

## **HPS&ST Note**

### **December 2017**

#### **# 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 Piece, etc.) are welcome and should be sent direct to the editor: Michael R. Matthews, UNSW, [m.matthews@unsw.edu.au](mailto:m.matthews@unsw.edu.au) .

The Note, along with RESOURCES, OBITUARIES, OPINION PIECES and more, are lodged at the website: <http://www.hpsst.com/>

#### **# HPS & ST Conference at Zhejiang Normal University China**

From Sunday October 29 to Wednesday November 1, 2017, lectures and workshops on HPS&ST were hosted by The School of Education at ZJNU in Jinhua. Approximately 350 science teachers and head-teachers attended, most from Zhejiang Province, but many from other provinces. Provincial curriculum authorities also participated.



The purpose of the conference was to promote the new Integrated Science Curriculum in Zhejiang Province, and to show the importance of bringing Nature of Science (NOS) components into science teacher education.



Professor Xiao Huang at ZJNU was the conference chair and convener ( [huangxiao@zjnu.cn](mailto:huangxiao@zjnu.cn) )

With support from professors:

Yueliang Zhou (dean of the ZJNU Teacher Education College).  
Yaocun Wang (teaching & research section)  
Enshan Liu (college of life of science, Beijing Normal University)

And the large group of her own graduate students.

The ZJNU Education Department was gifted the 3-volume, *Springer HPS&ST Handbook*.



The four days of conference talks and workshops were based on different chapters in the recently published Chinese translation of M.R. Matthews, *Science Teaching: The Contribution of History and Philosophy of Science*, Foreign Language, Teaching and Research Press, Beijing (2017):

[https://www.amazon.cn/gp/aw/d/B071YLMW4D/ref=mp\\_s\\_a\\_1\\_1?\\_mk\\_zh\\_CN=%E4%BA%9A%E9%A9%AC%E9%80%8A%E7%BD%91%E7%AB%99&qid=1508312584&sr=8-1&pi=AC\\_SX118\\_SY170\\_QL70&keywords=%E7%A7%91%E5%AD%A6%E6%95%99%E5%AD%A6+%E7%A7%91%E5%AD%A6%E5%8F%B2%E5%92%8C%E7%A7%91%E5%AD%A6%E5%93%B2%E5%AD%A6%E7%9A%84%E8%B4%A1%E7%8C%AE&dpPI=1&dpID=41-SXKJm1XL&ref=plSrch](https://www.amazon.cn/gp/aw/d/B071YLMW4D/ref=mp_s_a_1_1?_mk_zh_CN=%E4%BA%9A%E9%A9%AC%E9%80%8A%E7%BD%91%E7%AB%99&qid=1508312584&sr=8-1&pi=AC_SX118_SY170_QL70&keywords=%E7%A7%91%E5%AD%A6%E6%95%99%E5%AD%A6+%E7%A7%91%E5%AD%A6%E5%8F%B2%E5%92%8C%E7%A7%91%E5%AD%A6%E5%93%B2%E5%AD%A6%E7%9A%84%E8%B4%A1%E7%8C%AE&dpPI=1&dpID=41-SXKJm1XL&ref=plSrch)

The translation was also the occasion for a plenary lecture to 1,000+ science teachers at the Chinese New Education Institute (NEI) conference held at the Haimen Technical College.

There are many large and internationally renowned HPS departments in Chinese universities. The above conferences, and the book translation, are a sign of the encouraging interaction between HPS and the Chinese science education community.

### # Philosophy Publications Archive: New Site for Downloadable Papers

PhilPapers Foundation is pleased to announce the launch of a new site for holding and gratis downloading of philosophical papers: [PhilArchive](#).

As its name indicates, PhilArchive is an open access e-print archive for philosophical works. PhilArchive is a relaunch and rebranding of the archive service that has been present within PhilPapers since 2009. The archive service has been widely used, but we have found that some philosophers are unaware of it because of its location within PhilPapers. We anticipate that the new PhilArchive website will significantly increase awareness and use of the service. It will also help to logically separate PhilPapers open access content (which is completely free to all) from its indexing service (for which we ask universities to pay a fee).

PhilArchive includes 28,000+ works, under 5,300 topics making it by far the largest open access archive in philosophy. PhilPapers and PhilArchive will remain tightly integrated, with all archived papers on one service automatically appearing on the other service. PhilArchive also introduces some important new features, including the ability to make different versions of a paper accessible for citation.

We strongly encourage all philosophers to archive their papers on PhilArchive as a matter of course.

We also encourage all users to regularly monitor PhilArchive for new papers. You can set up regular email alerts and also search by fine-grained topics. We hope that the site will help make archival a standard practice in philosophy, as it already is in the physical sciences and some other areas.

Visit [PhilArchive](#)

David Bourget (Western)  
David Chalmers (NYU, ANU)  
Co-Directors, PhilPapers

### **# 4<sup>th</sup> Latin American Conference of the International History, Philosophy and Science Teaching Group (IHPST-LA), September 3 to 5, 2018, Federal University of ABC, UFABC, Santo André, Brazil**

After 8 years from the 1<sup>st</sup> Latin American Conference, in Maresias (SP), and 3 years from the 13<sup>th</sup> Biennial Conference of the IHPST, in Rio de Janeiro (RJ), Brazil will host again a group meeting. In three days of intense discussion, we seek to promote a wide debate among historians, educators, teachers and others on the relation between history, philosophy, sociology and science teaching.

There will be three kinds of submission of proposal: oral communication, poster and thematic symposia. Proposals may be submitted in Portuguese, Spanish or English.

Submission of proposals (all categories): from February 19 to March 30  
Early registration deadline: June 3

If you have any doubts and suggestions, send an e-mail to [ihpstla2018@gmail.com](mailto:ihpstla2018@gmail.com)  
Complete version of CFP : <http://www.brenoam.com/ihpstla-2018-en>.

## **# The International Committee for the History of Technology's 45th Symposium, 17 to 21 July 2018, Saint-Étienne, France**

The International Committee for the History of Technology will hold its 45th symposium and 50th anniversary celebration at the Jean Monnet University in the city of Saint-Étienne, France. The general theme of the symposium is “Technological Drive from Past to Future? 50 years of ICOHTEC.”

Our intention is to inquire into long-term trends in interactions between technology and society, as well as how technologies have influenced utopian and dystopian views of the future. We aim to examine how the role of technology has changed across history and what characters and trends of technological change historians can help to anticipate in the future.

As usual, the ICOHTEC Programme Committee welcomes papers on a wide range of topics, especially the changing relations between technology and society in the past and future. The Programme Committee prefers submissions of coherent session proposals of three to four papers, although individual papers are welcomed. We also encourage poster presentations, which will be exhibited for the duration of the symposium.

Besides these types of proposals, the Committee also encourages proposals in more unconventional formats, for example roundtables on recent important books or research issues, or panel discussions on films or other media related to the history of technology.

### **Submission of proposals**

All proposals (paper, sessions, and posters) must be submitted electronically through our website <http://www.icohtec.org/annual-meeting-2018.html>.

