HPS & ST

HISTORY, PHILOSOPHY, SCIENCE & TEACHING

NEWSLETTER

SEPTEMBER 2026

VOL. 39 (6) / ISSN 2652-2837

Ideas, debates and opportunities across the HPS&ST community

A monthly international digest of scholarship, events, publications and teaching in the history and philosophy of science.

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EDITORIAL

Introduction

The HPS&ST Newsletter is sent monthly to about 12,000 emails of individuals who directly or indirectly have 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, engaging and effective teaching of the history and philosophy of science. The newsletter 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 40+ years.

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

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

CALLS & EVENTS

Durham University Collections Fellowships

Durham University's archives and special collections include over 70,000 books published before 1850, medieval manuscripts, maps, prints and photographs. The development of manuscript and book collections at Durham University began in its earliest days. William Van Mildert, Bishop of Durham, who was instrumental in founding the University, presented a foundation collection in January 1833.

The University also took custody of Bishop John Cosin's Library, still housed in its original building on Palace Green. Further gifts of rare books and manuscript collections were received, and the University Library expanded to occupy rooms in the 15th century Exchequer building next to Cosin's Library.

Fellowships

Applicants should submit a short CV together with a summary of the project and materials they propose to work on, and the expected publications or other outcomes (the summary should be maximum two sides of A4). Applications should demonstrate a serious research interest that focuses on primary source material within the collections held at Durham. Applicants who plan to collaborate with Durham academic or collections staff are especially welcome and should mention this in their application. There is no need to identify a particular fellowship scheme when applying; the selection committee will decide which scheme is most appropriate, though applicants can highlight one if they wish.

Information about the collections can be found here:

https://durhamcollections.org.uk/exploring-our-libraries-and-collections/

There will be four fellowship intakes throughout the academic year, lasting for four weeks each:

November = 16 November – 11 December 2026 February = 22 February – 19 March 2027 May = 26 April – 21 May 2027 June = 31 May – 25 June 2027

Applicants should indicate their preferred dates. They should also indicate to which university department(s) and/or research centres their research most relates. Applications should be submitted by noon on Wednesday **15 September 2026**. We shall aim to notify successful candidates by the end of September 2026.

Fellows will be granted an honorarium of £2,000 per month towards their transport and subsistence costs. A small number of PhD bursaries may be available to the value of £600. Please note that fellows will be expected to arrange their own travel and accommodation. Those who have previously held fellowships are eligible to apply again after three years have elapsed since their previous award. Please note that the maximum times an individual can be awarded a fellowship is on three occasions, or the equivalent of three months, over a period of 10 years.

Academic Enquiries: Dr James Kelly: james.kelly3@durham.ac.uk

Applications to Barbara Jackson, Research Co-ordinator dcf@durham.ac.uk

CALLS & EVENTS

Invitation to a European COST project

We are developing a project for a COST action

HERE Below is a brief overview. If you are interested in participating, please contact us. We will then send you a draft of the project.

Keywords: AI, critical thinking, HPS, understanding physics.

AI is used for problem-solving. What is conceptual is not for artificial but for natural intelligence. For this reason, **critical thinking** is important. To be sure of what we are talking about, we replicate the original experiments. (We will not use the Joule machine of the textbook but the Joule machine used, and we will do the same for all the other cases.) This is one of the reasons why **HPS** is important in this project.

Expected outcomes: 1. A "museum", that is, the set of replicas of the most important experiments in classical physics.

2. Modules of a textbook that we intend to be scientific, not doctrinal. The arguments in this textbook are logically and clearly justified. References must be cited (it will no longer be possible to say that Newton said something without ever having read Newton). Experiments are not presented formally but rather with the measured results obtained. Equations are not presented merely to be applied but are explained in natural language on the basis of their origin and meaning.

3. This textbook will be translated into the languages of the participants so that teaching can occur in natural language.

Contacts: Ricardo Lopes Coelho, rlc@fc.ul.pt, University of Lisbon, Portugal. Jonas Persson, jonas.persson@ntnu.no, Norwegian University of Science and Technology, Norway.

CALLS & EVENTS

2027 Congress for Logic, Methodology, and Philosophy of Science and Technology (CLMPST), Kobe, Japan

The 2027 CLMPST will be held in Kobe, Japan, from August 23-28. We welcome proposals for papers and symposia from across all areas of logic, philosophy of science, and philosophy of technology. We aim to feature presentations from across the wide array of topics pertaining to our fields, from mathematical logic to metaphilosophy, from the foundations of the exact sciences to philosophy of the humanities and social sciences, from philosophy of technology to historical perspectives on the sciences, presented by researchers from around the world. We are particularly enthusiastic about proposals that reach across disciplines, that incorporate speakers from different countries or regions, that explore public engagement and/or social implications of academic work, or that reflect on relationships and contributions of different knowledge systems. Proposals related to history and philosophy of science teaching would also be welcomed.

All information is available HERE.

Proposals should be submitted by November 15, 2026.

Questions can be addressed to Kevin Elliott (kce@msu.edu) or Fenrong Liu (fenronguva@gmail.com).

CALLS & EVENTS

Max Planck Institute Summer Academy Science Imagines Its Future

Organizers: Lorraine Daston (MPIWG/University of Chicago), David Kaiser (Massachusetts Institute of Technology), and Erika Milam (Princeton University)

The Max Planck Institute for the History of Science (MPIWG) seeks ten Early Career Fellows (graduate students, postdocs, assistant professors or the equivalent) to participate in two summer academies to be held in Berlin on June 14–18, 2027 and June 26–30, 2028, with the support of the Balzan Foundation.

The topic of the summer academies will be how disciplines in the natural sciences, social sciences, and humanities have deliberated about how to invest their always scarce resources of time, talent, and money in projects that will shape research in an always uncertain future, especially the middle- and long-term future, from the next five years to the next century.

The topic has been broadly construed, and research projects may focus on any discipline, epoch, or locale. Candidates may come from any country or discipline but should be able to present their work and discuss that of others in English.

Early Career Fellows will be given the opportunity to present their own work at the Summer Academies as well as to interview senior scholars and scientists on the topic. They will also play a central role in planning the second Summer Academy in 2028. Travel and accommodation costs will be covered.

Applications should be submitted by **November 1, 2026**.

Full details: **HERE**

CALLS & EVENTS

British Society for the History of Science Outreach Programme

The British Society for the History of Science's Outreach and Engagement Committee (OEC) offers grants of up to £500 to support engagement and outreach projects in the history of science, technology and medicine. These grants are awarded three times per year, and the deadline for the next round is Friday **18 September 2026**.

Outreach and engagement project grants are intended to promote initiatives that encourage engagement with the history of science, technology and medicine by non-academic audiences. For example, eligible projects might include supporting the costs of holding a public event, the creation of a public display, or the translation of research into educational resources. We particularly welcome projects that use innovative formats and reach audiences that are new to the history of science, technology and medicine. The grants are competitive and submissions will be judged by members of the BSHS Outreach and Engagement Committee.

Further information can be found **HERE** Scroll down past the OEC committee members at this link to find information on OEC project grants. A downloadable application form can be found at the same place.

Allan Jones allan.jones@open.ac.uk

CALLS & EVENTS

DHST Early-Career Workshop Series

We are pleased to announce the second edition of the DHST Early-Career Scholars Workshop Series, an international online initiative

2026	Session	Speakers
30 September **11:00 am - 12:30 pm EDT**	**Opening Ceremony: Roundtable on DHST Activities and its Commissions**	Thomás Haddad (USP), Alice Naisbitt (UoM), Matheus Duarte (KCL), Adriana Minor (COLMEX), Taha Yasin (IMU)
7 October **8:00 - 9:30 am EDT**	**Behind the Collections: A Conversation with the Archivist**	Elizabeth Kata (IAEA), Olivia Mandica-Hart (CERN), Rob Sunderland (NBA)
21 October **8:00 - 9:30 am EDT**	**Challenges and Possibilities of Working in a Museum**	David Pantalony (Ingenium), Moema Vergara (MAST), Marta Lourenço (MUHNAC)
4 November **8:00 - 9:30 am EST**	**Digital Humanities and AI: Uses and Limits as Methodological Tools**	Giovanna Di Rosario (Polimi), Matthieu Husson (CNRS/PSL)
18 November **10:00 - 11:30 am EST**	**North–South Knowledge Exchange: Critical Thinking and New Perspectives**	Michael Barany (University of Edinburgh), Gisela Mateos (UNAM)

organized by the Division for the History of Science and Technology (DHST) of the International Union for the History and Philosophy of Science and Technology, with the support of the Consortium for History of Science, Technology and Medicine. Whether you are beginning your academic career or looking to expand your international network, this workshop series offers an excellent opportunity to engage with experienced scholars, explore practical aspects of research and professional development, and connect with an international community of historians of science and technology.

