

# Newsletter of The History of Philosophy of Science (HOPOS) Working Group

ISSN 1527-9332

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## From the Editor

The third international meeting of the HOPOS Working Group is around the corner, and this issue of the Newsletter is dedicated in large part to the meeting and its locale, Vienna. A welcoming message from Friedrich Stadler, Chair of the Organizing Committee, appears below.

Given the current political events in Austria, the decision of the Working Group to continue with the meeting as scheduled was not automatic. A special committee comprising the HOPOS Steering Committee and the HOPOS 2000 Organizing Committee debated continuing as planned, and considered options for making clear the view of the Working Group and Meeting organizers that the Austrian government's current com-

position is unacceptable on humanistic grounds and in light of the history of fascism and Nazism in Austria—a history with abundant and tragic effects in the history of philosophy of science, as in many other domains.

This special committee kept the meeting in Vienna, on the grounds that protests against the Freedom Party (FPÖ) participation in Austria's government could be registered best in the Austrian context. Further, the group's opposition to the Austrian government's current composition was judged a poor reason to punish the Austrian academic community—among the most stalwart defenders of humanism, academic liberty, and social progress. To the contrary, Austria's

academe needs and deserves the support of the international scholarly community at this juncture.

The special committee further decided that the views of the Working Group and Organizing Committee should be stated in as public fashion as possible, and that two special sessions of the HOPOS 2000 meeting should be dedicated to a discussion of HOPOS-wise issues related to the current Austrian political situation. The English version of the committee's statement appears on page 3; details on the special sessions, and the rest of the meeting's agenda, can be viewed at <http://ivc.philo.at>.

Academic boycotts are much in the news of late, particularly in the US, and various other cultural institutions have reduced their

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## Welcome to HOPOS 2000

On behalf of the Organizers, the Program Committee, and the Local Organizing Committee of the *Third International History of Philosophy of Science Conference*, we cordially welcome you to HOPOS 2000 at the Vienna University Campus

in Vienna, July 6-9, 2000.

This Third Biennial Meeting of the *History of Philosophy of Science Working Group* is the first HOPOS conference to take place in Europe, and it is jointly organized together with the

*Institute Vienna Circle (IVC)/Center for Interdisciplinary Research (CIR)* of the University of Vienna. This meeting brings together a research community from all fields in philosophy of science and from throughout Europe and America, and elsewhere around the world.

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## From the Editor

*(Continued from page 1)*

ties to Austria recently. Will the decision to move ahead in Vienna, against these other trends, be judged a moral success? Whatever one's first pass reservations about visiting Austria at this point, one cannot expect such visits to accrue to the particular glory of the FPÖ, which is, after all, only a minority partner in the government. The question, at

all events, is not only what balance of good is done by attending the meeting in Vienna; it is whether keeping the meeting there is the right thing to do. The intent behind HOPOS 2000 is, in part, to contribute to an enriched scholarly and public awareness and understanding of the abhorrent character of Austria's political past—with all the obvious ramifications for judging Austria's political present. From this perspective, meet-

ing as planned in Vienna presents a special opportunity for the Working Group to undertake a rightful endeavor. To learn about the contours of this scholarly community, now in great need of our relations and support, readers may turn to the latest in the Newsletter's series of 'travelogues'. The present installment, expertly crafted by Michael Stöltzner of the Institute Vienna Circle, catalogues HOPOS-

related resources throughout Austria, with special attention to Vienna. In addition, the book reviews in this issue are dedicated to topics at least partly related to the Central European geographic context. These include a collection of essays on formalism between the wars, Max Jammer's intriguing look at Einstein's views on issues related to religion, and Michael Friedman's careful revisiting of

*(Continued on page 3)*

## Welcome to HOPOS 2000

*(Continued from page 1)*

We are proud to host this renowned conference for the first time in Vienna, one of the most important sites for the emergence of modern philosophy of science in the days of Mach, Boltzmann, and the Vienna Circle. This joint meeting was not easy to plan and realize, not the least because of the political turn in Austria at the beginning of 2000. After long and intense deliberations, the Program Committee, together with the Steering Committee of HOPOS, decided upon a Declaration concerning the political situation in Austria [*note: see p 3*], and to organize two additional special panels (panel A and B on the afternoon of July 6), both of which focus on the political context and cultural relevance of philosophy of science, especially relative to Logical Empiricism from the 1920s to the present. These additions are meant as our specific scholarly contribution to any endangering of free speech and civil liberty in a democratic

society and within the international scientific community! The history and fate of the Vienna Circle itself serves as a warning how an intellectual movement can fall under intolerant and totalitarian circumstances. We should not forget that the story of modern philosophy of science stemming from Central Europe—which at first sight may look like a success story—is also a story of loss, forced migration, and scattering of Austrian scientists to the Anglo-Saxon world. From this point of view, this transatlantic conference is an important event in the convergence and cooperation of European and American scholars in the field of philosophy of science, seen from the perspective of diverse time periods and scholarly approaches. Accordingly, the Program Committee has scheduled an innovative program (<http://ivc.philo.at>) with some 150 speakers (95 individual papers and 14 panels with 50 contributions).

The conference will be officially opened by Georg Winckler, the Rector of the University of Vienna. The keynote speech will be given by Michael Friedman (Indiana), as our 8<sup>th</sup> Vienna Circle Lecture. Other plenary speakers during the conference will be Maria Luisa Dalla Chiara (Florence), Marina Frasca-Spada (Oxford), and Lothar Schäfer (Hamburg). A special panel with Robert S. Cohen (Boston) and Rudolf Haller (Graz) will focus on the Viennese tradition in philosophy of science from a personal point of view. As part of the HOPOS Newsletter's ongoing series of "travelogues" of HOPOS related resources, the IVC has contributed a general (and perforce incomplete) survey of history and philosophy of science in Austria, with particular attention to those resources located in Vienna. We hope that this report, written by Michael Stöltzner, will assist all our speakers and participants during their stay—and in future visits. With best wishes for your travel, I look forward to

meeting you at HOPOS 2000 in Vienna—hopefully in a very pleasant summer climate.