**The deadline** is 5 February 2018.

Please find the whole call for papers on ICOHTEC's homepage: <http://icohtec.org/annual-meeting-2018-cfp.html>

Should you have any queries on the submission procedure or programme, please contact Timo Myllyntaus, the Chair of the Programme Committee, [timmyl@utu.fi](mailto:timmyl@utu.fi)

## **# ICOHTEC Prizes for Outstanding Books and Articles in the History of Technology**

The International Committee for the History of Technology, ICOHTEC, announces the **Turriano ICOHTEC Prize** for books (2500 Euro, deadline **2 February 2018**) and the **Maurice Daumas Prize** for articles (500 Euro, deadline **15 January 2018**). The prize-winning book and the prize-winning article will be presented and discussed at a special session of the next ICOHTEC symposium, in Saint-Étienne, France, 17-21 July 2018 (<http://www.icohtec.org/annual-meeting-2018.html>). For information concerning the prizes please visit <http://icohtec.org/resources-prizes.html>

Please contact Hans-Joachim Braun, Helmut Schmidt University, Chair of the Turriano ICOHTEC Prize Committee, [hjbraun \(at\) hsu-hh.de](mailto:hjbraun@hsu-hh.de), or Elvira Callapez, Universidade Lisboa, Chair of the Maurice Daumas Prize Committee, [mariaelvirascallapez \(at\) gmail.com](mailto:mariaelvirascallapez@gmail.com)

Stefan Poser, Helmut Schmidt University, Secretary General of the International Committee for the History of Technology, ICOHTEC, [poser \(at\) hsu-hh.de](mailto:poser@hsu-hh.de)

**# *History, Philosophy, and Science Teaching: New Perspectives***  
Michael R. Matthews (ed.), Springer 2018. ISBN 978-3-319-62614-7

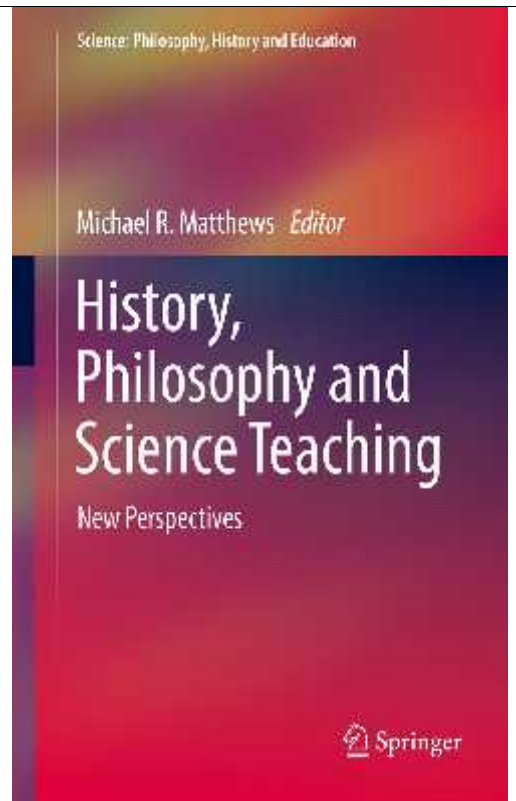
The anthology of 326 pages has 12 chapters in four sections.

*This book is a timely reminder of why history and philosophy of science are urgently needed to support understanding of science. From major traditions such as the Enlightenment to the tensions around cultural studies of science, the book provides a comprehensive context for the scientific endeavour, drawing on curriculum and instructional examples.* -  
**Sibel Erduran, University of Oxford, UK**

*The scholarship that each of the authors in this volume offers deepens our understanding of what we teach in science and why that understanding matters. This is an important book exploring a wide set of issues and should be read by anyone with an interest in science or science education.* -  
**Jonathan Osborne, Stanford University, USA**

*This volume presents new and updated perspectives in the field, such as the Enlightenment Tradition, Cultural Studies, Indoctrination in Science Education, and Nature of Science. Highly recommended.* -  
**Mansoor Niaz, Universidad de Oriente, Venezuela**

*This volume provides an extremely valuable set of insights into educational issues related to the history and philosophy of science.* -  
**Michael J Reiss, University College London, UK**



## **Section I Science, Culture, And Education**

### **1 Michael R. Matthews**

Feng Shui: Educational Responsibilities and Opportunities

### **2 Robert Nola**

The Enlightenment: Truths Behind a Misleading Abstraction

### **3 Deniz Peker & Özgür Taskin**

The Enlightenment Tradition and Science Education in Turkey

### **4 Christine McCarthy**

Cultural Studies of Science Education: A Philosophical Appraisal

## **Section II Teaching and Learning Science**

### **5 Gregory J. Kelly & Peter R. Licona**

Epistemic Practices and Science Education

**6 Erin E. Peters-Burton**

Strategies for Learning Nature of Science Knowledge: A Perspective from Educational Psychology

**7 Ernst Mach**

About the Psychological and Logical Moment in Natural Science Teaching (1890),  
[Hayo Siemsen translation]

**Section III Curriculum Development and Justification**

**8 Igal Galili**

Scientific Knowledge as a Culture: A Paradigm for Meaningful Teaching and Learning of Science

**9 Yaron Lehavi & Bat-Sheva Eylon**

Integrating Science Education Research, Science and History and Philosophy of Science in Developing an Energy Curriculum

**10 Mike U. Smith**

Teaching Evolution: Criticism of Common Justifications and the Proposal of a More Warranted One

**Section IV Indoctrination and Science Education**

**11 Lena Hansson**

Science Education, Indoctrination, and the Hidden Curriculum

**12 Paul A. Wagner**

Warranted Indoctrination in Science Education

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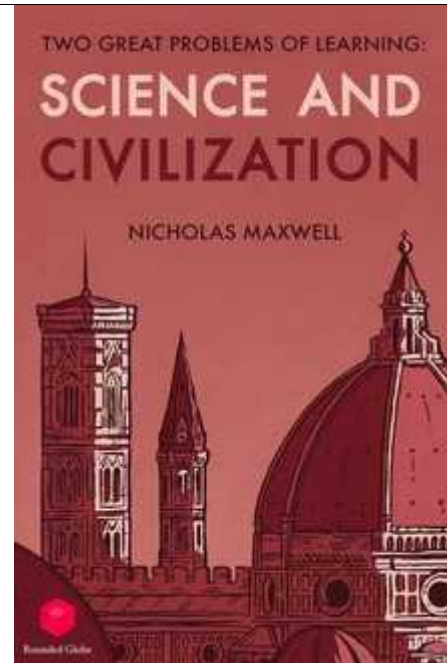
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Two books that should be of interest to many on the HPS&ST List are:

Nicholas Maxwell, *Two Great Problems of Learning: Science and Civilization*.

*“Two great problems of learning confront humanity: learning about the nature of the universe and about ourselves and other living things as a part of the universe, and learning how to become civilized. The first problem was solved, in essence, in the seventeenth century, with the creation of modern science. But the second problem has not yet been solved.*

*Solving the first problem without also solving the second puts us in a situation of great danger. All our current global problems have arisen as a result. What we need to do, in response to this unprecedented crisis, is learn from our solution to the first problem how to solve the second.”*



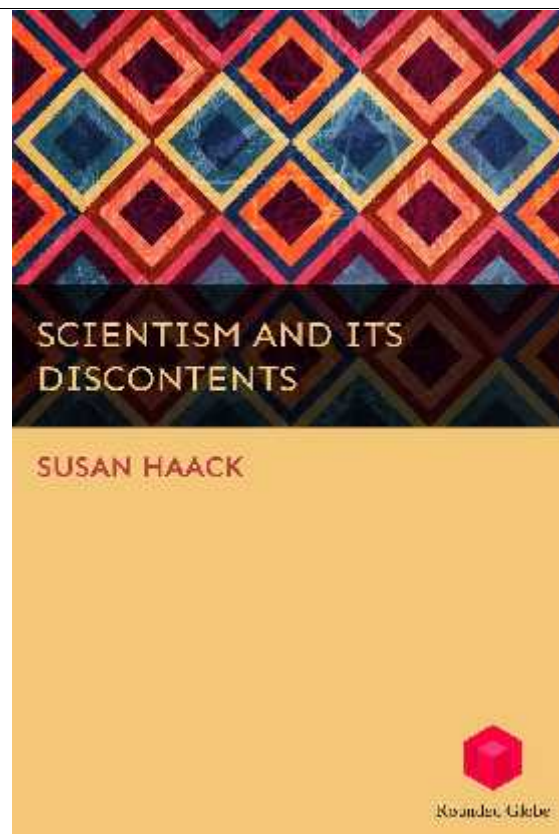
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Susan Haack, *Scientism and Its Discontents*