The series will take place **online from 30 September to 2 December 2026**. More information about the workshop can be found on the website: **HERE** Throughout six sessions, participants will discuss topics related to academic careers in the history of science and technology, including archival research, museum careers, digital humanities and artificial intelligence, international collaboration, and the activities of DHST and its commissions. The workshops are designed to encourage critical reflection on the methodological and practical tools used in research while fostering worldwide integration and inclusion among early-career scholars

The workshop series is organized by Sabina Luz (Independent Researcher, Brazil), Sofia Guilhem Basilio (University of São Paulo, Brazil), Javier Ramiro Poveda Figueroa (Independent Researcher, Ecuador), and Rebecca C. Mann (University of Sydney, Australia/CNRS, France). With guidance from Barbara Hof (University of Lausanne, Switzerland) and Climério da Silva Neto (Federal University of Bahia, Brazil), organizers of the first edition.

Further information, including the registration link, will be shared soon. We warmly encourage you to save the dates and share this opportunity with students, colleagues, and other early-career researchers who may be interested. If you have any question, feel free to contact the organizers at workshops@dhstweb.org .

CALLS & EVENTS

Conference: Objectivity across the Sciences The Hong Kong University of Science and Technology, 23–25 June 2027

Submissions welecome for abstracts for the conference “Objectivity across the Sciences,” to be held on 23–25 June 2027 at The Hong Kong University of Science and Technology.

Keynote Speakers

Stephen John (University of Cambridge) Inkeri Koskinen (University of Helsinki) Jan Sprenger (University of Turin)

Objectivity is an important topic in the philosophy of science with implications for many debates, including scientific confirmation, scientific realism, measurement, values in science, and theory choice. However, defining scientific objectivity is not easy. Its meaning varies radically from different contexts. Objectivity can be a property of a product of science (e.g. scientific claims), or of a process of science (e.g. scientific methods). It can also be a virtue or ideal of scientific practice. This conference aims to examine the notion of objectivity across the natural and social sciences. In particular, it will scrutinise the nature, role, and significance of objectivity in scientific practice. Questions to be addressed include but are not limited to:

Selected papers will be included in an edited volume to be published by Springer (part of the Asian Studies in the Philosophy of Science).

For more information **HERE**

Submission Guidelines Please submit a 500-word abstract for blind review via Oxford Abstracts **HERE** by 31 December 2026.

Contact If you have any questions, please contact Qiyue Zhang **HERE**

CALLS & EVENTS

Workshop: Material Culture in the History of Physics, Deutsches Museum, Feb. 22-26, 2027

Applications are invited for the next international seminar on **Material Culture in the History of Physics** funded by the Wilhelm and Else Heraeus Foundation.

The workshop consists of a self-organized theoretical part, an essay part, and an attendance part, which will take place from **February 22 to 26, 2027 at the Deutsches Museum in Munich**.

Accommodation for five nights will be covered as well as travel expenses up to 100€ for participants from Germany, up to 300€ for students from Europe and up to 1000€ for students from overseas.

The seminar is aimed at M.A. and Ph.D. students in the history of science and physics as well as physics education. We would also like to encourage trainees in science and technology museums including respective university collections to apply.

For further details on the structure of the seminar, deadlines, etc., please see **HERE.**

CALLS & EVENTS

Deutsches Museum Fellowships

The Deutsches Museum is pleased to announce that it is once again offering several attractive fellowships for 2027 within its **Scholar-in-Residence program**. Applicants are requested to align their projects with the collections of the Deutsches Museum and to collaborate closely with local staff when formulating their research proposals. Applications aiming to explore new approaches to object-oriented research are particularly welcome.

Fellows will be in daily contact with curators, archivists, and librarians, and will receive support for their work from the museum's researchers as well as from the Munich Centre for the History of Science and Technology.

Fellows are provided with their own workspace and work on site. They have the opportunity to present their projects to a group of colleagues. They are expected to take part regularly in the colloquia and workshops organised by the museum and the Munich Centre.

The fellowships provide a monthly stipend of €3,000 for scholars holding a PhD and €2,200 for non-PhD scholars. Depending on the selection committee's assessment of the project's scope, fellowships are awarded for a duration of up to 6 months. However, these must be completed entirely within the respective calendar year.

Scholars at any stage of their career are cordially invited to apply, provided they hold at least a master's degree or equivalent (a BA is not sufficient). For non-PhD scholars, the research

proposal should ideally be related to a doctoral dissertation. All nationalities are welcome; however, a passive knowledge of German is required to utilize the library and archival collections. Scholars are responsible for covering their own health insurance costs.

Application deadline for 2027: **October 15, 2026.** More information **HERE:**

OPINION

Opinion Page. Getting it right: The pursuit of truth remains at the heart of the scientific endeavour*

MICHELA MASSIMI, Philosophy Department, University of Edinburgh

Michela Massimi is Professor of Philosophy of Science at the University of Edinburgh.

She has dual Italian and British citizenship. After studying philosophy at Sapienza University of Rome from 1993 to 1997, she completed a Ph.D. in 2002 at the London School of Economics, and after three years of postdoctoral research as a Junior Research Fellow at Girton College, Cambridge, she became a Lecturer in history and philosophy of science at University College London in 2005. She moved to the University of Edinburgh in 2012 and became professor there in 2015.

She was co-editor-in-chief of the British Journal for the Philosophy of Science from 2011 to 2016, and was President of the Philosophy of Science Association for the 2023–2024 term.

Think of the number of scenarios in which truth matters in science. We care to know whether increased CO2 emission levels cause climate change, and how fast. We care to know whether smoking tobacco increases the risk of lung cancer. We care to know whether poor diet exposes children to the risk of developing obesity, or whether forecasts of economic growth are correct. Truth in science is not esoteric dilly-dallying. It shapes climate science, medicine, public health, the economy and many other worldly endeavours.

The Orthodox View

That truth matters to science is hardly news. For a long time, people have looked to science for truths about the world. The Scientific Revolution was nothing if not the triumph of Galileo's scientific

truth – hard-won through his telescopic

observations – over centuries of dogma about the geocentric system. With its system of epicycles and deferents, Ptolemaic astronomy was at once sophisticated and false. It served to, at best, 'save the appearances' about how planets seemed to move in the sky. It did not tell the truth about planetary motion until the discovery of the Copernican explanation. Or consider the Chemical Revolution at the end of the 18th century. We no longer, after all, believe in phlogiston – the fictional imponderable fluid that Georg Ernst Stahl, Joseph Priestley and other natural philosophers at the time believed to be at work in combustion and calcination phenomena. Antoine Lavoisier's scientific truth about oxygen prevailed over false beliefs about phlogiston.

The main actors of these scientific revolutions often fostered this way of thinking about science as an enquiry leading to the inevitable triumph of truth over past errors. Two centuries after Galileo's successful defence of the heliocentric system, this idea of the course of scientific truth continued to inspire philosophers. In his *Cours de philosophie positive* (1830-42), Auguste Comte saw the evolution of human knowledge in three main stages: 'the Theological, or fictitious; the Metaphysical, or abstract; and the Scientific, or positive'. In the 'positive', the third and last stage, 'an explanation of facts is simply the establishment of a connection between single phenomena and some general facts, the number of which continually diminishes with the progress of science'.

Comte's positivism was soon decontextualised from its political and social context (after all, Comte started his career working for the social theorist Henri de Saint-Simon, and positivism was inspired by the Industrial Revolution). By the end of the 19th century (and in its early 20th-century reappearance, which I do not have the space to discuss here), the word 'positivism' had become – to the ears of many – synonymous with an unfailing optimism in the power of science and technology, and their steady progress toward truth.

Challenge to Orthodoxy

In some scientific quarters, this Comtean notion of how science evolves and progresses remains common currency. But philosophers of science, over the past half-century, have turned against the representation of science as a ceaseless forward march toward truth. It is just not how science works, how it moves through history. It flies in the face of the wonderful and subtle historical nuances of how scientific revolutions have in fact occurred. It does not accommodate how some of the greatest scientific minds held dearly to some false beliefs. It wilfully ignores the many voices, disagreements and controversies through which scientific knowledge has often advanced and progressed over time. Simple faith in the 'Whiggish' narrative of science naively presumes that progress is marked by some cumulative acquisition of 'more true beliefs'.

However, many (and legitimate in their own right) criticisms against this naive view of science have committed a similar mistake. They have offered a portrait of science purged of any commitment to truth. They see truth as an inconvenient and disposable feature of science. Fraught as the ideal and pursuit of truth is with tendencies to petty doctrinairism, it is nonetheless a mistake to try to purge it. The fallacy of positivist philosophy was to think of science as coming in stages of some sort, or following a particular path, or historical cycles. The anti-truth trend in the philosophy of science has often ended up repeating this same misstep. It is important to move beyond the sterile dichotomy between the old (quasi-positivist) view of truth in science and the rival anti-truth trend of recent decades.