*Friedrich Stadler  
Vienna, May 20, 2000*

### Program Committee:

Co-Chairs:  
Michael Heidelberger (Humboldt University Berlin)  
Friedrich Stadler (University of Vienna and IVC)

Gary Hatfield (University of Pennsylvania)  
Don Howard (University of Notre Dame)  
Cassandra Pinnick (Western Kentucky University)  
Joelle Proust (CREA, École Polytechnique, Paris)  
G. A. John Rogers (University of Keele)  
Rose Mary Sargent (Merrimack College)  
Thomas Uebel (University of Manchester)  
Catherine Wilson (University of British Columbia)

### Local Organizing Committee

Friedrich Stadler (IVC/CIR)  
Angelika Rzhigacek (Conference Secretary, IVC)  
Daria Mascha (IVC)  
Robert Kaller (IVC)  
Margit Kurka (CIR)  
Marianne Ertl (Department for Contemporary History)



## DECLARATION OF THE ORGANIZERS OF HOPOS 2000 CONCERNING THE POLITICAL SITUATION IN AUSTRIA

In view of the most recent political developments in Austria, especially the formation of the new federal government, we, the organizers of the HOPOS 2000 conference, undersigned below, declare:

We are greatly concerned about the consequences that the participation of the FPÖ in the Austrian government will have on civic culture in Austria and throughout the world, and, in particular, on research and teaching at the Austrian universities, which traditionally have advocated open-mindedness, international cooperation, tolerance and rational discussion of social conflicts and political alternatives. Our concern is shared by the rectors of the Austrian universities who, in a joint declaration of February 1, 2000 strongly warned against Austria's isolation, emphasizing that "European and international cooperation is of paramount importance for top achievement and for recognition of science and art, teaching and research." Accordingly, the University of Vienna has released a separate "appeal for trust, tolerance, and dialogue" with reference to the current political situation in Austria (<http://www.univie.ac.at/plaedoyer.html>).

The INSTITUTE VIENNA CIRCLE, founded in 1991 to cultivate and further develop the contributions made by the Vienna Circle to a scientific philosophy and world view, feels obliged to direct attention to the extreme danger posed by any intolerance and limi-

tation of human freedom. The fate of the Vienna Circle is an example of how, under totalitarian conditions, this will affect academic work: a large number of scholars were forced to leave Austria or lost their lives. Already once, in the 1930s, the emergence of Fascism and National Socialism resulted in forced emigration and mass-destruction, especially in the dispersion of the members and followers of Logical Empiricism and the deterioration of scholarly life in Austria. Now that Austria, after great effort, has successfully reconnected with the international world of scholars, political developments should not once again lead to nationalism, racism and intellectual isolation.

HOPOS—the History of Philosophy of Science Working Group—was founded in 1992 in order to promote research on the history of philosophical reflection on science. The HOPOS 2000 conference is the third international congress of HOPOS and its first on European soil. The HOPOS steering and program committees are strongly committed to the principle that philosophical and scientific work stand opposed to political agendas founded upon intolerance.

In light of these concerns and in the spirit of international cooperation, the organizers of HOPOS 2000 have decided to retain Vienna as the conference loca-

tion. The conference will be held in the spirit of Otto Neurath's international "republic of scholars", helping to strengthen the "other"—the democratic and cosmopolitan—Austria. We intend to address the recent political developments in Austria from a HOPOS perspective in a special session on the political and cultural contexts of 20<sup>th</sup>-century philosophy of science. Our efforts are being supported by the UNIVERSITY OF VIENNA which, through CIR (formerly ZIIS), is a co-organizer of HOPOS 2000. In its mission statement the university has pledged "to consider the relationships among politics, power and scholarship both critically and self-critically, to represent the principles of democracy both internally and externally, to develop human and

civil rights and to strive for their realization, to promote the understanding of cultures, nations and religions." In keeping with this mission statement the University of Vienna and the organizers of HOPOS 2000 strictly oppose any discrimination based on origin, race, color, gender and religion, sexual orientation, minority status, or differences in physical or mental abilities, not only in Austria but anywhere in the world.

*Michael Heidelberger,  
Friedrich Stadler  
Program chairs, HOPOS 2000,  
Vienna/Berlin,  
March 12, 2000,  
on behalf of the Institute Vienna Circle (IVC), the University of Vienna, Center for Interdisciplinary Research (CIR), the HOPOS Steering Committee and the HOPOS 2000 Program Committee*

*Note: The German and French versions of this statement are available at: <http://ivc.philo.at>.*



## From the Editor

*(Continued from page 2)*  
logical positivism. Finally, two HOPOS organizational items. First, the Working Group has a robust democracy, as evidenced by recent peaceful elections (November, 1999), bringing Thomas Uebel, Warren Schmaus, and your humble Newsletter editor to the Steering Committee. From the high perch of the organization's governance, I echo the Chair's sentiment that the Working Group is in Working Order. I hope this new political constellation does not reduce the News-

letter to a state organ... Second, the Newsletter features for the first time a membership form, in order to encourage members to pay the strictly voluntary dues, and strengthen the Working Group through the investment of its members (fill out the form, and feel a heightened sense of commitment). The reader is invited to take advantage of the ease with which the electronic form may be completed, printed, and mailed in.

