HPS&ST Note

September 2018

Introduction

This HPS&ST monthly note is sent direct to about 7,450 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 international and national science teaching lists. In print or electronic form it has been published for 20+ years.

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 concerns of the HPS&ST community.

Contributions to the note (publications, conferences, opinion pieces, etc.) are welcome and should be sent direct to the editor:

Michael R. Matthews, UNSW, m.matthews@unsw.edu.au.

The Note, along with RESOURCES, OBITUARIES, OPINION PIECES and more, are lodged at the website:

http://www.hpsst.com/

2019 IUHPST Essay Prize in History and Philosophy of Science

The International Union of History and Philosophy of Science and Technology (IUHPST) invites submissions for the 2019 IUHPST Essay Prize in History and Philosophy of Science. This prize competition, planned to continue on a biennial basis, seeks to encourage fresh methodological thinking on the history and philosophy of science as an integrated discipline.

Entries in the form of an essay of 5,000-10,000 words in English are invited, addressing this year's prize question: "What is the value of history of science for philosophy of science?" This question is intended as a counterpart to the question for the inaugural run of the prize in 2017, which asked about the value of philosophy of science for history of science. The 2017 prize was won by Theodore Arabatzis of the National and Kapodistrian University of Athens, for his essay "What's in it for the historian of science?", which can be viewed here.

All entries should contain original work that has not previously been published. For entries written originally in another language, an English translation should be submitted, with an indication of the translator. Entries will be judged on the following criteria, in addition to general academic quality: a direct engagement with this year's prize question, an effective integration of historical and philosophical perspectives, and the potential to provide methodological guidance for other researchers in the field.

The author of the winning entry will be invited to present the work at the 16th Congress of Logic, Methodology and Philosophy of Science and Technology (CLMPST 2019) to be held at the Czech Technical University, Prague, Czechia, 5-10 August 2019. Presenting at the Congress will be a condition of the award.

The award will carry a cash prize of 1,000 U.S. dollars and, in addition, a waiver of the Congress registration fee.

Other strong entries will also be considered for presentation at the Congress. In order to ensure this consideration, entrants should submit the entry also as an in-

dividual paper proposal for the Congress by the deadline of 15 December 2018, following the standard instructions indicated on the Congress website here.

Entries for this essay prize are invited from anyone, without restriction of age, nationality or academic status. Co-authored work will be considered, but if the winning entry is a co-authored work the cash prize will need to be shared out among the authors.

This prize is administered by the Joint Commission of the IUHPST, whose remit is to make links between the work of the two Divisions of the IUHPST: the DHST (Division of History of Science and Technology) and the DLMPST (Division of Logic, Methodology and Philosophy of Science and Technology). For further information about IUHPST, see:

IUHPS

Entries for the prize competition should be submitted in pdf format by e-mail to the Chair of the Joint Commission, Prof. Hasok Chang, Department of History and Philosophy of Science, University of Cambridge (hc372@cam.ac.uk). Any queries should also be directed to him. **The deadline for submission is 15 December 2018**.

2018 British Society for History of Science, Pickstone Prize Shortlist

The British Society for the History of Science (BSHS) Pickstone Prize celebrates the best scholarly work in the history of science and medicine in English. The BSHS is delighted to announce the 2018 shortlist.

The five shortlisted books represent exciting new advances in understanding and interpreting science's past. They are:

1. Paola Bertucci, *Artisanal Enlightenment: Science and the Mechanical Arts in Old Regime France* (New Haven, CT: Yale University Press, 2017)

Reconsiders the role of learned artisans, placing them at the heart of the French Enlightenment.

2. Surekha Davies, *Renaissance Ethnography and the Invention of Humans: New Worlds, Maps and Monsters* (Cambridge: Cambridge University Press, 2016)

   Reveals how cannibalism was cooked up by Europeans as a way of defining the 'strangeness' of people in Brazil.

3. Rohan Deb Roy, *Malarial Subjects: Empire, Medicine and Nonhumans in British India, 1820-1909* (Cambridge: Cambridge University Press, 2017)

   Ambitiously interweaves the histories of malaria and cinchona (used for quinine) to show how knowledge and practices became 'global'.

4. Jutta Schickore, *About Method: Experimenters, Snake Venom, and the History of Writing Scientifically* (Chicago: University of Chicago Press, 2017)

   Uncovers the weird and wonderful experiments conducted to understand the power and action of snake venom.

5. Michael Wintroub, *The Voyage of Thought: Navigating Knowledge across the Sixteenth-Century World* (Cambridge: Cambridge University Press, 2017)

   Takes its readers on a French mission to carve out an empire in the Indies and conducts them through the oceans of 16th-century thought.

The BSHS Pickstone Prize is awarded every two years, and reflects the Society's mission to promote excellence in the history of science, technology and medicine. The prize was established to honour the late historian of science Professor John Pickstone (1944-2014).

The judging panel for the 2018 Pickstone Prize was chaired by Dr Tim Boon (Head of Research and Public History, Science Museum). It included Dr Patricia Fara (University of Cambridge), Professor Charlotte Sleigh (University of Kent and Editor of the *British Journal for the History of Science*) and Dr Elizabeth Haines (University of Bristol).

Tim Boon said: 'The panel found shortlisting very painful: to select a longlist of only 11 from the 32 wide-ranging recommendations covering many periods, parts of the world and subjects, already provoked much debate. Our shortlist of five books retains great diversity, readability and seriousness. We can be confident that scholarly writing in the history of science – which the Pickstone Prize rewards – is in very good health.'

The winner of the Pickstone Prize will be announced in September 2018. The longlist can be read here.

The Cavendish Laboratory

This archive contains the first installment of historic photographs of people, equipment and events, mostly from the early history of the Cavendish Laboratory up to about 1970. There are many classic photographs of equipment used in the pioneering discoveries made by members of the Laboratory.

The preservation of the most important of these in an accessible digital Photographic Archive has been a priority as we begin a new phase in the history of the Laboratory with the rebuilding of the whole Laboratory to be completed in 2022. We wish this material to be made widely available to all interested parties.

You can find the website here.

PhilPeople Directory

PhilPeople, a directory and social network for philosophers developed by the PhilPapers Foundation with support from the American Philosophical Association.

PhilPeople's main features include:

1. Personalized profiles for every philosopher, including customizable public-

ation lists and graphical elements.

2. A comprehensive directory of departments offering an array of department-wide statistics.

3. A powerful search engine for searching PhilPeople's database of philosophers based on topics, location, demographics, and other criteria.

4. The news feed, a social networking system that allows you to follow the publications, appointments, updates, paper recommendations, blog posts, and other activities of philosophers.