Functions of Truth in Science

Let us start with some genuine *philosophical* questions about truth in science. Here are three: 1) Does science *aim* at truth? 2) Does science *tell* us the truth? 3) Should we *expect* science to tell us the truth?

In each of these questions, 'science' is a generic placeholder for whichever scientific discipline we are interested in questioning. Question one might strike us as otiose but, in fact, it triggered one of the liveliest debates of the past 40 years. Bas van Fraassen launched this debate as to whether science aims at truth with his pioneering book *The Scientific Image* (1980). Does science aim to tell us a true story about nature? Or does it aim only at saving the observable phenomena (namely, providing an account that makes sense of what we can observe, without expecting it to be the true account about nature)?

Realism A positive answer to the first question defines the philosophical stance known as 'scientific realism'. Scientific realists maintain that the best scientific theories aim at truth as their final goal. But Van Fraassen pointed out (following the French philosopher Pierre Duhem), that often in science truth is not needed, and 'saving the phenomena' (or appearances) suffices. For example, Ptolemy's astronomy could account for the appearance of planets moving in loops in the sky over months. This was called 'retrograde motion', and Ptolemy's theory accommodated it by introducing a series of geometrical contrivances (epicycles and deferents) around which planets were supposed to move. In fact, there are no such circles of circles, and retrograde motion is just an illusion caused by the relative speeds of planets all orbiting the Sun. As Copernican astronomy realised several centuries later, Ptolemaic astronomy was false, despite its century-long success at 'saving the observable phenomena'.

There are philosophers today who embrace the view that science does not need to be true in order to be *good*. They argue that asking for truth is risky because it commits one to believing in things (be it epicycles, phlogiston, ether or something else) that might prove false in the future. In their view, 'empirically adequate' theories, theories that 'save the observable phenomena', are good enough for science. For example, one might take the Standard Model in high-energy physics not as aiming at the truth about whether the world is really carved up into quarks, leptons and force carriers; whether these entities really have the properties that the Standard Model says they have; and so on.

A more prudent approach aims for empirical adequacy. Insofar as the Standard Model saves all the observable phenomena (which are not about invisible particles, of course, but about macroscopic observable situations that we can see with our naked eye), the model is empirically adequate. Why ask for more?

When it comes to the second question – does science *tell* us the truth? – scientific realists and anti-realists of various stripes have debated it. Leaving aside the aim of science, let us concentrate

on its track record instead. Has science told us the truth? Looking at the history of science, does it amount to a persuasive story of truth accumulated over the centuries? Philosophers, historians, sociologists and science-studies scholars have all challenged a simple affirmative answer to this question. They have in particular challenged the notion of factual truth implicit in the question. In this debate, philosophers take a well-defined set of facts about nature as responsible for making scientific claims true or false, and scientific progress consists in unveiling more of these facts until they are all finally revealed.

A crisp illustration of the view can be found in the *Tractatus Logico-Philosophicus* (1922), where Ludwig Wittgenstein right at the outset announced: 'The world is the totality of facts'; and 'the totality of facts determines both what is the case, and also all that is not the case'. Wittgenstein gave a deceptively simple view of how language maps on to reality and, more importantly, on to what he called 'atomic facts'. For decades (without taking Wittgenstein as a direct target nor as an interlocutor in this specific debate on science), anti-realist trends in philosophy of science have called into question both the possibility of atomic facts and their ability to make scientific claims true or false. Many think these apparently simple matters face some formidable challenges.

Fact Constructivism This decades-long, multi-pronged, disenchantment-with-truth trend in philosophy of science starts by rejecting the idea that there are facts about nature that make our scientific claims true or false. Fact-constructivism is only one aspect of this multi-pronged disenchantment-with-truth trend. Outlandish as this might sound, its defenders claim that there is not a single, objective way that the world is; there are rather many different and 'equally true descriptions of the world, and their truth is the only standard of their faithfulness', in the words of the philosopher Nelson Goodman. For example, he claimed that we do make facts, but not like, say, a baker makes bread, or a sculptor makes a statue. In Goodman's view, we make facts any time we construct what he called a 'version' of the world (via works of art, of music, of poetry, or of science).

For example, Camille Saint-Saëns created a version of the world by composing his violin sonata no 1 in D minor, which in turn inspired Marcel Proust to imagine the Vinteuil sonata in the first volume of his novel *À la Recherche du Temps Perdu* (1913-27). Anyone who has read Proust cannot help thinking about the love story of Odette and Swann unfolding in the Verdurin salon when they hear Saint-Saëns's mesmerising violin sonata.

Another way of constructing a version of the world is by clustering objects according to a particular shape and giving them a name. We do this all the time, for example, with stars and constellations. As the philosopher Hilary Putnam expresses it: 'Nowadays, there is a Big Dipper up there in the sky, and we, so to speak, "put" a Big Dipper up there in the sky by constructing that version.' Goodman's world-making view has severe implications for truth in science. He wrote:

Truth, far from being a solemn and severe master, is a docile and obedient servant. The scientist who supposes that he is single-mindedly dedicated to the search for truth deceives himself … He as much decrees as discovers the laws he sets forth, as much designs as discerns the patterns he delineates.

Goodman's view is similar in some relevant respects to the French philosopher Bruno Latour's. In *Pandora's Hope* (1999), Latour argues that facts about whether or not the savannah is advancing (and the Amazon forest retreating) are the outcome of laboratory practices about sampling soil, rather than independent facts about nature itself.

Modelling Fact-constructivism sounds too radical to many philosophers and alienating to most scientists. So here is another approach against factual truth, well-known among philosophers of science. Over the past 40 years, they have produced an extraordinary amount of work on models in science. The role of abstractions and idealisations in scientific models, they maintain, is to select and to distort aspects of the relevant target system. The billiard-ball model of Brownian motion, for example, represents the motion of molecules by idealising them as perfectly spherical billiard balls. Moreover, the model abstracts, or removes, molecules from their actual environment, which is of course where collisions among molecules take place.

Studying modelling practices in science has led some to argue that science does not tell the *truth* but it does provide important non-factive understanding. Consider, for instance, Boyle's gas law, which captures the relation between pressure p and volume v in an ideal gas at constant temperature. At best, Boyle's law is true *ceteris*

paribus (ie, all else being equal) in highly idealised and contrived circumstances. There simply is no ideal gas with perfectly spherical molecules displaying 'atomic facts' (in a quasi-Wittgensteinian sense) that make Boyle's law true. Despite being true of nothing real, the billiard-ball model of Brownian motion and Boyle's ideal gas law do nonetheless provide important non-factual understanding of the behaviour of real gases. For they allow scientists to understand the relation between decreasing volume and increasing pressure in any gas, even if there are no atomic facts in nature about perfectly spherical molecules corresponding to such idealisations.

Kuhn Anti-dogmatic and anti-monist approaches to science have also questioned the value, as well as the facticity, of truth. From the 1960s, science-studies scholars began to see the word 'truth' as evoking unpalatable petty doctrinairism and intracultural battles in the wake of the Vietnamese war, postmodernism and, later on, what became known as the 'science wars'. Many saw the physicist Thomas Kuhn as the forefather of a new historicist trend that dismantled what they perceived as the naive view that science aims at or tracks truth. Kuhn saw himself as 'a fact lover and a truth seeker'. Yet in the final remarks to his classic *The Structure of Scientific Revolutions* (1962), he made a prescient, almost ominous, warning:

Does it really help to imagine that there is some one full, objective, true account of nature and that the proper measure of scientific achievement is the extent to which it brings us closer to the ultimate goal? … Successive stages in that developmental process are marked by an increase in articulation and specialisation. And the entire process might have occurred, as we now suppose biological evolution did, without benefit of a set goal, a permanent fixed scientific truth, of which each stage in the development of scientific knowledge is a better exemplar.

For Kuhn, truth is not an overarching aim of science across scientific revolutions. Nor do scientific revolutions (eg, from Ptolemaic to Copernican astronomy) track truth either. What they do, at best, is to increase our ability to solve anomalies that beset the previous paradigm (as when we eventually discovered that retrograde motion was only an illusion, and not something that needed epicycles and deferents to be explained).

We see the spirit of Kuhn's warning in discussions today. Truth itself is not enough to settle or even guide debates about expertise, trust, consensus and dissent in science. The philosophers of science Inmaculada de Melo-Martín and Kristen Intemann have described the matter well in their book *The Fight Against Doubt* (2018). When it comes to the role of science in policymaking, the key is 'engaging in discussions with all relevant parties about the values at stake, rather than the truth of particular scientific claims'.

Policymaking involves politics and values, and 'disagreement about values cannot, and should not, be decided by scientists alone' or by just scientific evidence. Intemann and de Melo-Martín have further maintained that, even if truth were the goal of science, consensus in a disciplinary or subfield community cannot always be 'a proxy for truth, and whether it is necessary for adopting public policy is still questionable'.