*In Defending Science—Within Reason (2003), Haack argued that neither the cynicism then in vogue among post-modernist, post-colonialist “science critics,” nor the uncritical deference characteristic of scientism, is defensible. The achievements of the sciences deserve our respect, even our admiration; but, like all human enterprises, the sciences are fallible, imperfect, stumbling, and susceptible to corruption.*

*These days, anti-scientific cynicism seems to be waning; but scientism, the opposite extreme, is flourishing—in public-policy debates, in the legal system, in education, and in philosophy. In *Scientism and its Discontents* Haack shows that this new scientism is no less confused, and no less damaging to our intellectual culture, than the older cynicism.”*



Available at:

<https://roundedglobe.com/books/1b42f98a-13b1-4784-9054-f243cd49b809/>



## # Opinion Page: In Defense of Scientism \*

*Mario Bunge*, Philosophy Department, McGill University, Montreal

Scientism is the thesis that all cognitive problems concerning the world are best tackled adopting the scientific approach, also called ‘the spirit of science’ and ‘the scientific attitude’. While most contemporary philosophers reject scientism, arguably scientists practice it even if they have never encountered the word. However, the correct meaning of ‘scientism’ has proved to be even more elusive than that of ‘science’, which in ordinary language encompasses everything that is neither ordinary nor confused.

Scientism started out in the middle of the French Enlightenment, that is, about 1750. More precisely, scientism is the cultural and political formula: “Science has replaced religion because it is inherently progressive, whereas religion is conservative.”

The reason science is progressive, it was argued, is that its practitioners engage in rigorous research and rational debate, whereas religious believers do not search for new truths, are gullible, repeat moth-eaten dogmas, comment only on outdated books, and do not participate regularly in open meetings to share and discuss new findings.

Furthermore, religious dispute involved endless debates that can only be terminated by authority, whereas among scientists differences of opinion are publicly discussed, and are resolved, finally, by rational argument jointly with hardly-won evidence rather than by recourse to either authority or faith.

The neologism ‘scientism’ was coined more than a century after the corresponding concept. It was popularized by the embryologist Félix le Dantec (1912: 68), and it was clearly defined by Lalande’s (1939: p.740) classical *Vocabulaire*. However, the concept had been hatched much earlier in the radical wing of the French Enlightenment. And both word and concept occurred in other contexts, particularly in religious publications, where it was always used in its pejorative sense.

Peter Schöttler (2013: p.98) found that, around 1900, the words ‘science’ and ‘scientism’ were usually accompanied by the following epithets in the relevant French literature: abstract, anti-religious, bankrupt, cold, dogmatic, durkheimian, exaggerate, false, German, gross, heavy, laic, lame, materialist, narrow, pedantic, positivist, pretentious, rationalist, socialist, stupid, and vulgar. A contemporary study might yield a similar result: after one century, science and scientism continue to be two of the *bêtes noires* of the obscurantist party.

Scientism has often been equated with positivism, in particular Comte’s. While it is true that Comte stated that sociology (a word he coined) ought to be rendered scientific, he made no contributions to it, and did not appreciate Condorcet’s essays in mathematical social science. Moreover, he believed that sociology and biology should test their hypotheses by comparison rather than experiment. Worse, in line with the phenomenalism of Hume and Kant, Comte condemned all talk of atoms, the innards of stars, and other unobservables.

Consequently, for all his praise of science, Comte’s positivism can hardly be regarded as scientific. This is why Emile Meyerson (1931) – one of the two philosophers who

corresponded with Einstein – missed no occasion to criticize Comte’s ban on all the research projects that attempted to catch realities underneath phenomena.

Friedrich Hayek (1952) – who, in line with the Austrian tradition, disliked the French Enlightenment – ignored the classical definition recalled above, and offered his own idiosyncratic one: scientism would be “the attempt to ape the natural sciences” in social matters. This slanted concept of scientism is the one that has prevailed in the humanities, particularly since the post-modernist counter-revolution that started about 1950, and recruited those left behind as well as those who blamed science for the sins of ‘the establishment’. To understand this change in the evaluation of scientism, we must take a closer look at its historical background, as well as at the reaction it elicited.

## 1 Enlightenment Scientism

Along with secularism, egalitarianism, humanism, and materialism, scientism was a component of the radical wing of the French Enlightenment, from Diderot, Helvétius, d’Holbach and La Mettrie to Cloots, Condorcet, Mirabeau, and Maréchal. This strand was at odds with both the moderate wing of the same vast movement (d’Alembert, Montesquieu, Rousseau, Turgot, and Voltaire) and the far smaller and paler Scottish Enlightenment – Hume, Smith, and Hutcheson. (See Israel 2010 for the great differences between the two wings.)

Whereas the above-mentioned French were revolutionaries both philosophically and politically – albeit of the armchair kind - the Scots were reformists. In particular, the moderates did not share the atheism and republicanism of the French radicals. Nor did they adopt the scientific manifesto contained in Condorcet’s reception speech at the French Academy in 1782. There he declared his trust that the ‘moral [social] sciences’ would eventually ‘follow the same methods, acquire an equally exact and precise language, attain the same degree of certainty’ as the physical [natural] sciences (Condorcet 1976).

Condorcet’s scientism did not involve the ontological reductionism exemplified in recent years by sociobiology, pop evolutionary psychology, neuroeconomics, and the rest of the purely programmatic neuro hype. Indeed, in the same lecture, Condorcet noted that in the moral sciences ‘the observer himself forms part of the society that he observes’. Therefore, presumably, he would have welcomed the so-called Thomas theorem, according to which in social matters appearance is reality, in that people react not to external stimuli but to the way they ‘perceive’ them. So, Condorcet’s scientism was not naturalistic: he knew that machines and social systems, though material rather than spiritual, were artificial or man-made, hence just as unnatural as science, ethics, and the law. (For the differences between naturalism and materialism see Bunge 2009a.)

Much the same applies to Condorcet’s philosophical comrades in arms, in particular Thiry d’Holbach, who treated the two branches of factual science in two different volumes: *Système de la nature* (1770) and *Système social* (1773). Their scientism was methodological, not ontological, which is why it is wrong to call it ‘methodological naturalism’, the way Popper (1960) did. Incidentally, the French Enlightenment was a blind spot of his, as of the entire Austrian cultural tradition: Austria had missed the Renaissance, the Reformation, the Scientific Revolution, and the Enlightenment, and only in mid-nineteenth century leaped from the Middle Ages to its own Industrial Revolution and ‘Late Enlightenment’ marked by Bolzano, Mendel, Mach, and Boltzmann.

Besides, Popper – never eager to define his key words, in particular ‘historicism’, ‘collectivism’ and ‘scientism’ – had left social philosophy to Hayek, on whom he depended to be hired by the London School of Economics, and who ‘managed to corrupt his socialism’, as Hacohen (2000: 486) has documented. For all of these reasons, Popper should not be taken as an authority on either scientism or social science.