5. The radar, a tool to discover people traveling near you, and for announcing your own travels.

6. A discussion sessions feature allowing you to share a paper for discussion among as many or as few people as you want, with extensive on-screen commenting and group discussion features.

PhilPeople replaces the social and profile features of PhilPapers.

PhilPeople is an online directory of philosophers, a social network for philosophers, and a tool for keeping up with everything in the philosophical profession.

PhilPeople is of much help to the science education community since it aggregates a vast number of articles and other scholarly publications in one place. With the string "science education" 1000+ entries come up.

More information can be found here.

Scholars can log on to their account and update it, or join PhilPeople, at

https://philpeople.org/wizard

Members are encouraged to complete the demographics section of the wizard. This information will be usable by philosophers searching for members of demographic

groups, and will also help gather better information on the demographics of the profession worldwide. You may choose between different levels of privacy in how various aspects of your demographic information are used: e.g. included in your profile, used in determining search results, or used only in overall demographic statistics.

Opinion Page

Mario Bunge's 99th Birthday

Michael R. Matthews, School of Education, University of New South Wales, Australia, m.matthews@unsw.edu.au

The 21st September 2018 is an occasion for the international HPS, HPS&ST, and physics communities, and others, to join with Mario Augusto Bunge and his family in celebrating his 99th birthday; and to wish him all the best through the coming year to his hoped-for 100th birthday. Few philosophers have the good fortune to live to such an age; fewer still at 98 years are publishing articles on 'Gravitational Waves and Space-Time' (Bunge 2018).

Bunge was born on the outskirts of Buenos Aires on 21st September 1919. He held chairs in physics and in philosophy at universities in Argentina (University of Buenos Aires, Universidad Nacional de La Plata) and the USA (University of Texas, University of Delaware, University of Pennsylvania and Temple University) before his appointment as professor of philosophy at McGill University in Montreal in 1966. In 1981 he became McGill's Frothingham Professor of Logic and Metaphysics. He held that chair until his retirement in 2009, when he became the Frothingham Professor Emeritus.

In 1971 he received a Guggenheim Fellowship for 'exceptionally productive scholarship'. In 1982 he became a Prince of Asturias Laureate for Communication and

Humanities. The prize jury wrote:

> Mario Bunge has contributed to analysis and laying the theoretical foundations in the field of Natural and Social Sciences with a long series of works, which have greatly influenced research carried out in these subjects both in Spain and in Spanish America.

In 2014 the International Society for General Systems Research awarded him the Ludwig von Bertalanffy Award in Complexity Thinking. He is one of just two philosophers in the Science Hall of Fame of the American Association for the Advancement of Science: the other being Bertrand Russell.

His own engaging and informative 500-page autobiography (Bunge 2016) can be seen here.

Publications

Bunge has published 70 books (many with revised editions) and 540 articles. About one quarter of his publications have originally appeared in Spanish, the balance in English; with many translated and published in both languages.

Beyond these 'home' languages, Bunge's books and articles have been published in Portuguese, German, Italian, French, Polish, Russian, Chinese, Arabic, Japanese, Farsi and Hungarian translations. For example, his ground-breaking *Causality: The Place of the Causal Principle in Modern Science* (1959) very quickly appeared in seven languages.

His publications encompass an inordinately wide range of fields: physics, philosophy of physics, metaphysics, methodology and philosophy of science, philosophy of mathematics, logic, philosophy of psychology, philosophy of social science, philosophy of biology, philosophy of technology, moral philosophy, social and political philosophy, management theory, medical philosophy, linguistics, crim-

inology, legal philosophy, and education. He is a polymath. In former times he would have been regarded as a Renaissance man.

His publications can be seen here.

Impact

Bunge's corpus of scientific and philosophical writing is not inert; it has had significant disciplinary, cultural and social impact in North and South America, and elsewhere across the world, including China.

In 1989 the *American Journal of Physics* asked its readers to vote for their favourite papers from the journal, from its founding in 1933 to 1989. In the resulting 1991 list of most memorable papers, alongside classics from Nobel Prize winners and luminaries such as Bridgman, Compton, Dyson, Fermi, Kuhn, Schwinger, Wheeler, and Wigner, was Bunge's 1956 'Survey of the Interpretations of Quantum Mechanics' (Romer 1991). In 1993, the journal repeated the exercise, asking readers for the most influential papers in the journal's first 60 years. In this list, Bunge's 1966 paper 'Mach's Critique of Newtonian Mechanics' took its place alongside his 1956 article (Romer 1993).

His contributions to international physics began in 1944 when his 'A New Representation of Types of Nuclear Forces' was published in *The Physical Review*; they have continued to the present day, with his 'Gravitational Waves and Spacetime' being published in *The Foundations of Science* in 2017.

Below is a selection of appraisals of Bunge's work taken (except for three) from a 46-chapter Centenary Festschrift (M.R. Matthews ed.) scheduled to be published by Springer in 2019. The authors are distinguished researchers from the various fields in which Bunge has published.

Alberto Cordero, Peruvian/American philosopher of science, writing of *Bunge's publications, his many translations of English-language works into Spanish, his journal*

editing, and his academic 'community building':

> No Latin American philosopher had achieved anything comparable before in cosmopolitan philosophy. Bunge is a citizen of the world, perhaps the most universalist of philosophers in the subcontinent. Bunge is nonetheless very South American, it is hard to imagine him growing up anywhere else but in cosmopolitan Argentina (Cordero 2016).

Bernulf Kanitscheider (1939-2017), philosopher of science, Germany:

> Few extraordinary personalities have the chance to decisively shape the intellectual geography of a scientific epoch. Mario Augusto Bunge belongs to the small circle of important philosophers of science whose works have already become landmarks in the spiritual landscape of world philosophy (Kanitscheider, 1984, p.viii).

Marta Crivos, Professor of Anthropology, National University of La Plata:

> Bunge's contributions turn out to be indispensable to the scientific training of generations of Argentinians. Since his classic La ciencia, su método y su filosofía [1960, revised edition 1963], his work has been the required reference in introductory courses for a wide range of scientific disciplines. Even from viewpoints that criticise his ideas, the reference to Bunge has proved to be inevitable. Therefore, generations of students and professionals benefited from his work, making possible their access to a clear and persuasive presentation of the bas and the scope of the scientific endeavour, and the approach to the intricate relations that connect and differentiate the various branches of such endeavour to philosophy (Crivos, forthcoming).