To summarise, the history of science, the practice of science, and science policy all provide reasons for disenchantment with truth in science. That is why, in our time, philosophers of science who call themselves realists tend to add some qualifying adjective to the word 'realism' (be it 'structural', 'selective', 'pragmatic', 'perspectival' or 'local'). The net result – the dethroning of truth – has left philosophical discussions about its nature to logicians, philosophers of language and metaphysicians, as opposed to philosophers of science.

Why Truth Matters

The third question is whether we should *expect* science to tell us the truth, or is truth (or at least the notion of factual truth) not best left to logicians and metaphysicians?

While critical analyses of factual truth are indeed best left to logicians and metaphysicians, philosophers of science should not abdicate their responsibility to talk about truth in science. The quasi-Wittgensteinian myth of atomic facts as the truth-makers of scientific claims has proved inadequate to even scratch the surface of very complex practices in science. But that is not a good reason (or pretext) for forgoing truth altogether. Nor is it a reason for concluding that science should not be expected to tell us the truth. Philosophers of science have a social responsibility to talk about truth in science. Questions about truth cannot be left

unspoken, delegated, or, worse, met with discontent and misgivings. For a serious engagement with the topic of truth in science – thorny and difficult as it might be – must be the starting point of any serious engagement with science in democratic, tolerant and pluralistic societies.

Pragmatism But *whose* truth? By *whose* lights? Some might be tempted at this point by a Jamesian pragmatist theory of truth. American pragmatism has traditionally provided an alternative way of thinking about truth, which some philosophers of science see as more congenial to capturing the complex nuances and the power structure of scientific practice. There are significant and important differences among pragmatists such as John Dewey, William James and Charles Sanders Peirce when it comes to truth (see Cheryl Misak's *Aeon* Idea for an excellent introduction), and one should avoid assimilating or caricaturing this diverse and nuanced range of philosophical views.

In James's words: '"The true" … is only the expedient in the way of our thinking, just as "the right" is only the expedient in the way of our behaving.' Stripped of its rhetorical flourishes, for James to be true is (to a good approximation) to work successfully. A scientific model is true – on a loosely Jamesian view – if it successfully facilitates and enables activities (be they epistemic or not). If the billiard-ball model of Brownian motion helps scientists to predict the behaviour of gas molecules, for example, the model is (pragmatically) true. The falseness of the presumption of perfectly spherical molecules does not matter. Is the Jamesian conception of truth more congenial to science, and more conducive to pluralism in democratic societies?

The risk with a James-inspired conception of truth, as I see it, is that it is too malleable to resist the tides of time and the stresses of social forces endlessly at work in science. A James-inspired view of truth abdicates the expectation that science tells us the truth in the name of a non-better-qualified kind of success of a scientific practice. But how to tell apart cases where success does indeed track truth from cases where it does not?

More to the point, when it comes to matters such as climate change, the benefit of vaccinating children, or economic forecasts, we seem to need more than a malleable Jamesian conception of truth for the sake of scientifically informed decisions that do not bow to pressure from powerful lobbies and political agendas (in the name of what 'might work'). But, someone might reply, how can truth and pluralism go hand in hand if not by opting for a Jamesian conception of truth (if we really care about truth at all)?

Scientific Perspective There is another way of thinking about how truth and pluralism might go hand in hand, without reducing matters of truth to calculations of what is pragmatically good to individuals or communities sharing a scientific perspective at some point in time. First, it is necessary to understand the key term 'scientific perspective' and how it impinges on scientific pluralism. In its original use by the philosopher Ronald Giere in 2006, 'scientific perspective' is akin to Kuhn's disciplinary matrix: a set of scientific models (including the relevant experimental instruments to gather data).

In broader terms, scientific perspective is the disciplinary practice of a real scientific community at any given historical time. It includes the knowledge they produce, and the theoretical, technological and experimental resources they use, or that guide their work. Thus, in physics, one can speak of the Newtonian perspective vs the Einsteinian perspective; in chemistry, the Priestley vs Lavoisier perspective; in economics, the Keynesian vs the monetarist perspective; or the classical-genetics vs molecular-genetics perspective in biology, and so forth. What is to be said about the flourishing array of scientific perspectives? One thing is certain: science works through producing a plurality of perspectives. Over time, it leads to scientific progress, a process Comte mistakenly theorised into a monist picture of 'positive science'. But a plurality of scientific perspectives does not solve the problem of truth. On the contrary, it invites worrisome thoughts that truth is either redundant to scientific perspectives; or, worse, relativised to perspectives. One might ask again: *whose truth?* By *whose* lights?

Defending Truth in Science

The time for a defence of truth in science has come. It begins with a commitment to *get things right*, which is at the heart of the realist programme, despite mounting Kuhnian challenges from the history of science, considerations about modelling, and values in contemporary scientific practice. In the simple-minded sense, getting things right means that things are as the relevant scientific theory says that they are. Climate science is true if what it says

about CO2 emissions (and their effects on climate change) corresponds to the way that things are in nature. For the sake of powerful economic interests, sociopolitical consequences or simply different economic principles, one can try to discount, mitigate, compensate for, disregard or ignore altogether the way that things are. But doing so is to forgo the normative nature of the realist commitment in science.

The scientific world, we have seen, is too complex and messy to be represented by any quasi-Wittgensteinian picture of atomic facts. Nor can the naive image of Comte's positive science render justice to it. But acknowledging complexity and historical nuances gives no reason (or justification) for forgoing truth altogether; much less for concluding that science trades in falsehoods of some kind. It is part of our social responsibility as philosophers of science to set the record straight on such matters.

We should expect science to tell us the truth because, by realist lights, this is what science ought to do. Truth – understood as getting things right – is not the aim of science, because it is not what science (or, better, scientists) should aspire to (assuming one has realist leanings). Instead, it is what science *ought* to do by realist lights. Thus, to judge a scientific theory or model as true is to judge it as one that 'commands our assent'. Truth, ultimately, is not an aspiration; a desirable (but maybe unachievable) goal; a figment in the mind of the working scientist; or, worse, an insupportable and dispensable burden in scientific research. Truth is a normative commitment inherent in scientific knowledge.

Constructive empiricists, instrumentalists, Jamesian pragmatists, relativists and constructivists do not share the same commitment. They do not share with the realist a suitable notion of 'rightness'. As an example, compare the normative commitment to *get things right* with the view of the philosopher Richard Rorty, in whose hands Putnam's truth as 'idealised *warranted assertibility*' reduces to what is acceptable to '*us* as we should like to be … us educated, sophisticated, tolerant, wet liberals, the people who are always willing to hear the other side, to think out all the implications'.

Getting things right is not a norm about us at our best, 'educated, sophisticated, tolerant, wet liberals'. It is a norm inherent in scientific knowledge. To claim to *know* something in science (or about a scientific topic or domain) is to claim for the *truth* of the relevant beliefs about that topic or domain. But, a critic might reply, how can our knowledge – which is perspectival, entrenched in historically and culturally well-defined scientific practices – track the way the world is? How can we be expected to *truthfully* believe the things we believe in science, despite being situated in a plurality of scientific perspectives? To put it in a different way, how can we – historically and culturally situated epistemic agents – reliably build scientific knowledge over time, despite the possible errors and false steps of past (and current) scientific perspectives?

Perspectives and Normative Commitment Thinking of truth as a normative commitment inherent in the very notion of scientific knowledge brings some benefits. It overcomes a false dichotomy between atomic facts and non-factive, non-truth-conducive inferences. And it makes realism compatible with perspectivism. Scientific communities that endorse historically and culturally situated scientific perspectives (either across the history of science or in contemporary science, across different fields or different scientific programmes) share (and indeed ought to) a normative commitment to *get things right*. That is a minimum requirement to pass the bar of what we count as 'scientific knowledge'.

Since the 16th century, the method of science has been at the centre of an important debate. The hope was that a method (if any could be identified) could lead to conclusions that ought to be shared, communicated, agreed upon. But we learned that there is no single scientific method, some magic recipe valid always and everywhere, across disciplines. A plurality of scientific perspectives is not however a royal road to some worrisome kind of perspectival solipsism, thanks to the normative realist commitment that scientific perspectives ought to (and typically do) share.

Scientists endorsing different scientific perspectives (and I stress the adjective *scientific* here to undercut a possible rejoinder that might trade on the ambiguity of the word 'perspective') do not construct perspectival facts. To do so would be to possibly commit scientific fraud. Rather, they ought to share a commitment to the same tribunal of evidence. They might adopt different experimental strategies, different models, different theories. They might endorse different values about what really

matters in a given field. But it is the tribunal of evidence that they all ultimately ought to respond to.