Best wishes for a successful meeting in Vienna,  
Saul Fisher



## News of the profession.

### Call for Reports.

The Newsletter features occasional, concise reports on conferences of interest to HOPOI. If you are interested in writing such reports, please contact the Editor.

### Seminars, Conference and Colloquia.

- June 20, 2000  
REHSEIS and Centre Koyré, Paris, France.  
Day of study: The practice of mathematical commentaries—confrontation between diverse traditions. For information, contact Karine Chemla ([chemla@paris7.jussieu.fr](mailto:chemla@paris7.jussieu.fr)).
- June 26, 2000  
Université de Paris X—Nanterre, France.  
Centre d'Histoire et de Philosophie des Sciences colloquium: L'analogie dans les sciences. For information, contact Marta Spranzi Zuber ([zuber.spranzi@wanadoo.fr](mailto:zuber.spranzi@wanadoo.fr)).
- June 27-29 2000  
Cité des Sciences et de l'Industrie and Muséum National d'Histoire Naturelle, Paris, France.  
Colloquium: Archives et collections, sources de l'histoire des sciences et des techniques. For information, go to <http://www.rc.obs-azur.fr/cega/hdsn/sfhst.html>.
- June 28-July 1, 2000  
University of Sheffield, UK.  
Conference on the Cognitive Basis of Science. For information, write to [hang-seng@sheffield.ac.uk](mailto:hang-seng@sheffield.ac.uk).
- July 12-13, 2000  
The Royal Society, London, UK.  
Science Communication, Education and the History of Science. For information, go to <http://www.bshs.org.uk>.
- August 3-6, 2000  
St. Louis, Missouri.  
Fourth British-North American Joint Meeting of the BSHS, the HSS, and the Canadian Society for the History and Philosophy of Science: What is to be Done? History of Science in the New Millennium. For information, go to <http://depts.washington.edu/hssexec/2000/joint2000.html>.
- August 7-10, 2000  
Adam Mickiewicz University, Poznan, Poland.  
Fourth Summer Symposium on the Philosophy of Chemistry and Biochemistry: Philosophy and Methodology of Chemistry. For information, write to [zieloe@amu.edu.pl](mailto:zieloe@amu.edu.pl).
- August 17-20, 2000  
Munich, Germany.  
Annual meeting, Society for the History of Technology (SHOT). For information, contact [Mike.Allen@mzwgtg.mwn.de](mailto:Mike.Allen@mzwgtg.mwn.de).
- September 10-15, 2000  
Galveston, Texas.  
37<sup>th</sup> International Congress on the History of Medicine. For information, go to <http://library.utmb.edu/ishm/main-frame.htm>.
- September 15-18, 2000  
Imperial College, London.  
Physical Interpretations of Relativity Theory VII. For information, contact Dr. M. C. Duffy ([michael.duffy@sunderland.ac.uk](mailto:michael.duffy@sunderland.ac.uk)).
- September 22-24, 2000  
Pittsburgh, Pennsylvania.  
Joint Atlantic Seminar in the History of the Physical Sciences: Interactions Between the History and the Philosophy of Science. For information, contact [jashops+@pitt.edu](mailto:jashops+@pitt.edu).
- September 22-24, 2000  
Technical University of Dresden, Germany.  
Foundations of the Exact Sciences (Colloquium Logicum 2000). Sponsored by the German Association for Mathematical Logic and Foundational Research in the Exact Sciences (<http://www.math.fu-berlin.de/~dvmlg>). For information, go to <http://logik.mathematik.uni-freiburg.de/colloq.html>.
- September 25-30, 2000  
Università Civica «Andrea Sacchi», Nettuno, Italy.  
Darwinian Perspectives: Between Science and Philosophy. An international school of philosophy and history of biology (for graduate students) will be conducted by the Italian Society of Logic and Philosophy of Sciences. For information, go to <http://www.gedy.it/unicivica>.
- September 26-29, 2000  
Bielefeld, Germany.  
Gesellschaft fuer Analytische Philosophie (Society for Analytical Philosophy) 4<sup>th</sup> International Congress. For information, go to <http://www.gap-congress.mentis.de>.
- October 16-20, 2000  
Buenos Aires, Argentina.  
Colloquium: Milenio y Memoria—Museos y Archivos para la Historia de la Ciencia (10<sup>th</sup> meeting of the Red de Intercambios para la Historia y la Epistemología de las Ciencias Químicas y Biológicas). For information, go to <http://www.clacso.edu.ar/~fepai/milemem.htm>.
- October 29-30, 2000  
University of Puget Sound, Tacoma, Washington.  
One Hundred Years of the Quantum: From Max Planck to Entanglement. For information, go to <http://www.ups.edu/physics/maxplanck>.
- November 2-5, 2000  
Vancouver, Canada.  
PSA 2000. For information, go to <http://scistud.umkc.edu/psa2k>.
- November 2-5, 2000  
Leipzig, Germany.  
Workshop: Wilhelm Ostwald at the Crossroad of Chemistry, Philosophy, and Media Culture. For information, contact Nikos Psarros ([psarros@rz.uni-leipzig.de](mailto:psarros@rz.uni-leipzig.de)).
- November 22-25, 2000  
Universidad Complutense, Madrid, Spain.  
100 Years of Quantum The-

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## Seminars, Conference and Colloquia.

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ory—History, Physics and Philosophy. For information, contact go to <http://fs-morente.filos.ucm.es/centenario/index.htm>.

- December 8-9, 2000  
Université de Paris IV (Sorbonne), Paris, France. Cartesianism and its Opponents. Joint meeting of the Midwest Seminar in the History of Early Modern Philosophy and the Centre d'Études Cartésiennes. For information, contact Daniel Garber ([garb@midway.uchicago.edu](mailto:garb@midway.uchicago.edu)).