Rögnvaldur Ingthorsson, philosopher, Lund University, writing of Bunge's *Causality and Modern Science* (1959):

> it is arguably one of the best treatments of the causal realist tradition ever to have been written, one that defends the place of causality as a category in the conceptual framework of modern science. … Bunge's critique of this particular aspect of the Aristotelian view cannot be overlooked in contemporary metaphysics (Ingthorsson, forthcoming).

Gustavo Romero, astrophysicist, Instituto Argentino de Radioastronomía:

> Throughout more than 70 years Mario Bunge has researched the foundations of physics. Unlike many other philosophers dedicated to the philosophy of this science, Bunge has researched in physics and has been a university professor of physics. This has given him a unique insight and depth in his views on this field. … Fifty years after its publication, Foundations of Physics (1967) continues to be a book of enormous depth and generosity (Romero, forthcoming).

Art Hobson, professor emeritus of physics, University of Arkansas, author of widely-read textbooks on quantum physics:

> Everybody who wishes to understand quantum physics needs to read Bunge, especially quantum physicists. Most especially physicists enamoured of the Copenhagen view, and (even worse) "Quantum Bayesianism" etc., need to read his 2012 article. It is the best refutation I have seen of the huge amount of subjective nonsense about the meaning of quantum physics. Quantum physics is the study of quanta. It is the not study of our observations. Photons and electrons are real objects with real states; neither quanta nor their states are figments of our measuring instruments (Hobson, forthcoming).

José María Gil, linguist, Universidad Nacional de Mar del Plata:

> Very differently from Chomsky, Bunge (1983, p.92) suggests that linguistics needs to get in touch with biological reality by testing hypotheses against what is known about the brain from neuroscience. Bunge also considers that linguistic knowledge must be represented in specific neuronal systems. In this sense, neurological research sheds light on the highly complex processes of linguistic production, linguistic understanding, language learning, and even disorders of speech. Bunge emphasizes that language has to be materially represented in the brain because it has been widely confirmed by aphasiology that brain damages caused by stroke, injury or other motives produce linguistic deficits (Gil, forthcoming).

Henry Mintzberg, Cleghorn Professor of Management Studies, McGill University:

> It is rare to find a renowned philosopher writing about management, rarer still in a way that captures its essence so well. Mario Bunge has labelled the field "management technology", by which he meant, not the technology of management, but the field of management as a technology rather than a science. If only many of the established scholars in the field, who call themselves "management scientists", had taken Bunge's distinction to heart, the field would have avoided many dead-ends. Working across fields in Bunge's way is not nearly as common as should be the case: Mario Bunge has been a model for profound scholarship in management studies (Mintzberg, forthcoming).

Harriet Hall, retired colonel, US Air Force, Flight Surgeon, Chief of Aerospace Medicine, and Director of Base Medical Services, writes of Bunge's *Medical Philosophy: Conceptual Issues in Medicine* (2013):

> Bunge explains that whether doctors recognize it or not, medicine is firmly based on the philosophical principles of materialism, systemism, realism, scientism, and humanism. Without materialism, both diseases and therapies would be taken to be purely spiritual. Without systemism, every disease would be attributed to an independent module. Without realism, diseases would be viewed as either imaginary or as social flaws. Without scientism, either nihilism or dogmatism would prevail, and all the achievements of biomedical research of the last 500 years would be consigned to oblivion. Without humanism, all medical practice would be mercenary, and there would be no public health care (Hall 2014).

Tuukka Kaidesoja, a Finnish philosopher, who has written extensively on philosophy of social science has provided a detailed appraisal of the parallel work of Roy Bhaskar, the founder of the 'Critical Realist' programme in social science, and Mario Bunge's writings, and concludes:

> Roy Bhaskar and Mario Bunge have both developed influential realist philosophies of social science. Both of them use the ontological concept of emergence and advocate a doctrine of emergent materialism in their social ontologies. … I argued that Bunge's perspective on emergence enables one to conceptualize levels of organization in complex systems including social systems, while Bhaskar's account of levels of reality is problematic (Kaidesoja 2009, p. 318).

These positive appraisals are characteristic of reviews of Bunge's core research endeavours. The same pattern is seen in reviews of his contributions to political philosophy, moral philosophy, philosophy of technology, economic theory, and education. Consequently, it is no surprise that *Antonio Martino, professor of philosophy* at Universidad de Lanus, Buenos Aires, in a private communication writes:

> the popularity of Bunge in Argentina reaches unthinkable levels. Doctors, lawyers, pharmacists, in short any person who has a profession

> and aged more than 40 years knows it (I do not say anything about those under 40 because I hardly frequent them).

Systemism

Beyond breadth, Bunge's work is noteworthy for its coherence and systemicity. Through to the mid twentieth-century most significant Western philosophers were systematic philosophers. There was an assumption that the different areas of their philosophical inquiry had to be mutually coherent: that their epistemology, ontology, ethics, politics, philosophy of mind, religion, anthropology and even educational philosophy and practice had to all fit together, be consistent, and inform each other.

But in the past half-century and more, the pursuit of systemic philosophy, 'big pictures', 'grand narratives' or even cross-disciplinary understanding has waned, with fewer and fewer scholars having serious competence beyond their own narrow field of research. As philosopher Susan Haack wrote:

> Our discipline becomes every day more specialized, more fragmented into cliques, niches, cartels, and fiefdoms, and more determinedly forgetful of its own history (Haack 2016, p.39).

Indeed in 'postmodern times' the pursuit of a big picture or a grand narrative is widely thought to be in principle flawed or quixotic: do not bother to look as there is nothing to find. Especially since Lyotard's 1984 denunciation of the 'grand narrative programme' it is widely held that all philosophical questions and pursuits should be local: that epistemology, ethics, politics and other fields could not and should not be universal but be avowedly local, meaning constrained, and judged by local cultural norms and practices of the discussants (Lyotard 1984). This is one of the core convictions, if one might loosely use the term, of postmodernism.

Bunge defied this trend. In his typically confident and direct way he writes:

> A philosophy without ontology is invertebrate; it is acephalous without epistemology, confused without semantics, and limbless without axiology, praxeology, and ethics. Because it is systemic, my philosophy can help cultivate all the fields of knowledge and action, as well as propose constructive and plausible alternatives in all scientific controversies (Bunge 2016, p.406).

Bunge systematic philosophical orientation was already in place when, at the age of 37, he made his international philosophical debut at the 1956 Inter-American Philosophical Congress in Santiago, Chile. Willard Van Orman Quine, in his autobiography, mentions attending this congress, and the only thing he thought worth recording was:

> The star of the philosophical congress was Mario Bunge, an energetic and articulate young Argentinian of broad background and broad, if headstrong, intellectual concerns. He seemed to feel that the burden of bringing South America up to a northern scientific and intellectual level rested on his shoulders. He intervened eloquently in the discussion of almost every paper (Quine 1985, p.266).