Getting the evidence right, in the first instance – via accurate measurements, sound non-ad-hoc procedures, and robust inferential strategies – defines any research programme that is worth being called 'scientific'. The realist commitment to get things right must begin with getting the evidence right. No perspective worthy of being called 'scientific' survives fudging the evidence, massaging or altering the data or discarding evidence.

Scientists endorsing different scientific perspectives do not concoct the scientific standards by which their knowledge claims, and their resilience over time, are assessed. To do so would run the risk of partiality, or ad-hoc manoeuvring. Obviously, the notion of 'scientific standard' is complex and one has to tread carefully. Nonetheless, by and large (without any presumption of producing an exhaustive list), scientists ought to share a commitment to common scientific standards. They might disagree about what counts as a 'simpler' theory (eg, introducing new entities vs modifying laws of nature); they might place a different emphasis on the role of consistency vs explanatory power when it comes to modelling at different scales. But they ought to agree that any viable scientific theory must be able to make sense of the available evidence broadly along the lines of those (among many other possible) scientific standards.

Scientists ought to share rules for cross-perspectival assessment. That our knowledge is situated and perspectival does not make scientific truths relativised to perspectives. Often enough, scientific perspectives themselves provide the rules for cross-perspectival assessment. Those rules can be as simple as translating the 10 degree Celsius temperature in Edinburgh today into the 50 degree equivalent on the Fahrenheit scale. Or they can be as complex as retrieving the viscosity of a fluid in statistical mechanics, where fluids are treated as statistical ensembles of a large number of discrete molecules. At other times, scientists might not necessarily possess a rule-book, so to speak, for 'translating' knowledge claims from one scientific perspective into another. In those situations, we need something like what Kuhn called 'bilingualism' (rather than translation).

Even in genuine scientific revolutions, when old taxonomies fall and new, previously undreamt ones, take their place, truth is not a commodity disposable with the old scientific paradigm. Critics of Kuhn – who emphasised continuities during periods of crises and scientific revolutions, and paid attention to the subtle nuances that scientific concepts undergo across centuries – have a point here. Namely, that it is our commitment to get things right across perspectives (indeed across major conceptual upheavals) that allows communities (before and after a revolution) to understand one another and to grow in their scientific knowledge – no matter how different and perspectival the local idioms in which their scientific claims might be couched.

Galileo, trying to escape the Inquisition, arrived at a new concept of *gravitas* that eventually advanced the new lexicon of Copernicanism against the backdrop of century-long criticisms of Aristotle's theory of motion, elaborated by Jean Buridan and Nicole Oresme in 14th-century Paris, and before them by the Medieval Arabic commentators of Aristotle (the so-called Baghdad school, and Abu'l-Barakāt's almost prescient study of accelerated motion). Lavoisier, a tragic victim of the French Revolution, knew how to use the old apothecary's concept of *weight* to advance his critique of phlogiston theory and to usher in the new concept of oxygen and a new role for chemistry. Chinese knowledge about how to use saltpeter for making gunpowder entered Europe through the Silk Road and made possible Robert Boyle and Isaac Newton's highly influential speculative experimentalism about 'true permanent air' being released in explosions, and an entire research programme for the study of fire and electricity in the British and Dutch natural philosophy of the 18th century (in addition to its use in pyrotechnic arts). And as Sandra Harding has argued in *Objectivity and Diversity* (2015), Micronesian knowledge about navigation systems has a lot to teach us today.

Conclusion

Let there be no doubt: scientific knowledge is the product of our *getting it right* across our perspectival multicultural scientific history. Scientific knowledge is not a prerogative of our Western cultural perspective (and its discipline-specific scientific perspectives) but the outcome of a plurality of historically and culturally situated scientific perspectives that, over millennia, have

reliably produced knowledge with the tools, resources and concepts respectively available to each and every one of them.

Communities of epistemic agents learn how to *get things right* across time, across historically and culturally situated scientific perspectives. Not because there are atomic facts as truth-makers of atomic propositions, but because the perspectival nature of our scientific knowledge resembles what Wittgenstein called the thread that 'we twist fibre on fibre. And the strength of the thread resides not in the fact that some one fibre runs through its whole length, but in the overlapping of many fibres.' Scientific truths are the resilient and robust outcome of a plurality of scientific perspectives that, over time, have meshed with one another in their (tacit, implicit and often survival-adaptive) normative commitment to reliably produce scientific knowledge *for us as humankind*. That is why, far from being an insufferable hindrance to scientific pluralism, truth is in fact its best safeguard in tolerant, open and democratic societies that are genuinely committed to the advancement of scientific knowledge in the very many faces it comes with.

***** *This essay originally appeared in Aeon Magazine 2019. Many thanks to Matthew Chrisman and Mark Sprevak for very helpful comments on earlier versions. This essay originates from a project that has received funding from the European Research Council under the European Union's Horizon 2020 research and innovation programme (European Consolidator grant H2020-ERC-2014-CoG 647272, 'Perspectival Realism: Science, Knowledge, and Truth from a Human Vantage Point').*

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, and downloadable, in the OPINION folder at the HPS&ST web site **HERE.**

RESOURCES

HPS&ST Resources for Science Teaching

Each month, this section will highlight a freely accessible resource that brings the history, philosophy, and sociology of science into K–12 science teaching. The aim is to build, over time, a curated collection of classroom materials, teaching ideas, historical case studies, and other resources developed by the HPS&ST community, bringing them together in one place to support engaging and reflective science education.

The growing collection of featured resources is available HERE under the HPS&ST resources for science teaching separator

Resource #1: HIPST Project (2008-2010)

HIPST (History and Philosophy in Science Teaching) was a European project involving partners from eight countries, aimed at integrating history and philosophy of science into science education and promoting scientific literacy and an understanding of the nature of science. The project developed historically informed teaching materials and case studies that bring scientific ideas, practices, instruments, and their development into the classroom. The available resources include cases on Galileo and Aristotle, William Gilbert, Stephen Gray, Otto von Guericke, and others, comprising a total of 30 case studies in English. Some are also available in Portuguese, Polish, Hebrew, German, and Greek.

Explore the HIPST resources HERE.

A rationale for the construction of the resources is available in:

Höttecke, D. (2012). HIPST—History and Philosophy in Science Teaching: A European Project. *Sci & Educ* 21, 1229–1232. https://doi.org/10.1007/s11191-011-9435-3

COMMUNITY

IHPST 18th Biennial Conference, Lisbon, Portugal, July 6-10, 2026. Intrim Report

The conference, jointly chaired by Cláudia Faria and Ricardo L. Coelho, was enjoyed by 163 participants from 26 countries: Argentina (5), Armenia (1), Australia (2), Brazil (38), Canada (9), Chile (2), China (1), Colombia (2), Czech Republic (1), France (4), Germany (16), Greece (6), India (1), Israel (2), Mexico (3), Netherlands (4), Norway (1), Portugal (10), Romania (1), Russia (1), Slovenia (1), Spain (3), Taiwan (4), Turkey (11), UK (9), and USA (25).

The programme of plenary talks, presentations, meetings and social events can be seen **HERE**

Conference Proceedings will shortly be produced and placed on the conference website.

VARIA

Varia

- The new ICOHTEC Newsletter (ISSN 2070-8548) for 2026 is now available on the ICOHTEC website: **HERE**
- Hasok Chang will serve as President-Elect of the PSA starting on January 1, 2027 before assuming the role of President on January 1, 2029.
- Jerry Coyne writes that homeopathic remedies have no curative properties yet $12-15 billion per year are spent on them each year. He notes that Americans spend more on this scam than any other nationality (India is second with about $1 billion/year). Details HERE
- Max Planck and Founding of Quantum Mechanics, one in series of history of science videos HERE
- Ten downloadable HPS&ST books HERE
- *Science & Education* Open Access articles (254) HERE
- *Philosophy of Science* journal, most cited articles HERE
- Royal Society, History of Science Resources HERE
- Deadline for the Sydney Brenner Research Fellowship is September 30th. The Fellowship offers stipends of up to $5,000 to fund travel and other expenses associated with work on a significant research project in the history of the life sciences, and is open to scholars at any career stage. Ideal projects will be advanced and broad in scope, with at least some relevance to collections in the Cold Spring Harbor Laboratory Archives. Details at CSHL ArchivesSpace.

PUBLICATIONS

Featured Open-Access Books

Teich, Mikuláš: 2015, *The Scientific Revolution Revisited*, Cambridge, Open Book Publishers, http://dx.doi.org/10.11647/OBP.0054

"The Scientific Revolution Revisited brings Mikul¡Å¡ Teich back to the great movement of thought and action that transformed European science and society in the seventeenth century. Drawing on a lifetime of scholarly experience in six penetrating chapters, Teich examines the ways of investigating and understanding nature that matured during the late Middle Ages and the Renaissance, charting their progress towards science as we now know it and insisting on the essential interpenetration of such inquiry with its changing social environment. The Scientific Revolution was marked by the global expansion of trade by European powers and by interstate rivalries for a stake in the developing world market, in which advanced medieval China, remarkably, did not participate.