The Vienna Circle adopted all of the principles of the radical wing of the French Enlightenment except for materialism: it remained shackled to the phenomenalism essential to Hume, Kant, Comte, and Mach, according to which all there is (or at least all that can be known) is appearance (to someone). With the exception of Otto Neurath, the Circle was indifferent to social science, which on the whole paid at least lip service to the Enlightenment’s scientific tradition; this is what their unified science program meant (Neurath 1955).

The standard economic theorists, in particular Menger, Jevons, Walras and Marshall, had practiced scientism in the pejorative sense of the word: theirs is best called mock science. Indeed, they produced a voluminous body of work, namely neoclassical microeconomics, bristling with symbols that intimidated the non-mathematicians but were neither mathematically well-defined nor enjoyed any empirical support (Bunge 1996, 1998). In particular, they did not subject their hypotheses to empirical tests, the way Daniel Kahneman and the Zürich group of experimental economics have been doing in recent years – alas, with bad results for economic orthodoxy (see, e.g., Gintis et al. 2005).

## **2 Counter-Enlightenment Anti-scientism**

The German philosopher Wilhelm Dilthey (1883), who was heavily indebted to both Kant and Hegel, wrote the anti-scientism manifesto. The latter had both an ontological and a methodological component. The former consisted in the thesis that everything social is *geistig*, (spiritual, moral) rather than material. Its methodological partner is obvious: the social studies are *Geisteswissenschaften* (spiritual sciences), hence deserving a method of their own. This was *Verstehen*, or comprehension, or interpretation, rather than explanation in terms of mechanisms and laws.

According to Dilthey, *Verstehen* consists in the intuitive or empathic ‘understanding’ of an actor’s intentions. The tacit reasoning underlying Dilthey’s view is this. According to vulgar opinion, history is the doing of Great Men – mostly strongmen and geniuses. Hence one must empathize with them, or put oneself in their shoes, if one hopes to understand what has been going on. *Verstehen*, consists in empathy or fellow-feeling (*mit-gefühl*) according to Dilthey, and in guessing intentions or goals in the case of Weber.

Hence the need to do *verstehende* (interpretive) or ‘humanistic’ rather than scientific studies. Of course, neither Dilthey nor his followers suspected that the problem of ‘inferring’ (guessing) mental states from behavior is an inverse problem, and as such one for which no algorithms are available, so that any proposed solution to it is speculative and dubious (see Bunge 2006).

It is usually assumed that Max Weber has been the most famous of the practitioners of ‘interpretive sociology’, the subtitle of his magnum opus (Weber 1976). Besides, he regarded himself as a follower of Dilthey’s (Weber 1988). But, at least since his admirable defense of

objectivism or realism (Weber 1904), Weber tried to practice the scientific method, and occasionally even adopted historical materialism – for instance, when he explained the decline of Rome as a result of the shrinking of the slave market, which in turn resulted from the cessation of the expansionary wars, the main source of slaves (Weber 1924). In short, Weber started out his sociological career as an opponent of scientism, only to become an occasional if inconsistent practitioner of it. By contrast, his rival, Emile Durkheim (1888), was all his life a vocal defender and consistent practitioner of scientism – and as such the butt of much of the anti-scientistic rhetoric of his time.

Hermeneutics, or textualism, is an offshoot of Dilthey's thesis that communication is the hub of social life. His followers, such as Claude Lévi-Strauss, Paul Ricoeur and Charles Taylor, held that societies are 'languages or like languages'. Hence the study of society should concentrate on the symbolic, and aim at catching 'meanings', whatever these may be. (In colloquial German, *Deutung* may denote either sense or intention – an equivocation that facilitates the jump from the goal of an agent to the meaning of his utterances.)

But of course, if one focuses on words, rather than basic needs, one cannot understand why people work, cooperate, or fight. No wonder hermeneutics had nothing to say about the main social issues of our time, from oil wars to technological unemployment to the rise of China to the decline of empires. On the contrary, a scientific social science, one focusing on groups rather than individuals, and armed with statistics instead of literary metaphors, should have much to say about those huge social events.

### 3 Testing anti-scientism

How has the interpretive or humanist approach fared? Let us evaluate the pivotal theses of the anti-scientism movement, from Dilthey's *Verstehen* to mid-twentieth century hermeneutics (or text interpretation).

*1/The natural/cultural dichotomy was stillborn.*

Indeed, by the time Dilthey proclaimed it, a number of hybrid sciences had been in existence, notably human geography, psychophysics, epidemiology, and demography. And shortly thereafter further biosocial sciences emerged, among them medical sociology, physiological psychology, developmental cognitive neuroscience, social cognitive neuroscience, and socioeconomics.

For example, explaining such bottom-up processes as Puberty      Altered feelings  
Changed social behaviour; and top-down ones like Subordination      Higher corticoid level  
Lower immunity, call for the merger of neuroscience, cognitive neuroscience, and sociology.

The preceding examples should refute the charge that scientism involves micro-reduction or levelling down. When accompanied by a science-oriented ontology, scientism favors the merger or convergence of different disciplines rather than simplistic micro-reduction (Bunge 2003). All such disciplinary mergers show is that the nature/culture wall erected by the interpretive or humanistic school obstructs the advancement of science.

*2/The Verstehen method has been fruitless.*

Indeed, no interpretive (or humanistic) student of society has ever come up with true conjectures about any important economic, political or cultural processes, such as the rise and corruption of democracy. The writings of members of this school are published only in marginal journals.

However, a few students of society in the humanist camp have produced some insightful work. Suffice it to recall the brilliant essays of Norberto Bobbio, Albert O. Hirschman, and Thorstein Veblen. Also Bronislaw Malinowsky, Margaret Mead, Clifford Geertz and Napoléon Chagnon have written highly readable, if disputed, descriptions of certain exotic practices. However, none of these anthropologists was particularly interested in ordinary life except for sex: their subjects seemed to subsist on thin air. (See Trigger 2003 for an explicitly realist and materialist counterbalance.)

To see social studies at their best one must look at the work of anthropologists, archaeologists, sociologists, and historians of the scientific persuasion, such as the *Annales* school, Gunnar Myrdal's monumental and influential *American Dilemma*, the inventory of archaeological pieces before being drowned by the Aswan dam, and the massive study *The American Soldier*. The publication of the latter work in 1949 elicited the anger of the humanistic school, but it also marked the coming of age of the scientific strand of American sociology, with Robert Merton at its head and the *American Sociological Review* as its flagship.

Why has anti-scientism failed? Arguably, it failed because it condemned and spurned the scientific method, which has characterized all of the scientific achievements since the Scientific Revolution. Moreover, when tackling new cognitive problems, every contemporary investigator takes scientism for granted, as will be argued below.

#### *4 The philosophical matrix of scientific research*

Most philosophers take it for granted that science and philosophy do not intersect: that scientists start from data, or from hypotheses, and handle them without any philosophical preconceptions. A glance at the history of science should suffice to indict this thesis as a myth.

A quick examination of a few open problems will corroborate this harsh verdict.

Let us imagine how a scientist would tackle an open problem, such as (a) whether 'dark matter' and 'dark energy' defy all known physical laws, (b) which if any acquired characters are inheritable, (c) whether some animals can be in conscious states, (d) how to manage social systems, such as business firms and armies, in a rational fashion, and (e) whether the law and the courts can and should use scientific evidence in addition to the traditional methods.