Twenty years after this international debut, Bunge's philosophical system was laid out in detail in his monumental eight-volume *Treatise on Basic Philosophy* (1974-1989). Individual volumes are devoted to Semantics, Ontology, Epistemology, Systemism, Philosophy of Science, and Ethics. His *Political Philosophy: Fact, Fiction and Vision* (2009) was originally planned as its ninth volume. No other modern philosopher has written a philosophical treatise as comprehensive as Bunge's eight volume work; indeed, few other philosophical treatises of any comprehensiveness have been written in the past century.

Bunge has applied his systems approach to issues in logic, mathematics, physics, biology, psychology, social science, technology, medicine, legal studies, economics, and science policy. For instance, his systemism has led him to detailed criticisms

of economic theory (Bunge 1995). Concerning one of the most influential theories of modern economics, he writes:

> Rational choice theory has been a theoretical and practical flop … it is not rational enough, … it adopts ontological and methodological individualism … it is far too ambitious … it is triply ahistorical … its hypotheses are empirically untestable … its spread is a tragi-comic episode (Bunge 1999, p.100).

Engagement

Bunge has had a life-long commitment not just to research, but also to the social and cultural responsibility of academics; he has never been seduced by the 'Ivory Tower' option, comfortable though it would have been at many stages of his life. Bunge believes that philosophy needs to engage with life and the world; it has a practical aspect. This amounts to, as he writes:

> serious reflection on action and its conceptual concomitants, from moral issues arising in daily life to the general principles guiding policies, projects, and actions in engineering, medicine, education, the law and politics. For example, the debates on gender discrimination, torture, prison, war, the distribution of wealth, the duties and limits of the State, the treatment of animals, the negative side of technological advances, and more belong in practical philosophy (Bunge 2016, p.379).

In 1938, aged 20 years, Bunge was admitted to the Universidad Nacional de La Plata, where he studied physics and mathematics. Shortly thereafter he founded a Worker's School, the Universidad Obrera Argentina, which was the first such in Latin America. Within two years it had 1,000 students enrolled and a teaching staff of 60. Both students and teachers came to class after their working day. In his autobiography, Bunge writes of this initiative that:

> Back when starting university as a student in 1938, I realized that, since my compatriots were paying for my studies [higher education was free in Argentina], I had a duty to repay them. I decided to found the Universidad Obrera Argentina (UOA). I wanted this school to teach both vocational and humanistic studies to adult workers. This modest activity alerted three very different institutions: The Social Order division of the Federal Police, the Order of the Calatrava Cross, and the Construction Union.
>
> We offered elementary courses in mechanical, electrical, and chemical engineering, as well as a 2-year course in the humanities and social sciences for union activists. This course included labor law taught by Arturo Frondizi, who eventually would become President of Argentina (Bunge 2016).

Its liberal and socialist principles, and its effectiveness, prompted its closure by the government five years later in 1943.

This commitment to applied philosophy and social renewal characterised the rest of Bunge's 80 years in the academy. In 1944 he founded the journal Minerva in order to facilitate the development of contemporary, science-informed, modern philosophy in Latin America. As Bunge said:

> I had the idea of organizing a sort of rationalist common front to fight irrationalism, in particular existentialism. This pseudo-philosophy had started to rule in the Latin American schools of humanities: it rode on the fascist wave and hid behind the phenomenological veil (Bunge 2016, p.105).

During this period, when in his mid-20s, he and others worked with Enrique Gaviola (1900-1989) to establish the *Asociación Física Argentina*. From 1942-1944, Bunge was Secretary General of the *Federación Argentina de Sociedades Populares*

de Educación. During this period, he wrote his first book, *Temas de Educación Popular* (1943), dealing with the principles and practice of popular (workers) education. In addition to his own book and article writing he has taken on the demanding role of editing different journals and book series: *Exact Philosophy, Episteme, Ciencia de la ciencia and Methods*. In 1971 Bunge founded the International Society for Exact Philosophy. In 1976, he assisted in the formation of an association for the promotion of modern philosophy of science in Mexico *Asociación Mexicana de Epistemología*.

Beyond scholarship, Bunge has had immediate influence through his teaching, of by now thousands of students, and in turn through several succeeding generations of them.

Bunge does not believe that scholarly light should be kept under a bushel. He is very well-known, verging on famous, in the Hispanic world. In the popular press he features in about 1,000 entries, either as author or being interviewed.

Bunge's life-long commitment to Enlightenment-informed, socially-engaged, systemic philosophy is manifest in his being asked by the *Academia Argentina de Ciencias Exactas, Físicas y Naturales* to draft its response to the contemporary crisis of anthropogenic global warming. In a Manifesto subsequently circulated to numerous international organisations, Bunge wrote:

> Science is fingering us, not nature, for many of the recent climate changes. But, of course, science alone cannot solve a problem that is both technological and social. As Pope Francis has stated, the increasing magnitude and frequency of climate calamities requires scientifically grounded, systemic, radical, and quick responses. For one thing, since climate is not regional but global, all the measures envisaged to control it should be systemic rather than sectoral, and they should alter the causes at play – mechanisms and inputs – rather than their effects. … The required radical redesign of our social behavior can only be achieved by new technologies together with top-down regulations jointly with bottom-up voluntary actions. In other words, the current

climate crisis calls for both technically competent governments and selfless NGOs willing to give pride of place to the climate crisis.

Bunge is one of the most accomplished, informed, wide-ranging and influential philosophers of the modern age. He is a dual physicist and philosopher of the first-rank, and also a tireless communicator who for 80 years has been concerned with the ramifications of scholarship and clear, informed and consistent thinking for public life and government policy.

Many people, in many countries, both inside and outside of academic life, wish him the best of health and spirits; and fondly hope to celebrate his centenary birthday in September 2019.

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Invitation to Submit Opinion Piece

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 opinion or position pieces or suggestions about any aspect of the past, present or future of HPS&ST studies.

Contributions can be sent direct to editor. Ideally, they might be pieces that are already on the web, in which case a few paragraphs introduction, with link to web site can be sent, or else the pieces will be put on the web with a link given in the Note.

They will be archived in the OPINION folder at the HPS&ST web site:

`http://www.hpsst.com/`.