- December 14-16, 2000  
Berlin, Germany.  
Symposium: The Foundations of Quantum Physics before 1935. Organized by the Division of the History of Physics—German Physical Society, Max Planck Institute for the History of Science, Commission on the History of Modern Physics—IUHPS-DHS, and Interdivisional Group on History of Physics of the European Physical Society. For information, contact Dieter Hoffmann ([dh@mpiwg-berlin.mpg.de](mailto:dh@mpiwg-berlin.mpg.de)).

- January 9-10, 2001  
University of Leeds, UK. BSHS Postgraduate Workshop. For information, go to <http://www.philosophy.leeds.ac.uk/html/hps.htm>.

- February 25-27, 2001  
University of Oregon. Taking Nature Seriously: Citizens, Science, and Environment. For information, go to <http://darkwing.uoregon.edu/~tns>.

[uoregon.edu/~tns](http://uoregon.edu/~tns).

- February 19-23, 2001  
La Orotava, Tenerife, Canary Islands, Spain. International Symposium Galileo 2001. Organized by the Fundacion Canaria Orotava de Historia de la Ciencia. For information, go to <http://www.iac.es/project/galileo/galileo.html>.

- March 16-18, 2001  
Tulane University, New Orleans. Leibniz and His Correspondents—A Conference. For information, contact Paul Lodge ([plodge@mailhost.tcs.tulane.edu](mailto:plodge@mailhost.tcs.tulane.edu)).

- March 26-28, 2001  
Hamburg, Germany. From the Woodcut to the Feynman Graph: Depictions, Illustrations, and Diagrams in the History of Physics. 9<sup>th</sup> convention of the History of Physics Division—German Physical Society. For information, contact Klaus Hentschel ([khentsc@gwdg.de](mailto:khentsc@gwdg.de)).

- May/June, 2001  
Ecole Normale Supérieure, Lyon, France. Société Française d'Histoire des Sciences et des Techniques—Congrès 2001. For information, go to <http://www.rc.obs-azur.fr/cega/hdsn/societe/societe.htm>.

- July 8-14, 2001  
Mexico City, Mexico. XXI International Congress of History of Science. For information, go to [http://www.smhct.org/1circular\\_ingles.htm](http://www.smhct.org/1circular_ingles.htm).

## Competitions and Calls for Submissions.

- The Society for the Social History of Medicine (SSHM) invites submissions for its Millennium Prize Essay Competitions. Prizes will be awarded to the best unpublished essays in the social history of medicine; the deadline is December 31, 2000. For information, go to <http://www.lrz-muenchen.de/~sshm/prize.htm>.

- UNESCO is sponsoring an Encyclopedia of Life Support Systems, concerning sustainable development; articles in philosophy and its history will be included. For information, contact Thomas Magnell ([tmagnell@drew.edu](mailto:tmagnell@drew.edu)).

- Logical Analysis and History of Philosophy in-

vites submissions. Papers for Volume 4 (Origins and Foundations of Analytic Philosophy) are due June 30, 2000, and for Volume 5 (Medieval Philosophy) on May 31, 2001. For information, contact the editors, Albert Newen ([newen@uni-bonn.de](mailto:newen@uni-bonn.de)) or Uwe Meixner ([uwe.meixner@psk.uni-regensburg.de](mailto:uwe.meixner@psk.uni-regensburg.de)). To review books, contact Wolfgang Malzkorn ([malzkorn@uni-bonn.de](mailto:malzkorn@uni-bonn.de)), Review Editor.

- Studies in History and Philosophy of Biological and Biomedical Sciences seeks submissions. The word limit is 10,000, and 3-4000 words for essay-reviews. For information, contact Dr Marina Frasca-Spada ([mfs10@cam.ac.uk](mailto:mfs10@cam.ac.uk)).

## Electronic Resources.

- Website of Dr. Valter Alnis Bezerra (São Paulo), with 100 philosophy of science links: <http://members.xoom.com/valterab/philosophy/philosophy.htm>.

- Website of ALEF (Associazione di Logica Epistemologia e Filosofia): [http://www.geocities.com/alef\\_bologna](http://www.geocities.com/alef_bologna).

- Hist-analytic is a list devoted to early 'analytical' philosophy. For information, contact Steven Bayne [srbayne@channel1.com](mailto:srbayne@channel1.com) (NB: 'channel one'.com).

- Website of the Science in the 19<sup>th</sup> Century Periodical (SciPer) Project: <http://www.sciper.leeds.ac.uk>.

- Website of the Canadian Society for the History and

Philosophy of Science: <http://www.uwo.ca/philosophy/cshpsinf.html>.

- Website of the Italian National Committee for Celebration of the 400<sup>th</sup> Anniversary of the Death of Giordano Bruno: <http://www.giordanobruno.org>.

- Website of the International Society for the Philosophy of Chemistry: <http://www.georgetown.edu/earleyj/ISPC.html>

- The William Stanley Jevons homepage: <http://home.tvd.be/cr27486/Jevons.html>.

- The Conservatoire National des Arts et Metiers has created CNUM (<http://cnum.cnam.fr>), a digital library of science and engineering history.