Would our scientist refuse to investigate these problems, joining Noam Chomsky and his fellow 'mysterians' (radical skeptics), in holding that matter and mind are and will forever remain mysterious? Would he jump into *medias res*, instead of starting by reviewing the relevant background knowledge? Would he fantasize about anomalous events and abnormal or even supernatural powers, or would he filter out the spiritualist fantasies? Would he remain satisfied with listing appearances or symptoms, or would he conjecture possible patterns and their underlying mechanisms? Would he remain satisfied with his hunches, or

would he seek empirical corroboration? Would he confine his attention to the object of his research, or would he place it into its context or wider system? And would he dismiss out of hand all concerns about the possible harmful effect of his findings?

Admittedly, all of the previous questions are loaded. But this is the point of our exercise: to suggest that genuine scientists do not investigate the first guess that comes to mind, just as they do not question all of the antecedent knowledge. Let us see how a pro-scientism student is likely to tackle the five problems listed above.

a/ Is “dark matter” anomalous or just little-known matter? The only way to find out what whether it exists and what it is, is to use the known theoretical and experimental tools, to catch samples of it and try to detect some of its properties. At the time of writing this is a ‘hot’ question, and there is growing consensus that dark matter is the debris left by cosmic rays when going through ordinary matter rather than tiny black holes, as had been conjectured earlier. Stay tuned.

b/ Was Lamarck right after all? In recent years, genetics and evolutionary biology have been enriched with epigenetics, the newest branch of genetics, that has shown conclusively that some experiences cause the methylation of the DNA molecule, an inheritable change. This discovery did not vindicate Lamarck: it only showed that the Darwinian schema (mutation-selection) can come in more than one version. (See, e.g., Szyf et al. 2008).

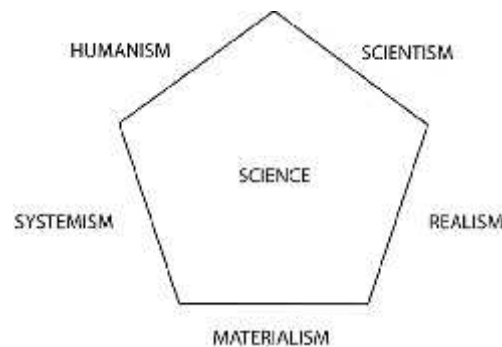
c/ Can animals be in conscious states? The popular literature is full of anecdotes about consciousness in animals of various species. But anecdotes are not hard scientific data. Some of the best such data have recently been obtained by effecting reversible thalamic and cortical inactivations – procedures that are beyond the ken of the ‘humanistic’ psychologists. It turns out that there is mounting evidence for the hypothesis that animals of various species can be conscious (e.g., Boly 2013).

d/ Can social systems be scientifically managed? Operations Research, the most sophisticated phase of management science, was born overnight from the multidisciplinary team put together at the beginning of World War II by the British Admiralty to face the great losses inflicted by the German submarines on the merchant navy that was transporting food and ammunition to England. The problem was to find the optimal size of a naval convoy. The mathematical model built by the said team, led by the physicist Patrick Blackett, showed that size to be middling, large enough to justify air coverage but not so large as to invite a fleet of enemy submarines – a result that must have disappointed the economists who love to maximize. The navy accepted this result of how newcomers to military strategy, and the naval losses decreased. This result encouraged business experts to construct mathematical models for similar problems, such as finding the optimal size of stocks (‘inventories’). Thus scientism scored another victory over the traditional or humanistic party, this time in the field of sociotechnology.

e/ Can the law become scientific? In recent years, criminology and jurisprudence, as well as their practice in the courts of law, have benefited from biology, psychology, and sociology (see, e.g., Wikström & Sampson, eds., 2006). Indeed, DNA testing is now admissible in the courts, juvenile criminal justice is slowly changing as we learn that the adolescent frontal cortex is not yet fully mature, and criminal law, as a whole, is changing as the social causes of crime are being unveiled and the rehabilitation techniques are being perfected. All these are accomplishments of scientism.

All five problems are currently being investigated on the scientific assumption that the scientific method is the royal road to objective truth and efficiency in all of the scientific and technological fields. Moreover, in all five cases more than scientism is being presupposed: realism, materialism, systemism and humanism too are being taken for granted (Bunge 2012). For instance, the study of animal consciousness assumes (a) the realist hypothesis that mental processes in the experimental animals are real rather than figments of the experimenter's imagination; (b) the materialist thesis that mental states are brain states; (c) the systemic principle that the problem under study, like all of the Big Questions, is part of a bundle of problems to be tackled anatomically as well as behaviorally; and (d) the humanist injunction to respect animal welfare – which in turn suggests refraining from prodding at random the animal's brain just to see what happens.

I suggest that all of the four above principles join scientism to constitute no less than the philosophical matrix of scientific research:



If scientific research presupposes the above-mentioned philosophical theses that characterize scientism, then this view does not oppose the humanities, as is often claimed. What the proponents of scientism oppose is the antiscientific stand adopted by Hegel, Schopenhauer, Nietzsche, Bergson, Husserl, Heidegger, the Frankfurt school, and the hermeneuticists and postmodernists. Do those enemies of rationality deserve being called 'humanists' if we accept Aristotle's definition of 'man' as 'the rational animal'?

#### 4 What's so special about science?

Why should one prefer scientism to its 'humanistic' alternative? The usual answer is: because the scientific approach works far better than its alternatives – tradition, intuition or gut feeling (in particular *Verstehen*), trial and error, and navel contemplation (in particular a priori mathematical modeling). But this answer begets in turn the question Why does science work best?

My answer is this: scientific research works best at finding objective or impersonal truths because it matches both the world and our cognitive apparatus. Indeed, the world is not a patchwork of disjoint appearances, as Hume and Kant believed, but a system of material systems; and humans can learn to use not only their senses – which yield only appearances – but also their imagination, as well as to check it in three different ways: through observation, experiment, and consilience – or compatibility with other items in the fund of antecedent knowledge (Bunge 1967).

Besides, unlike superstition and ideology, science can grow exponentially through a well-known mechanism, namely positive feedback – where some of the output is fed back into the system. But of course, the continuation of this process requires spending close of 3% of the GDP on research and development (Press 2013) – something that politicians sold on anti-scientism won't be prepared to support.

In short, adherence to scientism has been paying handsomely, economically as well as culturally, whereas betting on anti-scientistic dogmas threatens the growth of knowledge, a process that has been going on since the Scientific Revolution.

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\* Based on article in *Free Inquiry* Vol. 35, No. 1, pp. 24-31, 2015.

Readers can refer to the previous Opinion Piece on scientism in the November HPS&ST Note.

#### *Invitation to Submit*

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/>)

Susan Haack, Philosophy and Law Departments, University of Miami, *The Future of Philosophy, the Seduction of Scientism*

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*

Nicholas Maxwell, University College London, *The Crisis of Our Times and What to do About It*.