Previous HPS&ST Note Opinion Pieces at http://www.hpsst.com/

Cormac Ó Raifeartaigh, Waterford Institute of Technology, Ireland, History of Science in Schools (July 2018)

Hugh Lacey, Philosophy Department, Swarthmore College, Appropriate Roles for Ethics and Social Values in Scientific Activity (June 2018)

Gerald Holton, Physics Department, Harvard University, Tracing Tom Kuhn's Evolution: A Personal Perspective (April/May 2018)

Monica H. Green, History Department, Arizona State University, On Learning How to Teach the Black Death (March 2018).

Stephen Pinker, Psychology Department, Harvard University, The Intellectual War on Science (February 2018).

Michael Ruse, Philosophy Department, Florida State University, Does Life Have Meaning? Or is it Self-Deception at Best and Terrifyingly Absurd at Worst? (January 2018).

Mario Bunge, Philosophy Department, McGill University, In Defence of Scientism (December 2017).

Susan Haack, Philosophy and Law Departments, University of Miami, The Future of Philosophy, the Seduction of Scientism (November 2017).

Nicholas Maxwell, University College London, What's Wrong with HPS and What Needs be Done to Put it Right? (June 2017).

Heinz W. Drodste, An Interview with Mario Bunge (May 2017).

Nicholas Maxwell, University College London, The Crisis of Our Times and What to do About It (April 2017).

Eric Scerri, UCLA, Bringing Science Down to Earth (March 2017).

Robert Nola, University of Auckland, Fake News in the Post-Truth World, (February 2017).

Michael D. Higgins, President of Ireland, The Need to Teach Philosophy in Schools (December 2016).

Philip A. Sullivan, University of Toronto, What is wrong with Mathematics Teaching in Ontario? (July 2016).

Gregory Radick, Leeds University, How Mendel's legacy holds back the teaching of science (June 2016).

Matthew Stanley, New York University, Why Should Physicists Study History?

PhD Theses in HPS&ST Domain

This will be a new section of the monthly HPS&ST Note. The Note is the ideal medium for publicizing and making known submitted and awarded doctoral theses in the HPS&ST domain.

The following details should be submitted to the editor at m.matthews@unsw.edu.au:

- Candidate's Name and email
- Institution
- Supervisor
- Thesis title
- Abstract of 100-300 words
- Web link when theses are required to be submitted for Open search on web.

Recent HPS&ST Research Articles

Centaurus (Vol. 59, N. 4, 2018) Focus: Tercentenary of Jean Le Rond D'Alembert's birth (1717–1783). A review of the latest research

Archila, P.A., Molina, J. & de Mejía, AM.T. (2018) Introducing Undergraduates to the Nature of Science Through the Co-construction of Evolutionary Trees Evidence from a University Biology Course. *Research in Science Education*, 1-26. doi:10.1007/s11165-018-9758-z online first

Arfini, S., Casadio, C. & Magnani, L. (2018) Ignorance-Preserving Mental Models Thought Experiments as Abductive Metaphors. *Foundations of Science*, 1-19. doi:10.1007/s10699-018-9564-0

Biddle, J. (2018) "Anti-science Zealotry"? Values, Epistemic Risk, and the GMO Debate. *Philosophy of Science*, 85(3), 360-379. doi:10.1086/697749

Boyer, T. H. (2018) Blackbody radiation in classical physics: A historical perspective. *American Journal of Physics*, 86, 495. doi: 10.1119/1.5034785

Bulstrode, J. (2018) Riotous assemblage and the materials of regulation, *History of Science*, 1-36. doi:10.1177/0073275318776187 online first

Bulstrode, J. (2018) Edward John Dent's glass springs, archive and technical analysis combined, *Antiquarian Horology*, 39, 2, 225-243

Crespo, R. F. (2018) Liberal Naturalism and Non-epistemic Values. *Foundations of Science*, 1-27. doi:10.1007/s10699-018-9565-z online first

García-Carmona, A. & Acevedo-Díaz, J.A. (2018) The Nature of Scientific Practice and Science Education: Rationale of a Set of Essential Pedagogical Principles. *Science & Education*, 1-21. doi:10.1007/s11191-018-9984-9

Godec, S., King, H., Archer, L. et al. (2018) Examining Student Engagement with Science Through a Bourdieusian Notion of Field. *Science & Education*, 1-21. doi:10.1007/s11191-018-9988-5

Kaya, S., Erduran, S., Birdthistle, N., McCormack, O. (2018) Looking at the Social Aspects of Nature of Science in Science Education Through a New Lens: The Role of Economics and Entrepreneurship. *Science & Education*, 1-22. doi:10.1007/s11191-018-9990-y online first

Krasnodębski, M. (2018) Throwing light on photonics: The genealogy of a technological paradigm. *Centaurus*, 1-22. doi:10.1111/1600-0498.12172 online first

Lau, M. & Sikorski, T.-R. (2018) Dimensions of Science Promoted in Museum Ex-

periences for Teachers. *Journal of Science Teacher Education*, 1-23. doi:10.1080/1046560X.2018.1483688 online first

Martínez-Ordaz, M. R., Estrada-González, L. (2018) May the Reinforcement Be with You: On the Reconstruction of Scientific Episodes. *Journal of the Philosophy of History*, 12 (2), 259–283. doi:10.1163/18722636-12341395

Richter, A.D. (2018) John Wallis and the Catholics: confessional and theological antagonism in Wallis's mathematics and philosophy. *Notes Records: The Royal Society Journal of the History of Science*, doi:10.1098/rsnr.2018.0020 online first

Sutton, T. (2018) Did Newton's notions of gravity and vacuum constitute a paradigm shift in early modern natural. *Critique*, 5, 15-19. Available here

Valente, B., Maurício, P., Faria, C. (2018) Understanding the Process and Conditions That Improve Preservice Teachers' Conceptions of Nature of Science in Real Contexts. *Journal of Science Teacher Education*, 1-25. doi:10.1080/1046560X.2018.1485399 online first

Yucel, R. (2018) Scientists' Ontological and Epistemological Views about Science from the Perspective of Critical Realism. Science & Education, 1-27. doi:10.1007/s11191-018-9983-x

Recent HPS&ST Related Books

Cahan, David (2018) *Helmholtz: A Life in Science*. Chicago, IL: The University of Chicago Press. ISBN: 9780226481142

> "By far the most in-depth, culturally situated, and well written analysis of Helmholtz to date–no one knows Helmholtz as well or as thoroughly as David Cahan." – Frederick Gregory, University of Florida
>
> "David Cahan has written a masterful biography whose implicit argument is to present Hermann von Helmholtz as a grand unifier. He does this by following the thread of culture that bound together the

life, work, and context of his subject. Given the centrifugal tendencies in each of these realms–the ultimate dissolution of a shared German identity, the increasing specialization of scientific research, and the modern fracture of the self, Cahan's achievement is impressive. By bringing so many disparate sources and topics into coherence, Helmholtz mirrors the very figure it portrays." – Gabriel Finkelstein, History, University of Colorado Denver

More information available here.

