboa.pt/>
- December, 15-18, 2016, 3rd Asian HPS&ST Conference, Pusan National University, South Korea.
Inquiries to: Hwe-Ae Seo, haseo@pusan.ac.kr
- January 5-8, 2017, 131th Annual Meeting of the American Historical Association, Denver, Colorado, USA.
Details at: <http://historians.org/annual-meeting/future-meetings>
- February 16-20, 2017, AAAS Annual Meeting, Boston, USA
Details at: <https://aaas.confex.com/aaas/2017/cfp.cgi>
- March 24-25, 2017, Biodiversity and its Histories, University of Cambridge
Deadline for submission: 1 September 2016
Details at: <http://philsci.org/images/docs/flyers/CFP.pdf>
- July 4-7, 2017, 14th IHPST International Biennial Conference, Ankara, Turkey.

Conference Chairs Mehmet Fatih Taşar [mftasar@gazi.edu.tr] & Gultekin Cakmakci [cakmakci@hacettepe.edu.tr]

Details at: <http://ihpst.net/>

July 16-21, 2017, International Society for the History, Philosophy, and Social Studies of Biology (ISHPSSB) 2017 Meeting, São Paulo, Brazil.

Details at: <http://www.ishpssb.org/announcements/148-ishpssb-2017-meeting>

July 23-29, 2017, 25th International Congress of History of Science, and Technology (ICHST), Rio de Janeiro, Brazil.

Details at: <http://www.ichst2017.sbhc.org.br/site/capa>

September 7-10, 2017, 8th Tensions of Europe Conference Athens, Greece.

Details at: <http://8toe2017.phs.uoa.gr/>