Eric Scerri, UCLA, *Bringing Science Down to Earth*

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?*

### # Recent HPS&ST Research Articles

- Barnes, M. E., Brownell, S. E. (2017) Experiences and practices of evolution instructors at Christian universities that can inform culturally competent evolution education. *Science Education*, 1-24. doi: 10.1002/sc.21317 online first
- Boerwinkel, D.J., Yarden, A. & Waarlo, A.J. (2017) Reaching a Consensus on the Definition of Genetic Literacy that Is Required from a Twenty-First-Century Citizen. *Science & Education*, 1-28. doi:10.1007/s11191-017-9934-y online first
- Çetinkaya-Aydın, G. & Çakıro lu, J. (2017) Learner Characteristics and Understanding Nature of Science: Is There an Association? *Science & Education*, 1-33. doi:10.1007/s11191-017-9939-6 online first
- Duncan, R.G., Choi, J., Castro-Faix, M. et al. (2017) A Study of Two Instructional Sequences Informed by Alternative Learning Progressions in Genetics. *Science & Education*, 1-27. doi: 10.1007/s11191-017-9932-0 online first
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- Güney, B.G. & eker, H. (2017) Discovering Socio-cultural Aspects of Science Through Artworks. *Science & Education*, 1-21. doi: 10.1007/s11191-017-9924-0 online first
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- Tibell, L.A.E. & Harms, U. (2017) Biological Principles and Threshold Concepts for Understanding Natural Selection: Implications for Developing Visualizations as a Pedagogic Tool. *Science & Education*, 1-21. doi: 10.1007/s11191-017-9935-x online first
- Wang, X., Qi, C. & Wang, K.(2017) A Categorization Model for Educational Values of the History of Mathematics: An Empirical Study, *Science & Education*, 1-24. doi:10.1007/s11191-017-9937-8 online first

### # Recent HPS&ST Related Books

Appiah, Kwame Anthony (2017) *As If: Idealization and Ideals*. Cambridge, MA: The MIT Press. ISBN 9780674975002

“Idealization is a fundamental feature of human thought. We build simplified models in our scientific research and utopias in our political imaginations. Concepts like belief, desire, reason, and justice are bound up with idealizations and ideals. Life is a constant adjustment between the models we make and the realities we encounter. In idealizing, we proceed “as if”

our representations were true, while knowing they are not. This is not a dangerous or distracting occupation, Kwame Anthony Appiah shows. Our best chance of understanding nature, society, and ourselves is to open our minds to a plurality of imperfect depictions that together allow us to manage and interpret our world.

“The philosopher Hans Vaihinger first delineated the “as if” impulse at the turn of the twentieth century, drawing on Kant, who argued that rational agency required us to act as if we were free. Appiah extends this strategy to examples across philosophy and the human and natural sciences. In a broad range of activities, we have some notion of the truth yet continue with theories that we recognize are, strictly speaking, false. From this vantage point, Appiah demonstrates that a picture one knows to be unreal can be a vehicle for accessing reality. “As If explores how strategic untruth plays a critical role in far-flung areas of inquiry: decision theory, psychology, natural science, and political philosophy. A polymath who writes with mainstream clarity, Appiah defends the centrality of the imagination not just in the arts but in science, morality, and everyday life.” (From the Publisher)

More information at: <http://www.hup.harvard.edu/catalog.php?isbn=9780674975002>

Bradley, Richard (2017) *Decision Theory with a Human Face*. Cambridge, UK: CUP. ISBN: 9781107003217

“When making decisions, people naturally face uncertainty about the potential consequences of their actions due in part to limits in their capacity to represent, evaluate or deliberate. Nonetheless, they aim to make the best decisions possible. In *Decision Theory with a Human Face*, Richard Bradley develops new theories of agency and rational decision-making, offering guidance on how 'real' agents who are aware of their bounds should represent the uncertainty they face, how they should revise their opinions as a result of experience and how they should make decisions when lacking full awareness of, or precise opinions on relevant contingencies. He engages with the strengths and flaws of Bayesian reasoning, and presents clear and comprehensive explorations of key issues in decision theory, from belief and desire to semantics and learning. His book draws on philosophy, economics, decision science and psychology, and will appeal to readers in all of these disciplines.” (From the Publisher)  
More information at: <https://tinyurl.com/yamm58fl>

Capellmann, Herbert (2017) *The Development of Elementary Quantum Theory*. Dordrecht: Springer. ISBN 978-3-319-61884-5

“This book traces the evolution of the ideas that eventually resulted in the elementary quantum theory in 1925/26. Further, it discusses the essential differences between the fundamental equations of Quantum Theory derived by Born and Jordan, logically comprising Quantum Mechanics and Quantum Optics, and the traditional view of the development of Quantum Mechanics. Drawing on original publications and letters written by the main protagonists of that time, it shows that Einstein’s contributions from 1905 to 1924 laid the essential foundations for the development of Quantum Theory. Einstein introduced quantization of the radiation field; Born added quantized mechanical behavior. In addition, Born recognized that Quantum Mechanics necessarily required Quantum Optics; his radical concept of truly discontinuous and statistical quantum transitions (“quantum leaps”) was directly based on Einstein’s physical concepts.” (From the publisher)

More information at: <http://www.springer.com/gp/book/9783319618838>

Fisch, Menachem (2017) *Creatively Undecided: Toward a History and Philosophy of Scientific Agency*. Chicago, IL: The University of Chicago Press. ISBN: 9780226514659

“Thomas Kuhn and Karl Popper are believed by many who study science to be the two key thinkers of the twentieth century. Each addressed the question of how scientific theories change, but they came to different conclusions.

“By turning our attention to ambiguity and indecision in science, Menachem Fisch, in *Creatively Undecided*, offers a new way to look at how scientific understandings change. Following Kuhn, Fisch argues that scientific practice depends on the framework in which it is conducted, but he also shows that those frameworks can be understood as the possible outcomes of the rational deliberation that Popper viewed as central to theory change. How can a scientist subject her standards to rational appraisal if that very act requires the use of those standards? The way out, Fisch argues, is by looking at the incentives scientists have to create alternative frameworks in the first place. Fisch argues that while science can only be transformed from within, by people who have standing in the field, criticism from the outside is essential. We may not be able to be sufficiently self-critical on our own, but trusted criticism from outside, even if resisted, can begin to change our perspective—at which point transformative self-criticism becomes a real option” (From the Publishers)

More information at:

<http://www.press.uchicago.edu/ucp/books/book/chicago/C/bo27256174.html>

Frankel, Henry R. (2017) *The Continental Drift Controversy*. Cambridge, UK: CUP. ISBN: 9781316616512

'... an unparalleled study of remarkable depth, detail and quality of a key development in our ideas about how the Earth functions ... because Frankel draws on his extensive oral historical work with the key players in the development of plate tectonics, this is a study which can never be repeated in terms of its proximity to the events narrated, so many of those key players now being deceased.' Robert J. Mayhew, *Progress in Physical Geography*

More information at: <https://tinyurl.com/y7caf6ab>

Ingraham, John L. (2017) *Kin: How We Came to Know Our Microbe Relatives*. Cambridge, MA: Harvard University Press. ISBN 9780674660403

“One of the grandest achievements of modern biology has been the unraveling of the relationships among the many kinds of life and the determination of the course of evolution, a great tree of all life. In *Kin*, prominent microbiologist John Ingraham traces the scientific developments that led to this achievement and some of its ramifications. Along the way, with many personal anecdotes about scientists involved, Ingraham unfolds the history of microbiology and molecular biology, the development of genetic technology, and ideas on the origin of life. *Kin* is a highly readable account of a remarkable period of scientific progress in biology.”—Norman Pace, University of Colorado

“In a delightfully personal yet accurate style, Ingraham describes the events and personalities that brought us the ‘Tree of Life,’ the representation that encapsulates the relatedness of all organisms of Earth. Readers will be educated while they are entertained as they explore fascinating aspects of life discovered through the study of our microbial relatives.”—Roberto Kolter, Harvard University

More information at:

<http://www.hup.harvard.edu/catalog.php?isbn=9780674660403>

Larson, Edward J. and Ruse, Michael (2017) *On Faith and Science*. New Haven, CT: Yale

University Press. ISBN: 9780300216172

"The most readable, comprehensive, and authoritative primer on science and religion now available. Larson and Ruse are superb story tellers."—Ronald L. Numbers, University of Wisconsin Madison