## Books published.

- Beurton, Peter, Raphael Falk, and Hans-Jorg Rheinberger, (eds.), The Concept of the Gene in Development and Evolution: Historical and Epistemological Perspectives, Cambridge University Press, 2000. For information, go to <http://www.cup.org>.
- Bolmont, Etienne, Le rôle épistémique des analogies à l'exemple de l'électricité, du magnétisme et de l'électromagnétisme au XIXe siècle, Presses Universitaires du Septentrion, 1999. For information go to <http://www.septentrion.com>.
- Borella, Vincent, L'introduction de la Relativité en France, 1905-1922, Presses Universitaires du Septentrion. For information go to <http://www.septentrion.com>.
- Bouleau, Nicolas, Philosophies des mathématiques et de la modélisation. Du chercheur à l'ingénieur, L'Harmattan, 1999. For information, go to <http://www.editions-harmattan.fr>.
- Diderot and d'Alembert, Encyclopédie, Éditions Redon (CD-ROM and DVD formats), 1999. For information, go to <http://www.dictionnaires-France.com>.
- Herreman, Alain, La topologie et ses signes. Eléments pour une histoire sémiotique des mathématiques, L'Harmattan, 2000. For information, go to <http://www.editions-harmattan.fr>.
- Hamou, Philippe, La mutation du visible. Essai sur la portée épistémologique des instruments d'optique au 17e siècle, Presses Universitaires du Septentrion, 1999. For information go to <http://www.septentrion.com>.
- Lupacchini, Rossella & Guglielmo Tamburrini (ed.s), Grounding Effective Processes in Empirical Laws: Reflections on the Notion of Algorithm, Bulzoni Editore, Rome. For information, go to <http://www.bulzoni.it>.
- Niiniluoto, Ilkka, Critical Scientific Realism. Oxford University Press, 1999. For information, go to <http://www.oup.co.uk/isbn/0-19-823833-9>.
- Raven, Diederick, Essays of Edgar Zilsel, Volume 200, Boston Studies in the Philosophy of Science, Kluwer. For information, contact [d.raven@fss.uu.nl](mailto:d.raven@fss.uu.nl).
- Volterra, V., P. Langevin, J. Hadamard, and P. Boutroux, Henri Poincaré. l'oeuvre scientifique, l'oeuvre philosophique, Vigdor (web-published). For information go to <http://www.vigdor.com>.
- The first Thoemmes Press history and philosophy of science collection includes: Helmholtz's Treatise on Physiological Optics (reprint of the 1924/5 edition, with a new Introduction by Nicholas Wade), Weld's History of the Royal Society, and Hutton's A Mathematical and Philosophical Dictionary (1795-6). For information, go to <http://www.thoemmes.com>.

## Update on Request for Humanitarian Assistance to Sakarya University (Turkey)

Catholic Relief Services (CRS) has agreed to fund a considerable amount of rebuilding of Sakarya University in Turkey, on the heels of the big earthquakes of 1999 (see HOPOS Newsletter, volume 5, number 1). The damage to the university has been great and slow to repair. Stephen Voss ([voss@boun.edu.tr](mailto:voss@boun.edu.tr)) writes: "People tend to forget something that happened months ago, but the need goes on and on: a huge proportion of the faculty and staff of the university remain in tents... anything a HOPOS Newsletter reader sends for Turkey will be doing much good..."

Potential donors may visit the special CRS website—<http://www.catholicrelief.org/emergency/turkey.cfm>—or call this telephone number in the US—1-800-736-3467—to find out how to make a donation.



## Journals.

- HYLE (6/1). Papers are available at <http://www.uni-karlsruhe.de/~philosophie/hyle.html>.
- Foundations of Chemistry (2/2). For information, go to <http://www.wkap.nl/journalhome.htm/1386-4238>.
- Philosophia Scientiae—Journal of the Archives Poincaré. For information, go to [http://perso.wanadoo.fr/kime/fr\\_une.htm](http://perso.wanadoo.fr/kime/fr_une.htm).
- Revue d'histoire des mathématiques (V/1). For information, go to <http://smf-ihp.emath.fr/Publications/RHM/Resumes/5/html/rhm5node2.html>.
- Alliage (40). For information, go to <http://www.tribunes.com/tribune/alliage/accueil.htm>.
- Epistemologia (xx). For information, go to <http://www.tilgher.it/epistemologia.html>.
- International Studies in the Philosophy of Science (14/1). For information, go to <http://www.catchword.co.uk/titles/carfax/02698595/v14n1/contp1-1.htm>.

## Regional maps of HOPOS activity and infrastructure.

Austria (No. 4).

*Report on HOPOS-related resources in Austria.*

Recent political developments have brought Austria into the focus of media around the world. The attitude of some Austrians towards past events does not fit so nicely with images suitable for touristy post-cards. Such attitudes have sometimes found counterparts in the historical sciences, or at least in the public recognition of them. Issues such as scientific and cultural emigration—and science under Nazism—have been approached significantly later than in other countries. A central characteristic of post-war Austria's scientific culture is the set of ruptures that separate it from the First Republic (1918-1934) and the Habsburg Monarchy. Typically, ties beyond the personal were broken by exile and a very low interest in—or even impediment of—a return by prominent scientists. Consequently, many important paradigms in science and philosophy that originated in Austria found their way back only—if at all—as part of the international scientific community.

In most cases, the histories of science and philosophy of science in Austria have developed an international standing only during the last three decades. Perhaps no other field has been treated to such an extent and within quite a coherent research program—directed at overcoming the 'received view'—than the history of

the Vienna Circle and of Austrian philosophy. Yet this program was pursued mainly at the Universities of Graz and Salzburg until the foundation of the Institute Vienna Circle in 1991 provided a base for this research in the movement's home city, too. Until the 1970s many research activities in these fields were based in extra-university societies or circles, such as the one formed by Victor Kraft in the 1950s. This indicates that at least until the 1970s such research contained a political aspect.

Research in other fields has been much more divided into separate topics and personal interests, and in many areas the only historical research was conducted by scientists of the respective disciplines rather than by professional historians. Thus despite several highly interesting projects, at least for the period after 1850, historical work in post-war Austria has fallen short compared to the significance Austrian science and philosophy of science enjoyed before 1938, and in many cases foreign scholars were the first to bring to light forgotten Austrian roots of modern science.