Chater, Nick (2018) *The Mind Is Flat: The Remarkable Shallowness of the Improvising Brain*. New Haven, CT: Yale University Press

"Psychologists and neuroscientists struggle with how best to interpret human motivation and decision making. The assumption is that below a mental "surface" of conscious awareness lies a deep and complex set of inner beliefs, values, and desires that govern our thoughts, ideas, and actions, and that to know this depth is to know ourselves.

"In this profoundly original book, behavioral scientist Nick Chater contends just the opposite: rather than being the plaything of unconscious currents, the brain generates behaviors in the moment based entirely on our past experiences. Engaging the reader with eye-opening experiments and visual examples, the author first demolishes our intuitive sense of how our mind works, then argues for a positive interpretation of the brain as a ceaseless and creative improviser." (From the Publisher)

More information available here.

Gillett, Carl (2018) *Reduction and Emergence in Science and Philosophy*. Cambridge, UK: CUP. ISBN: 9781107075351

> 'This impressive book by Carl Gillett offers a new perspective on an old idea, emergence, an idea that has refused to go away in spite of the many damaging criticisms over the years. It is noteworthy that the concept has found many champions among the practicing scientists working in fields such as physics, life science, cognitive neuroscience, and systems theory. Gillett's account is based in a deep knowledge of the history of emergence in both philosophy and science, presenting a formidable challenge to the critics and skeptics in the field. It should help to elevate the debates to a new level. Highly recommended to all who are interested in mind, philosophy of mind, and philosophy of science.' – Jaegwon Kim, Brown University, Rhode Island
>
> 'Carl Gillett's masterful book is a comprehensive and original contribution to the philosophical discussion of emergence and reduction in science and philosophy.' –Barry Loewer, Rutgers University, New Jersey

More information available here.

Lemons, Don S. (2018) *Drawing Physics: 2,600 Years of Discovery From Thales to Higgs*. Cambridge, MA: The MIT Press

> "Brilliant! In one place, 51 unforgettable drawings. From Pythagoras to the Higgs boson, the essence of a year course in physics." – Reuben Hersh, Professor Emeritus, Department of Mathematics and Statistics, University of New Mexico; coauthor of *The Mathematical Experience*, winner of the *National Book Award*, 1983.
>
> "What a great project! Science books are normally illustrated by captioned line drawings. Don Lemons reverses the procedure: After selecting some of the most compelling drawings from the vast literature of physics he illuminates them with explanatory essays. But his comments aren't mere captions. They reach out into science history, correct popular misconceptions, uncover fresh anecdotes, and point out

hidden connections. In short, they flesh out the images with meaning. Open the book and see for yourself: Lemons draws you in." – Hans Christian von Baeyer Chancellor Professor of Physics emeritus, College of William and Mary; author of QBism: The Future of Quantum Physics

"Don Lemons's delightful Drawing Physics takes us from Heraclitus to Higgs, from planets to particle physics, from astronomy to atoms, with the aid of simple diagrams–a neglected set of cultural artifacts in the history of science. Literate, accurate, and accessible, Drawing Physics is a gem." – Robert C. Hilborn, Associate Executive Officer, *American Association of Physics Teachers*; author of *Chaos and Nonlinear Dynamics: An Introduction for Scientists and Engineers*

More information available here.

de Melo-Martín, Inmaculada, & Intemann, Kristen (2018) *The Fight Against Doubt: How to Bridge the Gap Between Scientists and the Public*. Oxford, UK: Oxford University Press. ISBN: 9780190869229

"The lack of public support for climate change policies and refusals to vaccinate children are just two alarming illustrations of the impacts of dissent about scientific claims. Dissent can lead to confusion, false beliefs, and widespread public doubt about highly justified scientific evidence. Even more dangerously, it has begun to corrode the very authority of scientific consensus and knowledge. Deployed aggressively and to political ends, some dissent can intimidate scientists, stymie research, and lead both the public and policymakers to oppose important public policies firmly rooted in science.

"To criticize dissent is, however, a fraught exercise. Skepticism and fearless debate are key to the scientific process, making it both vital and incredibly difficult to characterize and identify dissent that is problematic in its approach and consequences. Indeed, as de Melo-Martín and

Intemann show, the criteria commonly proposed as means of identifying inappropriate dissent are flawed and the strategies generally recommended to tackle such dissent are not only ineffective but could even make the situation worse.

"*The Fight Against Doubt* proposes that progress on this front can best be achieved by enhancing the trustworthiness of the scientific community and by being more realistic about the limits of science when it comes to policymaking. It shows that a richer understanding of the context in which science operates is needed to disarm problematic dissent and those who deploy it. This, the authors argue, is the best way forward, rather than diagnosing the many instances of wrong-headed dissent." (From the Publisher)

Details available here.

Mott T. Greene (2018) *Alfred Wegener: Science, Exploration, and the Theory of Continental Drift*. Baltimore, MD: Johns Hopkins University Press. ISBN: 9781421427096

"Alfred Wegener aimed to create a revolution in science which would rank with those of Nicolaus Copernicus and Charles Darwin. After completing his doctoral studies in astronomy at the University of Berlin, Wegener found himself drawn not to observatory science but to rugged fieldwork, which allowed him to cross into a variety of disciplines. The author of the theory of continental drift–the direct ancestor of the modern theory of plate tectonics and one of the key scientific concepts of the past century–Wegener also made major contributions to geology, geophysics, astronomy, geodesy, atmospheric physics, meteorology, and glaciology. Remarkably, he completed this pathbreaking work while grappling variously with financial difficulty, war, economic depression, scientific isolation, illness, and injury. He ultimately died of overexertion on a journey to probe the Greenland icecap and calculate its rate of drift.

> "This landmark biography–the only complete account of the scientist's fascinating life and work–is the culmination of more than twenty years of intensive research. In *Alfred Wegener*, Mott T. Greene places Wegener's upbringing and theoretical advances in earth science in the context of his brilliantly eclectic career, bringing Wegener to life by analyzing his published scientific work, delving into all of his surviving letters and journals, and tracing both his passionate commitment to science and his thrilling experiences as a polar explorer, a military officer during World War I, and a world-record-setting balloonist." (From the Publisher)

More information available here.