"Combining expertise in the philosophy and history of science, the distinguished authors reconsider the continuing overlapping of science and religion in world culture. The result is enlightening and morally uplifting."—John Henry, University of Edinburgh

"I heartily applaud the hope and deep wisdom in *On Faith and Science*. Its accessible history and philosophical insights of those evil and those good encounters will be useful for generations of readers."—Patricia Adair Gowaty, University of California, Los Angeles

More information at: <https://yalebooks.yale.edu/book/9780300216172/faith-and-science>

Müller, Gerd B. (Ed.) (2017) *Vivarium: Experimental, Quantitative, and Theoretical Biology at Vienna's Biologische Versuchsanstalt*. Cambridge, MA: The MIT Press. ISBN: 9780262342032

"The Biologische Versuchsanstalt was founded in Vienna in 1902 with the explicit goal to foster the quantification, mathematization, and theory formation of the biological sciences. Three biologists from affluent Viennese Jewish families—Hans Przibram, Wilhelm Figdor, and Leopold von Portheim—founded, financed, and nurtured the institute, overseeing its development into one of the most advanced biological research institutes of the time. And yet today its accomplishments are nearly forgotten. In 1938, the founders and other members were denied access to the institute by the Nazis and were forced into exile or deported to concentration camps. The building itself was destroyed by fire in April 1945. This book rescues the legacy of the "Vivarium" (as the Institute was often called), describing both its scientific achievements and its place in history.

"The book covers the Viennese sociocultural context at the time of the Vivarium's founding, and the scientific zeitgeist that shaped its investigations. It discusses the institute's departments and their research topics, and describes two examples that had scientific and international ramifications: the early work of Karl von Frisch, who in 1973 won the Nobel Prize in Physiology or Medicine; and the connection to Cold Spring Harbor Laboratory in New York"

More information at: <https://mitpress.mit.edu/books/vivarium>

Potochnik, Angela (2017) *Idealization and the Aims of Science*. Chicago, IL: The University of Chicago Press. ISBN: 9780226507057

"Science is the study of our world, as it is in its messy reality. Nonetheless, science requires idealization to function—if we are to attempt to understand the world, we have to find ways to reduce its complexity.

"*Idealization and the Aims of Science* shows just how crucial idealization is to science and why it matters. Beginning with the acknowledgment of our status as limited human agents trying to make sense of an exceedingly complex world, Angela Potochnik moves on to explain how science aims to depict and make use of causal patterns—a project that makes essential use of idealization. She offers case studies from a number of branches of science to demonstrate the ubiquity of idealization, shows how causal patterns are used to develop scientific explanations, and describes how the necessarily imperfect connection between

science and truth leads to researchers' values influencing their findings. The resulting book is a tour de force, a synthesis of the study of idealization that also offers countless new insights and avenues for future exploration." (From the Publisher)

More information at:

<http://www.press.uchicago.edu/ucp/books/book/chicago/I/bo27128726.html>

Roy, Jean-René (2017) *Unveiling Galaxies: The Role of Images in Astronomical Discovery*. Cambridge, UK: CUP. ISBN: 9781108417013

'As one of the world's leading astronomers, Jean-René Roy provides us with an insightful and readable account of the use of images to distinguish between deep-sky objects, such as nebulae and galaxies. What makes this an exceptional work is the level to which Roy, as a practitioner, engages with historians of science in developing his rich account. This engagement leads to a unique book, one that will be indispensable to understanding the significant role played by images in the history of twentieth century science.' Omar Nasim, Universität Regensburg, Bavaria.

More information at: <https://tinyurl.com/ybh8cbvd>

Siemsen, H., Testelin, J., Martin-Hansen, L., Siemsen, K.H., Andrieu, B., Fèvre, J.-M. (2017) *Transforming IQ into "Orthopédie Mentale" An Introduction to A. Binet and V. Vaney on Mental Orthopedics*, Springer, ISBN: 978-3-319-51994-4

This volume discusses Alfred Binet's works on pedagogy based on his "*Orthopédie Mentale*". Binet had empirically found that his idea of a test of general intelligence could be replaced by a test on "problem areas". These problem areas were then to be specifically addressed and improved within a relatively short time. As a result, students dramatically improved in their IQ test results. Binet died before he could publish the results. Fortunately, the rector of the school, Victor Vaney, published the results of Binet's experiments in his school. This volume provides the first English translation of Vaney's publication as well as an introduction to Binet's mostly forgotten late work

Further information at: <https://link.springer.com/book/10.1007%2F978-3-319-51994-4>

Wagner, Roy (2017) *Making and Breaking Mathematical Sense: Histories and Philosophies of Mathematical Practice*. Princeton, NJ: Princeton University Press ISBN: 9781400883783

"Mathematicians and philosophers should find this excellent book accessible and stimulating. As a mathematician, I was pleasantly surprised that some of Deleuze's philosophy could be made not just comprehensible but compelling. Among the new mathematical material, the book's account of Bombelli and the cubic equation was particularly impressive. And the story of the emergence of negative and imaginary numbers has never been told with such subtlety and clarity."--John Stillwell, University of San Francisco

"Most contemporary analytic theories give pat characterizations of the nature of mathematics. But Wagner argues that the complexity and richness of the subject resist such formulas. Accessible to philosophers and philosophically curious mathematicians, this is a fresh, interesting, and thought-provoking book."--Jeremy Avigad, Carnegie Mellon University

More information at: <https://press.princeton.edu/titles/10909.html>

Authors of HPS&ST-related papers and books are most welcome to bring them to attention of the Note's assistant editor, Paulo Maurício at [paulo.asterix@gmail.com](mailto:paulo.asterix@gmail.com) for inclusion in these sections.

## # Seeking an Assistant Editor

This monthly HPS&ST newsletter/note has been produced and distributed for the past 25+ years. Since its original printed, folded and posted beginnings, it has served as a vehicle for keeping the wide and ever-growing international community of HPS scholars who have education interests and the equally wide community of science educators with HPS interests in contact with each other, and with research and activities in the HPS&ST field.

Since 1987 its editor has been Michael Matthews, School of Education, UNSW ([m.matthews@unsw.edu.au](mailto:m.matthews@unsw.edu.au)). Over the years there have been sterling assistant editors.

For the past 3 years Paulo Maurício from Lisbon, Portugal (<https://sites.google.com/site/pauloeigenvalue/home>) has been the assistant editor, giving invaluable help in gathering material, especially information about HPS&ST publications (books and journal articles), for the newsletter, and maintaining the website.

A second assistant editor would be most useful in enhancing the content and reach of the newsletter/note. Having net access to journal holdings is important, as is an ability to make contact with the multitude of international and national HPS associations and Science Education associations with interests in the field, seeking Opinion Pieces, and other tasks. Anyone interested in giving such assistance can make direct contact with the editor.

## # Coming HPS&ST Related Conferences

January 5-8, 2018, Episteme 7, biennial conference, Homi Bhabha Centre for Science Education, Mumbai, India,

Details at: <http://www.hbcse.tifr.res.in/episteme>

February 8-10, 2018, 4th Conference of the Public Philosophy Network: 'Understanding Impact'. University of North Texas

Details at: <https://philosophyimpact.org/ppn2018/>

January 15-17, 2018, 7th International Conference on The History of Medicine in Southeast Asia (HOMSEA), Vientiane, Lao People's Democratic Republic.