I hope that this presentation of activities and resources can help participants in the upcoming HOPOS 2000 conference, by facilitating contacts with local researchers. To that end, I have cov-

ered a wide variety of research groups and other institutions without, however, aiming at a complete picture. To those who find themselves unjustifiably neglected, the author can only express his apologies.

I have restricted this listing of resources in two ways. First, regarding history of science—the backbone of many HOPOS activities (and more and more embedded within cultural and science studies)—I focus on groups studying theoretical developments that classically had more relevance to philosophy of science. Second, regarding philosophy of science (a well-established field only in the 20<sup>th</sup> century) I include most branches of 'Austrian philosophy'—the Bolzano tradition, the Brentano school, and Wittgenstein—and offer practically no coverage of purely philosophical research into Kant, German idealism, etc. The work of many scholars of these 'Austrian' schools is close to the philosophy of science, whereas—unlike in other countries—there have been few bridges between Austria's Kant scholars and HOPOI.

*Some general remarks on Austrian institutions.* Austrian academia can be divided as follows. All universities and the Academy of Sciences are partially autonomous state institutions. A substantial proportion of scientific activity, however, is pursued at institutions that are organized as private societies—typically with state funds—without tenured scientific staff. For

further information on Austrian academia, see the 'Austria' article in the *Encyclopedia of Higher Education*, Volume 1 (National Systems of Higher Education), 42-49 (Burton Clark and Guy Neave, editors, Pergamon Press, 1992 [Oxford, New York, Seoul, Tokyo]).

Many important research institutions are listed and linked on the Infonet Austria website (<http://infonet.onb.ac.at>). University and institute webpages are reasonably cross-linked. A synopsis on activities in philosophy of science can be found in Georg Dorn and Gerhard Schurz, "Report: After Twenty Years. Die Entwicklung der Wissenschaftstheorie in Österreich 1971-1990", *Journal for General Philosophy of Science* 24, 1993, 315-347. A comprehensive list of Austrian archives appears at [http://www.oesta.gv.at/deudiv/arch\\_oe.htm](http://www.oesta.gv.at/deudiv/arch_oe.htm), and a list of Austrian scientific libraries (*Wissenschaftliche Bibliotheken*) is available at <http://www.ac-info.ac.at/oweb.html#Bibliotheken>.

*Notes on contact information.* For dialing from overseas: the telephone country code for Austria is +43, and one adds the local prefix (e.g. '1' for Vienna). In Austria, for interurban calls, the local prefix must be preceded by '0'. The postal codes indicate Vienna's districts, which should help navigate around town. Thus, '1010' stands for the 01<sup>st</sup> district (the inner city), and '1190' for the 19<sup>th</sup>.

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## HOPOS-related resources in Austria

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### **Academic and Scholarly Institutions.**

#### **Vienna.**

##### University of Vienna

*Department for Philosophy of Science and Social Studies of Science*, Sensengasse 8/10 (tel: (0) 1 4277 47601; <http://www.univie.ac.at/Wissenschaftstheorie>)

Research interests include evolutionary epistemology (Erhard Oeser), cognitive science (Oeser, Markus Peschl), history of geological theory (Oeser, Gerhard Budin), public understanding of science, science and research policy, and gender, science, and technology (Ulrike Felt, Mona Singer).

*Department for Philosophy*, Universitätsstraße 7 (tel: (0) 1 4277 47402; <http://homehobel.phl.univie.ac.at>)

In this large department, HOPOS-relevant topics play only a marginal role but one finds Wolfgang Pircher (history of social sciences), Kurt Rudolf Fischer (analytic and Austrian philosophy), and a working group for analytic philosophy consisting of Klaus Dethloff (history of logic), Richard Heinrich (Descartes), Herbert Hrachovec, Gabriele Mras, Elisabeth Nemeth (history of logical empiricism).

*Department of History (Institut für Geschichte der Universität Wien)*, Dr. Karl Lueger Ring 1 (tel: (0) 1 4277 40834, 40837, 40833; <http://www.univie.ac.at/Geschichte/AGW>)

Several scholars have

formed a history of science working group, with various research interests: Johannes Dörflinger (history of geography), Helmuth Grössing (science and technology until 1850), Maria Petz-Grabenbauer (the University botanical garden), Veronika Hofer (the Schönbrunn zoological garden), Mitchell Ash (psychology and the forced migration after 1933), Marianne Klemun (history of botany), Sonia Horn (social history of medicine).

##### *Department for Contemporary History*

Within the department itself there are few HOPOS-relevant activities, but two affiliated institutions of note:

- *Ludwig Boltzmann Institute for Historical Social Research* (<http://www.univie.ac.at/zeitgeschichte/shspr.htm>)  
Gerhard Botz, Albert Müller, Gerald Sprengnagel edit the *Studien zur Historischen Sozialwissenschaft* (Campus Verlag, Frankfurt am Main) which produces monographs and collections on social history, history of social sciences, and methodology of historiography.

- *Ludwig Boltzmann Institute for History and Society*, Spitalgasse 2-4/Hof 1 (tel: (1) 4277-41201; [zeitgeschichte@univie.ac.at](mailto:zeitgeschichte@univie.ac.at), <http://www.univie.ac.at/zeitgeschichte/lbigg.htm>)

Directed by Erika Weinzierl, Oliver Rathkolb, and Siegfried Mattl (with Karl Fallend and Friedrich Stadler as permanent con-

tributors), the institute investigates various aspects of the history of psychoanalysis, history and philosophy of science, and history of law and justice.

*Department for the History of Medicine*, Währingerstraße 25 (tel: (0) 1-403-21-54, 408-79-00; <http://www.univie.ac.at/med-online/A5090>)

The department's library holds many important classical works in the history of biology and medicine. For information, contact Karl Holubar (Director).