Mayo, Deborah G. (2018) *Statistical Inference as Severe Testing: How to Get Beyond the Statistics Wars*. Cambridge, UK: CUP. ISBN: 9781107664647

> "Mounting failures of replication in social and biological sciences give a new urgency to critically appraising proposed reforms. This book pulls back the cover on disagreements between experts charged with restoring integrity to science. It denies two pervasive views of the role of probability in inference: to assign degrees of belief, and to control error rates in a long run. If statistical consumers are unaware of assumptions behind rival evidence reforms, they can't scrutinize the consequences that affect them (in personalized medicine, psychology, etc.). The book sets sail with a simple tool: if little has been done to rule out flaws in inferring a claim, then it has not passed a severe test. Many methods advocated by data experts do not stand up to severe scrutiny and are in tension with successful strategies for blocking or accounting for cherry picking and selective reporting. Through a series of excursions and exhibits, the philosophy and history of inductive inference come alive. Philosophical tools are put to work to solve problems about science and pseudoscience, induction and falsification." (From

the Publishers)

More information available here.

Navarro, Jaume (2018) *Ether and Modernity: The recalcitrance of an epistemic object in the early twentieth century*. Oxford, UK: Oxford University Press. ISBN: 9780198797258

> "*Ether and Modernity* offers a snapshot of the status of an epistemic object, the 'ether' (or 'aether'), in the early twentieth century. The contributed papers show that the ether was often regarded as one of the objects of modernity, hand in hand with the electron, radioactivity or X-rays, and not simply as the stubborn residue of an old-fashioned, long-discarded science. The prestige and authority of scientists and popularisers like Oliver Lodge and Arthur Eddington in Britain, Phillip Lenard in Germany or Dayton C. Miller in the USA was instrumental in the preservation, defence or even re-emergence of the ether in the 1920s. Moreover, the consolidation of wireless communications and radio broadcasting, indeed a very modern technology, brought the ether into audiences that would otherwise never have heard about such an esoteric entity.
>
> "The ether also played a pivotal role among some artists in the early twentieth century: the values of modernism found in the complexities and contradictions of modern physics, such as wireless action or wave-particle puzzles, a fertile ground for the development of new artistic languages; in literature as much as in the pictorial and performing arts. Essays on the intellectual foundations of Umberto Boccioni's art, the linguistic techniques of Lodge, and Ernst Mach's considerations on aesthetics and physics witness to the imbricate relationship between the ether and modernism. Last but not least, the ether played a fundamental part in the resurgence of modern spiritualism in the aftermath of the Great War.

> "This book examines the complex array of meanings, strategies and milieus that enabled the ether to remain an active part in scientific and cultural debates well into the 1930s, but not beyond. This portrait may be easily regarded as the swan song of an epistemic object that was soon to fade away as shown by Paul Dirac's unsuccessful attempt to resuscitate some kind of aether in 1951, with which this book finishes." (From the Publisher)

More information available here.

Offit, Paul A. (2018) *Bad Advice: Or Why Celebrities, Politicians, and Activists Aren't Your Best Source of Health Information*. New York, NY: Columbia University Press. ISBN: 9780231186988

> "Science doesn't speak for itself. Neck-deep in work that can be messy and confounding and naïve in the ways of public communication, scientists are often unable to package their insights into the neat narratives that the public requires. Enter celebrities, advocates, lobbyists, and the funders behind them, who take advantage of scientists' reluctance to provide easy answers, flooding the media with misleading or incorrect claims about health risks. Amid this onslaught of spurious information, Americans are more confused than ever about what's good for them and what isn't.
>
> "In *Bad Advice*, Paul A. Offit shares hard-earned wisdom on the dos and don'ts of battling misinformation. For the past twenty years, Offit has been on the front lines in the fight for sound science and public heath. Stepping into the media spotlight as few scientists have done–such as being one of the first to speak out against conspiracy theories linking vaccines to autism–he found himself in the crosshairs of powerful groups intent on promoting pseudoscience. *Bad Advice* discusses science and its adversaries: not just the manias stoked by slick

> charlatans and their miracle cures but also corrosive, dangerous ideologies such as Holocaust and climate-change denial. Written with wit and passion, Offit's often humorous guide to taking on quack experts and self-appointed activists is a must-read for any American disturbed by the uptick in politicized attacks on science." (From the Publisher)

More information available here.

Plutynski, Anya (2018) *Explaining Cancer: Finding Order in Disorder*. Oxford, UK: Oxford University Press. ISBN: 9780199967452

> "In *Explaining Cancer*, Anya Plutynski addresses a variety of philosophical questions that arise in the context of cancer science and medicine. She begins with the following concerns: How do scientists classify cancer? Do these classifications reflect nature's 'joints'? How do cancer scientists identify and classify early stage cancers? What does it mean to say that cancer is a 'genetic' disease? What role do genes play in 'mechanisms for' cancer? What are the most important environmental causes of cancer, and how do epidemiologists investigate these causes? How exactly has our evolutionary history made us vulnerable to cancer?
>
> "*Explaining Cancer* uses these questions as an entrée into a family of philosophical debates. It uses case studies of scientific practice to reframe philosophical debates about natural classification in science and medicine, the problem of drawing the line between disease and health, mechanistic reasoning in science, pragmatics and evidence, the roles of models and modeling in science, and the nature of scientific explanation. (From the Publisher)

More information available here.

Prestes, Maria Elice de Brzezinski & Silva, Cibelle Celestino (Eds.) (2018) *Teaching Science with Context: Historical, Philosophical, and Sociological Approaches*. Dordrecht: Springer. ISBN 978-3-319-74036-2

> "This book offers a comprehensive overview of research at interface between History, Philosophy and Sociology of Science (HPSS) and Science Teaching in Ibero-America. It contributes to research on contextualization of science for students, teachers and researchers, and explains how to use different episodes of history of science or different themes of philosophy of science in regular science classes through diverse pedagogical approaches.
>
> "The chapters in this book discuss a wide range of topics under different methodological, epistemological and didactic approaches, reflecting the richness of research developed in Spanish and Portuguese speaking countries, Latin America, Spain and Portugal. The book contains chapters about historical events, topics of philosophy and sociology of science, nature of science, applications of HPSS in the classroom, instructional materials for students and teacher training courses and curriculum." (From the Publisher)

More information available here.