"It is in the wake of these happenings, in Teich's original retelling, that the Thirty Years War and the Scientific Revolution emerge as products of and factors in an uneven transition in European and world history: from natural philosophy to modern science, feudalism to capitalism, the late medieval to the early modern period. With a narrative that moves from pre-classical thought to the European institutionalisation of science - and a scope that embraces figures both lionised and neglected, such as Nicole Oresme, Francis Bacon, Thomas Hobbes, Isaac Newton, Ren© Descartes, Thaddeus Hagecius, Johann Joachim Becher - *The Scientific Revolution Revisited* illuminates the social and intellectual sea changes that shaped the modern world.

The book is available **HERE**

AUTHORS OR PUBLISHERS of suitable HPS&ST books who would like an appropriate Preface, Introduction or First Chapter of their book featured in the newsletter, and placed in the RESOURCE folder of the HPSST website, should contact newsletter editor Michael R. Matthews

PUBLICATIONS

Philosophy of Science Association (PSA) PhilSci Archive

PhilSci-Archive is the official preprint repository for the PSA and the best place to host your philosophy of science preprints. It offers a free, stable, and openly accessible archive for scholarly articles and monographs. With PhilSci-Archive, researchers can search the open-access repository and get curated alerts about new work delivered to their inboxes.

Many journals encourage authors to post preprints on archives like the PhilSci-Archive in order to increase readership, and historical data suggests that posting to the archive increases a published paper's citation rates (see https://philsci-archive.pitt.edu/20778/). Visit philsci-archive.pitt.edu today to create a free account and post your preprints.

The most downloaded preprints for the last six months of articles deposited in the previous two years are:

Zahavy, Tom (2026) LLMs can't jump.

Tsou, Jonathan Y. (2025) Hacking on Looping Effects and Kinds of People.

Fortin, Sebastian and Lombardi, Olimpia (2024) What is the electron density?

Haider, Sawsan (2024) The Impossibility of AI Containment: Logical, Mathematical, and Computational Limits to Control.

Covoni, Niccolò and Rovelli, Carlo (2026) Tractatus Quanticus.

Open Access books already deposited at the Phi-Sci Archive: **HERE**

PUBLICATIONS

Recent HPS&ST Research Articles

Akbay, G. (2026). Hereditarianism: A century of the science of inequality. *History and Philosophy of the Life Sciences*, 1-24. https://doi.org/10.1007/s40656-026-00754-1

Aksit, O., & Budak, U. S. (2026). A comparative epistemic network analysis of the nature of science in Turkish national physics curriculum and International Baccalaureate Diploma Programme physics curriculum. *Science & Education*, 1-33 https://doi.org/10.1007/s11191-026-00761-5

Andersson, J., Hansson, L., & Leden, L. (2026). Nature of science for critical science agency—Perspectives from upper secondary students. *Science & Education*, 1-19. https://doi.org/10.1007/s11191-026-00762-4

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Weber, R., Heidemann, L. A., & Veit, E. A. (2026). Fostering epistemological vigilance in physics teacher education: A didactic methodology grounded in history of science and the notion of hypotheses. *Science & Education*, 1-30 https://doi.org/10.1007/s11191-026-00767-z

Yacoubian, H. A. (2026). Scientific literacy and generative AI: embracing nature of science for social justice. *International Journal of Science Education*, 1–21. https://doi.org/10.1080/09500693.2026.2701380

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PUBLICATIONS

Recent HPS&ST Related Books

Acheson, D. (2026). *Wonders in motion: The story of dynamics*. Oxford, United Kingdom: Oxford University Press. ISBN 9780198996859.

"This wide-ranging popular introduction to the science of motion tells the story of how dynamics developed, from Galileo's time to the present day. Including such exciting discoveries as the motion of the planets, the dynamics of spinning objects, wave motion, elasticity, and fluid mechanics, the book explains the physical phenomena involved, especially those that surprise us and most challenge our elementary intuition.

"The book brings the fundamental principles of mechanics to life by tackling a wide variety of real-world questions, such as why modern-day loop-the-loop rollercoasters are not circular, why skaters on ice spin faster when they draw in their arms, and how a falling cat, initially upside-down, can sometimes manage to land on its feet. The book also explores the idea that classic problems in mechanics can often acquire a wholly new life by being given a sudden and unexpected modern 'twist', including, for example, the role played by the gravitational three-body problem in the Apollo moon missions of the 1960s.

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More information HERE

Bíró, G. I., & Tuboly, A. T. (Eds.). (2026). *Histories of the value-laden ideals of science: Philosophical perspectives*. Abingdon, United Kingdom: Routledge. ISBN 9781041205425 .

"This volume challenges oversimplified accounts of the value-free (VFI) and the value-laden ideals (VLI) in twentieth-century philosophy of science. Rather than a single, unified position, it reveals a diversity of perspectives on the relationship between science and values among influential thinkers of the period.

"Drawing on extensive historical research, this volume examines how philosophers including Rudolf Carnap, Herbert Feigl, Michael Polanyi, Robert K. Merton, Thomas Kuhn, and Paul Feyerabend approached questions of scientific objectivity, autonomy, and social responsibility. Each chapter situates these thinkers within their social and intellectual contexts. This volume demonstrates that even during the Cold War era, many philosophers of science refused to embrace a purely technical approach divorced from social concerns. By opening this "black box" in the history of philosophy of science, it offers a more nuanced understanding of how diverse thinkers conceptualized the proper relationship between scientific inquiry and human values.

"*Histories of the Value-Laden Ideals of Science* makes a significant contribution to ongoing debates about objectivity, expertise, and the social dimensions of scientific knowledge. It is essential reading for researchers and graduate students working in the history and philosophy of science." (From the Publishers)

More information HERE

Cappelen, H., & Sterken, R. (Eds.). (2026). *Communicating with AI: Philosophical perspectives*. Oxford, United Kingdom: Oxford University Press. ISBN 9780198896630. [Open Access]

"Every day, millions of people type questions into systems like ChatGPT, Claude, Gemini, or Deepseek and receive answers that appear strikingly human. These exchanges are rapidly becoming part of daily life—at work, in education, in healthcare, and in our social lives. But what, exactly, is happening when we "talk" with artificial intelligence? Do these systems understand us, or are we projecting understanding onto machines that in

fact have none? Should we think of them as partners in communication, or as instruments that measure and model language?

"*Communicating with AI: Philosophical Perspectives* brings together leading philosophers to investigate these questions. The essays explore the foundations of meaning, the possibility of alien forms of thought and language, and the social and ethical challenges that arise when machines speak. Contributors debate whether LLM outputs have literal meaning, whether AI systems can be said to have beliefs or intentions, and how responsibility and trust should be understood in a world where machines produce speech acts.

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"Clear, rigorous, and deeply relevant, this volume offers an indispensable guide for anyone seeking to grasp the philosophical stakes of our emerging conversations with AI. (From the Publishers)

More information HERE

Gillies, D., & Gillies, M. (2026). *Philosophy of artificial intelligence: From Turing to large language models*. Abingdon, United Kingdom: Routledge. ISBN 9781041106210.

"Artificial intelligence presents deep and important philosophical questions, ranging from whether computers can think, whether large language models truly understand language, and whether AI can be creative, to moral and political issues, criminal justice, health, and the future of work.

"In this much-needed book, Donald and Marco Gillies, a philosopher and computer scientist respectively, introduce and examine some of these key topics in the philosophy and science of AI, including:

• Alan Turing's imitation game and the beginnings of AI and expert systems.

• Induction and logic-based machine learning.

• Bayesianism and AI.

• The development of neural networks and deep learning.

• AI and moral issues, including social media and political radicalisation.

• Generative AI and the arts.

• Is an AI superintelligence possible?

• AI and the future of work.

"Adopting a balanced historical and philosophical approach, *Philosophy of Artificial Intelligence: From Turing to Large Language Models* is ideal for those embarking on the study of this exciting topic, whether coming from philosophy or computer science. It provides a clear and engaging introduction to artificial intelligence." (From the Publishers)

More information HERE

Hildebrand, D. L., & Ramazzotto, N. (Eds.). (2026). *Dewey's Experience and nature: A critical guide*. Cambridge: Cambridge University Press. ISBN 9781009531849.

"Marking the centennial of John Dewey's *Experience and Nature* (1925), this volume offers the first book-length critical guide to what is widely considered Dewey's philosophical masterpiece. Written by an international team of leading scholars, the book explores *Experience and Nature*'s enduring relevance across a range of fields, including philosophy, science, education, aesthetics, political theory, and cultural studies.