Otto Neurath

*Archive of the University of Vienna*, Postgasse 9 (tel: (0) 1 4277-13901; [archiv@univie.ac.at](mailto:archiv@univie.ac.at); <http://www.univie.ac.at/archiv>)

The archive's holdings concern administrative and educational matters of the University and its faculties, and include papers of former university professors, a history of science library, and a small exhibit of documents illustrating historical development of the university. For information, contact Kurt Mühlberger (Director).

*Central Library for Physics (Zentralbibliothek für Physik in Wien)*, Boltzmannngasse 5 (tel: (0) 1-

4277-27600; [zb@ap.univie.ac.at](mailto:zb@ap.univie.ac.at); <http://www.univie.ac.at/zbph>)

This library (located in the University's Physics Building) contains books and journals of interest to historians of physics; archival holdings include the papers and letters of Erwin Schrödinger and Hans Thirring.

*Institute Vienna Circle (IVC)*, Museumstraße 5/2/19 (tel: (0) 1 5261005; [i\\_v\\_c@ping.at](mailto:i_v_c@ping.at) [note underscoring between letters]; <http://ivc.philo.at>)

Researchers affiliated with the Institute include Herta Blaukopf, Kurt Rudolf Fischer, Veronika Hofer, Eckehart Köhler, Elisabeth Nemeth, Martin Seiler, Friedrich Stadler, and Michael Stöltzner. Founded in 1991 as a learned society, the IVC's research activities center around the history of philosophy of science and the history of natural and social sciences. In the tradition of the Vienna Circle the IVC also serves as a discussion forum for current topics in the philosophy of science. Each year the IVC organizes various conferences in these fields and edits three publication series, with more than 15 items published so far in the *Institute Vienna Circle Yearbook* (Kluwer) and "German" series (Springer and Hölder-Pichler-Tempsky). Ongoing projects at the IVC include one on 'Liberalism and Logical Empiricism' and another on the 'Scientific World Conception and the Arts'. In addition to a library in the history of philosophy of sci-

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## HOPOS-related resources in Austria

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ence, the institute holds microfiche copies of the Moritz Schlick and Otto Neurath papers (featuring Neurath's exile library).

The Institute Vienna Circle is associated with the

*Center of Interdisciplinary Research of the University of Vienna (Zentrum für Überfakultäre Forschung [ZÜF]; formerly the ZIIS)*, Alserstraße 21/9 (tel: (0) 1 407 91 37 10; <http://www.univie.ac.at/ziis>)  
Beginning in 2001, the ZÜF and the IVC will organize an annual two-week "Vienna International Summer University on Scientific World Conceptions" directed primarily at graduate students and junior scholars. Each year's program will contain up to three courses within an interdisciplinary topic, such as "Unity and Plurality in Science" (2001). Typically, one course will be HOPOS-oriented.

*Other Academies and Institutes Austrian Academy of Sciences*, Dr. Ignaz Seipel Platz 2

- *Commission for History of Science, Mathematics and Medicine* (tel: (0) 1-51581/0)  
Hannelore Sexl is working on the history of radioactivity and Austrian physics.
- *Archive* (tel: (0) 1-51581-262; [bibliothek@oeaw.ac.at](mailto:bibliothek@oeaw.ac.at); <http://www.oeaw.ac.at/biblio>)

The Archive of the Academy holds the files of its committees and research institutions as well as mem-

bers' curricula vitae and session minutes since 1847. Among its more than 30 *Nachlässe* one finds Oswald Menghin, Erich Tschermak-Sysenegg, Otto Weininger, and an archive on radium research. For information contact Dr. Erich Reiter (Director).

- *Phonogramm-Archive*, Liebiggasse 5 (tel: +43 (0) 1-4277-29601; <http://www.pha.ac.at/phawww>)  
Founded in 1899, this is the oldest sound archive in the world; it was chartered to record voice portraits of eminent historical figures and to serve comparative musicology and linguistics. Collections of voice portraits (including Ludwig Boltzmann and Sigmund Exner) have recently been published in three CDs by the Verlag der Österreichischen Akademie der Wissenschaften.

*Institute of Arts and Science (Institut für Wissenschaft und Kunst [IWK])*, Berggasse 17/1 (tel: (0) 1-317 43 42; [iwk@server.phl.univie.ac.at](mailto:iwk@server.phl.univie.ac.at); <http://server.phl.univie.ac.at/~iwk/welcome.html>)

This institute (active in various branches of science and adult education) possesses a large database of the Austrian scientific emigration that contains more than 2,300 short biographies and a large bibliography.

*International Research Center for Cultural Studies (IFK)*, Danhausergasse 1 (tel: 1-504 11 26; <http://www.adis.at/ifk>)

This center promotes research and postgraduate

training in the humanities and cultural studies, with a particular focus on the history of *Kulturwissenschaften*.

*Institute of Human Sciences (Institut für die Wissenschaften vom Menschen)*, Spittelauer Lände 3, 1090 Vienna (tel: 1 313 58 0; email: [iwm@iwm.at](mailto:iwm@iwm.at); <http://www.univie.ac.at/iwm>)  
Research at the Institute is centered on 19<sup>th</sup> and 20<sup>th</sup> century political philosophy, gender studies, and political and social transformation in Central and Eastern Europe.

*Konrad Lorenz Institute for Evolution and Cognition Research*, Adolf Lorenz Gasse 2, Altenberg (tel: (0) 2242 32390; [sec@kla.univie.ac.at](mailto:sec@kla.univie.ac.at); <http://www.univie.ac.at/evolution/kl>)  
Research is mainly directed towards theoretical biology, with an emphasis on evolutionary and cognitive sciences, but there is also an interest in philosophy of biology (Werner Callebaut). In 1999, the Institute sponsored a project on the history of theoretical biology in Vienna (Veronika Hofer). For information, contact Gerd B. Müller (Director).