Inquiries: [james.dunk@sydney.edu.au](mailto:james.dunk@sydney.edu.au)

January 20-21, 2018, Eleventh Annual Cambridge Graduate Conference on the Philosophy of Mathematics and Logic, St John's College, Cambridge

Details at: <https://www.phil.cam.ac.uk/events/camb-grad-conf-2018>

January 26-27, 2018, New Perspectives on Truth and Deflationism. University of Salzburg  
More information at: <https://truthparadoxandcontext.com/conservativeness-workshop/>

March 10-13, 2018, NARST annual conference, Atlanta, USA

Details at: <http://www.narst.org/>

March 15-16, 2018, Natural Kinds: Language and Metaphysics, Complutense University of Madrid, Spain.

- Inquiries to: Javier Cumpa: [jcarteseros@ucm.es](mailto:jcarteseros@ucm.es)
- March 22-26, 2018, Philosophy of Education Society (USA), Annual Conference, Chicago.  
Details at: <https://www.philosophyofeducation.org/conference>
- March 23-24, 2018, Joint Meeting of the South Carolina Society for Philosophy and the North Carolina Philosophical Society, Winthrop University (Rock Hill, SC), USA.  
Inquiries to: [dholiday@coastal.edu](mailto:dholiday@coastal.edu)
- March 23-24, 2018, Midsouth Philosophy Conference, Rhodes College, Memphis, TN, US.  
Details at: <https://sites.google.com/a/lclark.edu/midsouth/mpc/mupc>
- March 30-31, 2018, Sixty Years of an Idea: Peter Winch's *The Idea of a Social Science* after more than Half a Century, University of Pécs, Hungary  
More information: Dr. Akos Sivado, [akos.sivado@gmail.com](mailto:akos.sivado@gmail.com) deadline: 1st December
- April 4-6, 2018, BSHS Postgraduate Conference 2018, Centre for the History of Science, Technology and Medicine (CHSTM), University of Manchester, UK.  
Details at: <http://www.bshs.org.uk/conferences/postgraduate-conference>
- April 6-7, 2018, Humanities for STEM: Using Archives to Bridge the Two Culture Divide, NYU Tandon School of Engineering in Brooklyn, NY.  
Inquiries: [humanitiesforSTEMsymposium@nyu.edu](mailto:humanitiesforSTEMsymposium@nyu.edu)
- April 6-7, 2018, Learning from Empirical Approaches to HPS. Center for Philosophy of Science, University of Pittsburgh, Pittsburgh, PA, USA  
More information at:  
[http://www.pitt.edu/~pittctr/Events/All/Conferences/others/other\\_conf\\_2017-18/04-06-18\\_leahps/leahps.html](http://www.pitt.edu/~pittctr/Events/All/Conferences/others/other_conf_2017-18/04-06-18_leahps/leahps.html)
- April 18-20, 2018, Evolution and Moral Epistemology, Utrecht University, The Netherlands.  
More information at: <http://www.evoethics.com/evolution-and-moral-epistemology-2018.html>
- April 26, 2018, Graduate Philosophy Conference, Department of Philosophy, National Taiwan University.  
More information at: <http://ntu-graduate-philosophy-conference.webnode.tw/>
- May 18-20, 2018, 46th annual meeting of the Society for Exact Philosophy. University of Connecticut, USA.  
More information at: <http://www.phil.ufl.edu/SEP/meeting/2018/index.html>
- May 31, June 1, 2018, Is Religion Natural?, Centre for Ethics and the Centre Pieter Gillis, University of Antwerp (Belgium)  
Inquiries with Esther Kroeker: [esther.kroeker@uantwerpen.be](mailto:esther.kroeker@uantwerpen.be)
- June 4-6, 2018, Consortium for Socially Relevant Philosophy of/in Science and Engineering (SRPoiSE) 4th Conference, Academy of Medicine at Georgia Tech, Atlanta, USA  
Details at: <http://srpoise2018.weebly.com>
- June 4-7, 2018, Canadian Philosophical Association: 2018 Annual Congress. Montreal, Quebec, Canada  
More information at: <https://www.acpcpa.ca/cpages/home-page>
- June 14-15, 2018, Explanatory Power. A workshop in the DACH project: Inferentialism, Bayesianism, and Scientific Explanation. University of Geneva.  
More information at:  
[http://www.unige.ch/lettres/philo/files/1114/9917/0204/Explanatory\\_Power.pdf](http://www.unige.ch/lettres/philo/files/1114/9917/0204/Explanatory_Power.pdf)  
inquiries to: [lorenzo.casini@unige.ch](mailto:lorenzo.casini@unige.ch)
- June 14-16, 2018, Phenomenological Approaches to Physics Historical and Philosophical Perspectives, University of Graz, Austria  
Details at: <http://phenphysics.weebly.com/>
- June 18-20, 2018, Society of European Philosophy and Forum for European Philosophy



- Annual Conference, University of Essex, UK.  
More information at: <https://societyforeuropeanphilosophy.com/2017/10/09/sep-fep-2018-call-for-papers/>
- June 29 – July 1, 2018, Annual Conference of the Society for Applied Philosophy. Utrecht, The Netherlands.  
More information at: <http://www.appliedphil.org/details/event/10570598/Society-for-Applied-Philosophy-Annual-Conference-2018.html>
- June 30 – July 2, 2018, 7<sup>th</sup> SPSP Congress, Ghent University, Belgium  
Details, Erik Weber, [Erik.Weber@UGent.be](mailto:Erik.Weber@UGent.be)
- July 3-6, 2018, 9th Conference of the International Society for the Study of Argumentation (ISSA), University of Amsterdam, The Netherlands  
Details at: <https://www.conftool.net/issa2018/>
- July 5-7, 2018, The Evolution of Knowledge. &HPS7: Integrated History and Philosophy of Science, 7th conference. Leibniz Universität Hannover, Hannover, Germany  
Inquiries to: Uljana Feest [feest@philos.uni-hannover.de](mailto:feest@philos.uni-hannover.de)  
Or, Ohad Parnes [oparnes@mpiwg-berlin.mpg.de](mailto:oparnes@mpiwg-berlin.mpg.de)
- July 9-12, 2018, HOPOS 2018 International Conference, Groningen, the Netherlands  
Details at: <http://www.hopos2018.nl/>
- July 16-18, 2018, Annual Conference of the International Society for the Philosophy of Chemistry (ISPC). Department of Philosophy, University of Bristol, UK  
Inquiries to [gb0859@bristol.ac.uk](mailto:gb0859@bristol.ac.uk) More information at: <https://sites.google.com/site/socphilchem/>
- July 17-21, 2018, International Committee for the History of Technology, 45th symposium, Jean Monnet University, Saint-Étienne, France.  
Further information at: <http://www.icohtec.org/annual-meeting-2018.html>.
- August 29 – September 1, 2018, Society for Social Studies of Science – Transnational STS, Sydney, Australia  
[http://www.4sonline.org/item/4s\\_sydney\\_18\\_announced](http://www.4sonline.org/item/4s_sydney_18_announced)
- September 3-5, 2018, 4<sup>th</sup> Latin American Conference of the International History, Philosophy and Science Teaching Group (IHPST-LA), Federal University of ABC, UFABC, Santo André, Brazil  
Information at: <http://www.brenoam.com/ihpstla-2018-en>.
- September 14-17, 2018, European Society for the History of Science Biennial Conference 2018: 'Unity and Disunity', University College London's Institute of Education, London, UK  
Submissions due December 6, 2017  
More information at: <http://eshs2018.uk/index.php/call-for-papers/>
- 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/>
- November 1-4, 2018, 26<sup>th</sup> Biannual Meeting of Philosophy of Science Association, Seattle, Washington.  
More information at: <http://philsci.org/psa-biennial-meeting/psa2018-contact-information.html>