Stewart-Williams, Steve (2018) *The Ape that Understood the Universe: How the Mind and Culture Evolve*. Cambridge, UK: CUP ISBN: 9781108425049

> "*The Ape that Understood the Universe* is the story of the strangest animal in the world: the human animal. It opens with a question: How would an alien scientist view our species? What would it make of our sex differences, our sexual behavior, our child-rearing patterns, our moral codes, our religions, our languages, and science? The book tackles these issues by drawing on ideas from two major schools of

> thought: evolutionary psychology and cultural evolutionary theory. The guiding assumption is that humans are animals, and that like all animals, we evolved to pass on our genes. At some point, however, we also evolved the capacity for culture - and from that moment, culture began evolving in its own right. This transformed us from a mere ape into an ape capable of reshaping the planet, travelling to other worlds, and understanding the vast universe of which we're but a tiny, fleeting fragment." (From the Publishers)

More information available here.

Varenne, Franck (2018) *From Models to Simulations*. Oxford, UK: Routledge: ISBN: 9781138065215

> "This book analyses the impact computerization has had on contemporary science and explains the origins, technical nature and epistemological consequences of the current decisive interplay between technology and science: an intertwining of formalism, computation, data acquisition, data and visualization and how these factors have led to the spread of simulation models since the 1950s.
>
> "Using historical, comparative and interpretative case studies from a range of disciplines, with a particular emphasis on the case of plant studies, the author shows how and why computers, data treatment devices and programming languages have occasioned a gradual but irresistible and massive shift from mathematical models to computer simulations" (From the Publishers)

More information available here.

Authors of HPS&ST-related papers and books are invited to bring them to attention of the Note's assistant editors, Paulo Maurício at paulo.asterix@gmail.com or

Nathan Oseroff at nathanoseroff@gmail.com for inclusion in these sections.

Coming HPS&ST Related Conferences

September 28-29, 2018, Practice-Based Approaches in Science, Mathematics, and Logic: Challenges and Prospects (PASML2018), Vrije Universiteit, Brussels, Belgium
Details available here.

September 28-29, 2018, Space and Time: An Interdisciplinary Approach, Institute of Philosophy, Vilnius University, Vilnius, Lithuania
Details available here.

October 2-6, 2018, XIII International Ontology Congress: Physics and Ontology. San Sebastian (University of the Basque Country) and Barcelona Autonomous University of Barcelona, Spain.
Details at: http://www.ontologia.info/

October 15-17, 2018, Philosophy of Cancer Biology. Bordeaux, France.
More information available here.

October 17-21, 2018, 3rd International Conference on the History of Physics under the auspices of the European Physical Society, Donostia-San Sebastian (Spain)
Details at: http://www.ehu.eus/ehusfera/hopdss2018/

October 26-27, 2018, HSTM Network Ireland Annual Conference, The School of Natural and Built Environment, Queen's University Belfast, Ireland
Details at: https://hstmnetworkireland.org/

October 26-27, 2018, Central States Philosophical Association 2018 Meeting, University at Buffalo, Buffalo, NY.
More information available here.

October 28, November 1, 2018, 18th International Conference on Systems Biology

Humanities and Social Sciences, Lyon, France.
More information available here.

November 1-4, 2018, 26th Biannual Meeting of Philosophy of Science Association, Seattle, Washington.
More information available here.

November 8-10, 2018, Investigating the Mind: Pain, Emotion & Affective Disorders, Ruhr-University Bochum, Germany.
More information available here.

November 13-16, 2018, IX conference of the Spanish Society of Logic, Methodology and Philosophy of Science (SLMFCE), Madrid, Spain.
More information at: http://www.solofici.org/congreso2018/

November 15-17, 2018, 7th Making of the Humanities conference, University of Amsterdam, The Netherlands.
More information available here.

November 16-17, 208, Indiana Philosophical Association's Fall 2018 meeting, Indiana University, Bloomington, IN, USA.
Details at: https://ipa.hanover.edu/

November 23-28, 2018, East Asian Science Education Association (EASE) annual conference, National Dong Hwa University, Hualien Taiwan.
Details at: http://new.theease.org/conference2018.php

November 28-30, 2018, 29th Novembertagung on the History of Mathematics: "History of Mathematical Concepts and Conceptual History of Mathematics", University of Seville, Spain.
Details available here.

November 30 – December 1, 2018, CYBERSPACE 2018, Brno, Czech Republic
Details available here.

December 5-7, 2018, First Annual Meeting of The Australasian Society for Philo-

sophy and Psychology, Macquarie University, Sydney, Austalia.
Details available here.

January 9-10, 2019. Philosophy in Progress Postgraduate Conference. University of Nottingham, UK.
Details available here.

January 17-18, 2019. Double-Helix History: DNA and the past Abstract deadline: 15 September
Details available here.

January 29-29, 2019. The Philosophy of Logical Atomism 1918-2018. Complutense University of Madrid, Madrid, Spain
Deadline for submission of abstracts: September 20th, 2018.
For further inquiries: Javier Cumpa (jcarteseros@ucm.es)

February 25-27, 2019, Third International Conference of the German Society for Philosophy of Science (GWP.2019), Cologne, Germany.
More information available here.

March 29-30, 2019, The Philosophy of Ian Hacking. Institute of Philosophy, Research Centre for the Humanities, Hungarian Academy of Sciences
Inquiries to Dr. Akos Sivado, akos.sivado@gmail.com

March 31 – April 3, 2019, NARST Annual Conference, Baltimore, USA
Details at: https://www.narst.org/

April 1-4, 2019, Evolution Evolving: Process, Mechanism and Theory, Churchill College, University of Cambridge, UK
Details at: https://evolutionevolving.org/

April 24-26, 2019, British Society for the History of Philosophy Annual Conference, King's College London. Strand Campus, London, UK.
Details available here.

May 13-16, 2019, Second Hermann Minkowski Meeting on the Foundations of

Spacetime Physics, Albena, Burgaria
Details available here

May 24-27, 2019, American Symposium on the History of Logic: Validity throughout History, University of California, Los Angeles, US.
For further information: Graziana Ciola (grazianaciola@g.ucla.edu)

May 29-31, 2019, Plastics Heritage: History, Limits and Possibilities. Museu da Famácia (Pharmacy Museum) in Lisbon, Portugal
Details available here

July 15-19, 2019, International History, Philosophy and Science Teaching Group, Biennial Conference, Thessaloniki, Greece.
Details from conference chair, Fanny Seroglou, fannyseroglou@gmail.com

July 22-26, 2019, The 46th Annual Hume Society Conference, University of Nevada, Reno, NV, USA.
Details available here.

July 26-28, 2019, 4th International Periodic Table Conference: 'Mendeleev 150', ITMO University, St Petersburg, Russia
Details available here.

August 5-10, 2019, 16th Congress of Logic, Methodology and Philosophy of Science and Technology (CLMPST), Prague, Czech Republic.
For updates and details see here.