"Each chapter addresses key themes and concepts from Dewey's work-such as naturalism, embodiment, value, language, and the continuity of experience and nature-while situating them in relation to contemporary debates. This interdisciplinary volume is ideal for students and researchers in pragmatism, American philosophy, intellectual history, and democratic theory. Clear, engaging, and rich, it is an essential resource for understanding one of the most ambitious and original contributions to twentieth-century philosophy." (From the Publishers)

More information HERE

Jung, E., Papiernik, J., & Żukowski, B. (Eds.). (2026). *The forgotten giants: Overlooked revolutions in natural philosophy*. Cham, Switzerland: Springer. https://doi.org/10.1007/978-3-032-34008-5

“This book offers a collection of contributions that identify and exemplify a wide range of overlooked, subversive changes in the history of natural philosophy, spanning from antiquity to modernity. The guiding principle of the volume is to address questions that arise from Kuhn's approach to the problem of paradigmatic change. While it is tempting to follow in Kuhn's footsteps and see the history of natural philosophy as a series of revolutions led by giant figures - theoretical watersheds diverging from the 'normal' course of events -an accurate picture seems to be more complex and nuanced.

“By blending philosophy, science, mathematics, this book offers a rich perspective on intellectual progress and is of interest to a broad array of scientists.” (From the Publishers)

More information HERE

Lagerlund, H., Roudaut, S., & Åkerlund, E. (Eds.). (2026). *The mechanization of nature between 1300 and 1700*. Cham, Switzerland: Springer. ISBN 9783032241009.

“This book offers a collection of essays on the history and background of the mechanization of natural philosophy in the 16th and 17th centuries. It rewrites the history of mechanism and shows that the philosophical ideas present in Descartes and Newton’s era have a history much longer and more complicated than previously thought. It presents new, original research on three aspects of the mechanical tradition, namely causal powers and laws of nature, conceptions of matter, and the concept of cause, especially final causes.

“Previous research has indicated that the development of mechanical philosophy in the 17th century is much indebted to the late Aristotelian philosophers of the 16th century. This book, however, takes a further step back in history and by studying the three aspects of the mechanical tradition, shows that philosophical reflection on these topics started in the 14th century and continued up to the time of Newton.

“The new insights gained by the editors and contributors ensures this book is of great interest to scholars in history of philosophy and historians of science interested in mechanization.” (From the Publishers)

More information HERE

Macdonald, L. T. (2026). *The Royal Observatory, Greenwich, 1881–1939: Astronomy, astronomers and heritage in a changing world*. London, United Kingdom: UCL Press. ISBN 9781806550449.

“This book charts an under-researched period in the long history of the Royal Observatory at Greenwich. It covers both the scientific and social-political history of the Royal Observatory, focusing on its significance within the history of astronomy and UK history more generally. Using a wealth of archival material—much of which was previously unpublished—Lee T. Macdonald’s narrative brings the day-to-day operations of the Observatory to life and reveals how its mission in positional astronomy, combined with its cutting-edge research in photographic mapping and the study of solar eclipses, continues to expand the frontiers of astronomical research.” (From the Publishers)

More information HERE

Meisch, S. P., & Schmidt, J. J. (Eds.). (2026). *Ethics and planetary boundaries*. Cambridge, UK: Cambridge University Press. [Open Access] https://doi.org/10.1017/9781009443586

“The planetary boundaries framework examines the profound risks human actions pose to Earth's stability and resilience. Since its introduction in 2009, and through subsequent updates, the framework has become one of the most influential ideas of our age, yet it has not been put to close ethical scrutiny. This book takes a multidisciplinary approach to the ethics of the planetary boundaries, ranging from international law to Indigenous knowledge and from science to art, and political ecology. The editors introduce each boundary

before two chapters examine the reach, limits, and ethical stakes of each of the nine planetary boundaries.

“This volume comes at a critical moment, when unprecedented environmental challenges demand new approaches, tools, and perspectives to address questions of epistemology and justice. It is a valuable resource for students, citizens, and academics concerned with relationships of knowledges, ethics, and environments. This title is available Open Access through Cambridge Core.” (From the Publishers)

More information HERE

Nivala, A. (2026). *Artificial intelligence before computers: The history of Romantic computationalism*. Abingdon, United Kingdom: Routledge. ISBN 9781041296706.

“This cultural history of thinking machines examines conceptions of the human as an automaton and the possibility of mechanised thought in philosophical and literary works from the seventeenth century to the 1840s, with particular emphasis on the Romantic period.

“In the 2020s, there has been no escaping the debate over AI. Yet strong AI remains as much science fiction today as it was in the nineteenth century. Media archaeology has highlighted the ruptures and dead ends of technological development, recovering forgotten and obsolete technologies. Failed and imagined attempts to create thinking machines from Thomas Hobbes to Charles Babbage and from E.T.A. Hoffmann to Edgar Allan Poe not only illuminate their own historical contexts but also reveal the origins of the utopian hopes and dystopian fears that continue to shape responses to mechanised thought. *Artificial Intelligence before Computers* argues that we can move beyond the Romantic myth of AI only by recognising its historical roots.

“Drawing on case studies from Britain, Germany and the United States, this book will appeal to postgraduates and scholars in history, philosophy, literary studies and media studies, as well as non-specialist readers seeking to understand the long history of AI. (From the Publishers)

More information HERE

Pilgrim, J. (2026). *Pastoral’s end: Art, ecology, and catastrophe in Renaissance Italy*. Chicago, IL: University of Chicago Press. ISBN 9780226844831.

“In the sixteenth century, Italian artist Jacopo Bassano painted pictures of herdsmen and animals moving through dark and muddy landscapes. But he also participated in the agricultural development of the region in which he lived, producing topographical maps of local mountains and forests, inventing new methods of drainage and irrigation, and studying the latest techniques of crop rotation and fertilization. The relationship between Bassano’s rustic art and his participation in environmental transformation has, however, never been explored.

“One of the first studies of Italian Renaissance art to grapple with the connections between visual culture and the environment, *Pastoral’s End* explores this crucial, formative relationship. James Pilgrim looks at Bassano’s career holistically, demonstrating how his involvement in a world marked by agricultural expansion, industrialization, resource extraction, environmental degradation, social transformation, and radical philosophical development informed his paintings of country life. Introducing new archival and visual evidence of Bassano’s knowledge of hydrology, agronomy, husbandry, and architecture, *Pastoral’s End* argues that he transformed the more placid rustic imagery of previous Renaissance artists into visions of dangerous ecological instability.” (From the Publishrs)

More information HERE

Pross, A. (2026). *Life’s chemical secret: The origin of purpose and mind*. Cambridge, MA: The MIT Press. ISBN 9780262054836.

“The materialist view of nature has guided scientific thinking since Galileo—reality can be measured, modeled, and explained. Nature is objective. But our everyday life experiences just don’t seem to fit in with that view. Purpose, desire, and consciousness are real, but not objective. How could natural processes have led to such unnatural consequences? The physical nature of living matter, a material form that has totally overwhelmed our

planet, remains inexplicably unresolved. Biology, never mind psychology, simply does not make basic physical sense. Until now.

"In *Life's Chemical Secret*, Addy Pross offers at last a scientific explanation for life's greatest puzzle. Through the discovery of a new dimension in chemical possibility, Pross and his collaborators have opened a new door to understanding life's fundamental nature. The emergence of cognition, mind, and purpose is now comprehensible through the existence of *dynamic kinetic states of matter*. Some four billion years after life on earth first appeared, living forms can now understand how the universe was able to discover itself. (From the Publisher)

More information HERE

Reid, T. (2026). *Thomas Reid and the university* (P. Wood, Ed.). Edinburgh: Edinburgh University Press. ISBN 9780748644193

"Of all the major thinkers of the Scottish Enlightenment, Thomas Reid was the most closely involved with university life as a librarian, teacher and administrator. The writings collected here illustrate his thinking about the aims, scope and value of a liberal education, as well as the foundations of his common sense philosophy.

"With an editorial introduction which both recounts his academic career at King's College Aberdeen and the University of Glasgow and traces the connections between his educational ideals and his philosophical doctrines, the volume illuminates Reid's distinctive contribution to the formation of Scotland's 'democratic intellect'." (From the Publishers)

More information HERE

Authors of HPS&ST-related papers and books are invited to bring them to attention of the Newsletter's assistant editor Paulo Maurício (paulo.js.mauricio@uac.pt) for inclusion in these sections.

PUBLICATIONS

Golden Oldie: HPS&ST Research from 30+ Years Ago

Good HPS&ST research is clearly written, philosophically informed, well-argued, and has enduring value. Clarity encourages critique and evaluation so that flaws can be identified and corrected. This is a condition for the advance of knowledge.

Much education research is timely. This is useful. But an unfortunate consequence can be that what is timely today might not be timely tomorrow. Circumstances change. The research might leave no trace. Conversely, some research can leave a big trace but be philosophically flawed and so do educational and, ultimately, cultural damage.

Good HPS&ST research has a long shelf-life. In defence of this claim, the HPS&ST Newsletter will identify 30+ years-old articles that had, and still have, philosophical, historical and educational value. These Golden Oldies are available, month-by-month HERE

20th in the series:

Wallis A. Suchting: 1994, 'Notes on the Cultural Significance of the Sciences', *Science & Education* 3(1), 1-56.

ABSTRACT: 'Cultural' in the title is intended to allude to the bearing of the sciences on humanity's general orientation in the world. Questions about this are distinguished from ones about the sciences' instrumental aspect, as means to ends extrinsic to them *qua* sciences, and also from ones about their intrinsic character, except to the extent that these bear on the central topic of the paper. It is argued that the sciences, ethical/moral reflection and the arts are distinct but inseparable.

The sciences may be regarded as 'first among equals' substantively, insofar they are a privileged source of a certain specially important sort of factual knowledge, and, methodologically, insofar as they provide a particularly clear model for understanding a purely naturalistic approach to the world.

Available **HERE**

Readers are welcome to send suggestions, including appropriately-aged own-papers, with bibliographic detail plus pdf file, for the Golden Oldie Award to the Editor.

PUBLICATIONS

Good Reads: Galileo and the Needham Question

It is anticipate that each newsletter issue will feature a particular *Good Read* paper; namely one with wide relevance to research and debate in the HPS and ST communities. Being a *Good Read* does not mean conclusions have to be agreed with, or there are no faulty steps in the argument, or an author's particular interpretations cannot be disputed. But a *Good Read* needs be clearly written, well informed, and on a topic interest to a wide spread of HPS and ST scholars. The paper will be archived on the HPSST website.

The inaugural *Good Read* paper is:

Gorelik, Gennady: 2017, 'A Galilean Answer to the Needham Question', *Philosophia Scientiæ* 21(1),

ABSTRACT To make the Needham question answerable it is extended thus—What hindered Greco-Roman and Medieval science from making the next major step after Archimedes, and what hindered Eastern scientists from contributing to modern physics for centuries after Galileo? To answer this question the key distinction between modern physics and pre-Galilean science is suggested: the right to invent "illogical" fundamental concepts which can be verified by experiments. This right is based on the belief that the Universe is governed by hidden fundamental laws which Man is capable of knowing about. The source of this belief was the biblical worldview which became the basis for European cultures by the time of the Scientific Revolution thanks to book printing and the Reformation.

The paper can be downloaded from *Philosophia Scientiæ* 21(1). Since its beginning in 1996, *Philosophia Scientiæ* has been a peer-reviewed and open-access research journal. It is also archived and downloadable on the HPSST site

HERE

Gennady Gorelik was born in the Ukraine (1948). He studied physics at Moscow State University being awarded the PhD with a dissertation on 'the interaction of physics and mathematics in forming modern concepts of spatial dimensionality'.

He turned to researching the history and philosophy of Soviet physics. In 1993 he gained a position in Boston University's Centre for the History and Philosophy of Science and wrote substantial biographies of important Soviet physicists: Matvei Petrovich Bronstein (1994), Lev Landau (1997) and Andrei Sakharov (1999). Not surprisingly, this research and writing could be more freely and better done in the USA than in the USSR.

Gorelik's Needham paper canvasses two core subjects in HPS: What was Galileo's distinctive contribution to the Scientific Revolution? And: Why did modern science not take firm root in China until some three centuries following its creation and promotion in Europe? The latter is widely, and correctly, known as the Needham Question.

For science teachers, answering the first question is an important part of understanding the nature of science (NOS), a topic increasingly written into national and provincial science curricula. The second question raises important socio-cultural-philosophical-political issues that recur in debates about multicultural science and the appropriate recognition of indigenous beliefs about nature, sometimes referred to as *ethnoscience*.

One discussion of the Needham Question in science education is Chap.10 of M.R. Matthews (2019), *Feng Shui: Teaching About Science and Pseudoscience*, Springer, Dordrecht. The book is downloadable **HERE**.

Suggestions for future *Good Read* papers are most welcome. Please send bibliographic, accessibility, connections to wider issues and such details of the the newsletter editor.

PUBLICATIONS

Philosopy of Science Association (PSA) President's Report

Perhaps every philosopher of science thinks that their particular historical moment makes our subject especially relevant. After all, founded in 1933, the PSA began just after two major revolutions in basic physics and the origin of the Vienna Circle as a reaction to fascism and anti-Enlightenment forces. The circumstances invited many questions in philosophy of science. Today we face attacks on science in many countries, AI's surprising ability to do science and change how we research and teach, and the manipulation of science through groups with vested interests. Again we find no shortage of urgent philosophy of science issues in our age.

Of course I'm biased, but I firmly believe that our interdisciplinary skillsets make philosophers of science indispensable in facing this new challenges. So I'm absolutely delighted to report the birth or rebirth of three philosophy of science events and associations.

On January 14-16, 2026 the Chilean Society for the Philosophy of Science (SOCHIFIC) had its First International Congress at the University of Valparaíso. Founded in 2016, SOCHIFIC had a relaunch with this large conference. The next congress is already planned at Universidad de los Andes in Bogotá, Colombia, June 28 - July 1, 2028.

Next up, July 13-18, 2026, the first Brazilian Congress of Philosophy of Science took place at the University of São Paulo with more than 200 participants. At this event the Brazilian Society for Philosophy of Science was officially created. You can watch a video here. Their leadership kindly invites PSA members to the second Brazilian Congress of Philosophy of Science in July 2028.

A week later, July 22-24, 2026, the First Biennial Conference of the new Asian Philosophy of Science Association kicked off at Nanyang Technological University in Singapore with almost 150 participants. They are also planning a second conference for 2028.

These are three huge additions to the global philosophy of science community and I congratulate all three on their respective achievement. Hopefully the PSA and many of its members will collaborate with them in the future.

Sincerely, Craig Callender

CALLS & EVENTS

Coming HPS&ST Related Conferences

. September 14-15, 2026, Law-based Explanations Conference, London School of Economics Details: **HERE** November 4-6, 2026,Teaching Sciencce & the Arts: International Symposium, University of La Manouba, Tunis Details: **HERE** November 5-6, 2026, History of Alchemy and Chemistry Conference, Munich Details: **HERE** November 19-22,2026, PSA Annual Meeting, San Diego. Details: **HERE** January 25, 2027, Robert Boyle 400th Anniversary Conference, Royal Society of Chemistry, London Details: Professor Michael Hunter at m.hunter@bbk.ac.uk. February 22-26, 2027, Workshop: Material Culture in the History of Physics, Deutsches Museum, Details: **HERE** June 23-25, 2027 Objectivity across the Sciences The Hong Kong University of Science and Technology, Details: **HERE** August 23-28, 2027, Congress for Logic, Methodology, and Philosophy of Science and Technology (CLMPST), Kobe, Japan Details: HERE

NETWORK

HPS&ST Related Organisations and Websites

IUHPST – International Union of History, Philosophy, Science, and Technology **DLMPST** – Division of Logic, Mathematics, Philosophy, Science, and Technology

DHST – Division of History, Science, and Technology

IHPST – International History, Philosophy, and Science Teaching Group

NARST - National Association for Research in Science Teaching

ESERA - European Science Education Research Association

ASERA - Australasian Science Education Research Association

ICASE - International Council of Associations for Science Education

UNESCO – Education

MJHoS - Midwest Junto for the History of Science

HSS – History of Science Society

ESHS – European Society for the History of Science

AHA– American History Association **FHPP APS** - Forum on History and Philosophy of Physics of the American Physical Society **HAD AAS** - Historical Astronomy Division of the American Astronomical Society. **ACS HIST** – American Chemical Society Division of the History of Chemistry

GWMT - Gesellschaft für Geschichte der Wissenschaften, der Medizin und der Technik

ISHEASTME – International Society for the History of East Asian History of Science Technology and Medicine

EASE - East-Asian Association for Science Education **BSHS** – British Society for History of Science

EPSA - European Philosophy of Science Association

AAHPSSS - The Australasian Association for the History, Philosophy, and Social Studies of Science

HOPOS – International Society for the History of Philosophy of Science

PSA– Philosophy of Science Association

BAHPS - Baltic Association for the History and Philosophy of Science

BSPS – The British Society for the Philosophy of Science

SPSP- The Society for Philosophy of Science in Practice

ISHPSB - The International Society for the History, Philosophy, and Social Studies of Biology

PES– The Philosophy of Education Society (USA)

SHOT - Society for the History of Technology

The above list is updated and kept on the HPS&ST website at: **HERE**

HPS&ST related organizations wishing their web page to be added to the list should contact assistant editor Paulo Maurício: paulo.asterix@gmail.com

NETWORK

HPS&ST NEWSLETTER PERSONNEL

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