*Paul Lazarsfeld Society for Social Research (PLG)*, Maria-Theresien-Straße 19/9 (tel: (0) 1 319 44 45)  
This society, founded by Paul Neurath (the son of Otto Neurath), pursues empirical investigations of social and political phenomena (as developed by Paul Lazarsfeld). The Society office has parts of Lazarsfeld's papers and correspondence.

*Society for the History of the Labour Movement (Verein für Geschichte der Arbeiterbewegung)*, Rechte Wienzeile 97 (tel: (0) 1-550734)

Holdings include the papers of Friedrich Adler; of particular note is his correspondence with Albert Einstein and Ernst Mach.

*Vienna University of Economics and Business Administration (Wirtschaftsuniversität Wien)*, *Institut für Allgemeine Pädagogik*, Augasse 2-6 (tel: (0) 1-31336-50 36; <http://www.wu-wien.ac.at/inst/paedag/local.html>)

The University of Economics has a philosophy division, run by Franz Hrubi ([Franz.Hrubi@wu-wien.ac.at](mailto:Franz.Hrubi@wu-wien.ac.at)) and Gabriele Mras ([Gabriele.Mras@wu-wien.ac.at](mailto:Gabriele.Mras@wu-wien.ac.at)); research interests include philosophy of science and analytic philosophy.

*Libraries and Archives*

*Archives of the City of Vienna (Wiener Stadt und Landesarchiv)*, Rathaus (tel: (0)1-4000-84946; <http://www.magwien.gv.at/ma09>)  
Most of the 500,000 manuscripts in this collection are related to 19<sup>th</sup> and 20<sup>th</sup> century Austrian literature, but there are also many papers of figures such as Josef Popper-Lynkeus and Kurt Gödel (including Gödel's letters to his mother).

*Austrian National Library (Österreichischen Nationalbibliothek)*, Josefsplatz 1 (tel: (1) 53410-280; [onb@onb.ac.at](mailto:onb@onb.ac.at); <http://www.onb.ac.at>)

The National Library is the

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biggest library in Austria, with a collection of approximately six million items that includes papyri, manuscripts, ancient and rare books, maps, globes, music, portraits, graphics, photographs, autographs, and posters. The library is supposed to receive a copy of all books printed in Austria. A list of its holdings—including letters of Ludwig Wittgenstein, and Maria and Otto Neurath's papers of the 1940s—is available on their website.

### Austrian State Archives

This most comprehensive archive of all Austrian administrative materials is divided into several parts. A detailed overview of holdings can be found at <http://www.oesta.gv.at>.

- *Directorate General of the Austrian State Archives*, Archive of the Republic, Finance Archive, General Administrative Archive, War Archive, and Library, Nottendorfergasse 2 (tel: (0) 1 79540 504)
- *Aulic Chamber Archive*, Johannesgasse 6 (tel: (0) 1 512 54 34 17, 513 78 00 17)
- *Family, Court, and State Archive*, Minoritenplatz 1 (tel: (0) 1- 531 15 2512)

*Documentation Archive of the Austrian Resistance*, Wipplingerstraße 8 (tel: (0) 1 534 36 01779; [do-carch@email.adis.at](mailto:do-carch@email.adis.at); <http://www.doew.at>)

Founded in 1961 by scientists and former members of the resistance, this archive collects and evaluates documentary sources concerning resistance and persecution,

exile, National Socialist atrocities, the Holocaust, and right-wing extremism after 1945. Apart from educational activities, the archive is a source of expertise and analysis in political debates concerning Austria's past.

*Library for Social Sciences of the Viennese Chamber of Workers (Spezialbibliothek für Sozial- und Wirtschaftswissenschaften Arbeiterkammer Wien)*, Prinz-Eugen-Straße 20-22 (tel: (0) 1 50165-2452; [Brigitta.Brantner@akwien.or.at](mailto:Brigitta.Brantner@akwien.or.at); <http://www.akwien.or.at/webakapp/Bibliothek>)

The Library possesses rich collections on the history of socialism and the workers movement, national economy, and social politics.

### Graz.

*Department of Philosophy*, Karl-Franzens Universität, Heinrichstraße 26 (tel: (0) 316-380-2295; [philosophie@gewi.kfunigraz.ac.at](mailto:philosophie@gewi.kfunigraz.ac.at); <http://www-gewi.kfunigraz.ac.at/phil>)

HOPOS-related research at Graz mainly goes back to the school of Rudolf Haller, which championed the notion of an 'Austrian philosophy'. Wolfgang L. Gombocz, Johann C. Marek, Heiner Rutte, Werner Sauer and Haller himself study different aspects of the Austrian philosophical tradition—in particular, the Brentano School, Meinong, Logical Empiricism, and Wittgenstein. In addition, Reinhard Kamitz does research in the history of logic, and there is a

• *Ludwig Boltzmann Institute for Science of Research (LBI für Wissenschaftsforschung)*, Mozartgasse 14 (tel: (0) 316 380 2315 or 2316; [johann.goetschl@kfunigraz.ac.at](mailto:johann.goetschl@kfunigraz.ac.at)) Johann Götschl (Director, and professor at Graz) works on philosophy and methodology of natural sciences (especially physics and the work of Erwin Schrödinger), and on relations between natural and the social sciences.

*Department for Philosophy of Law*, Universitätsstraße 15, Graz (tel: (0) 316 380-3406; <http://www.kfunigraz.ac.at/rphwww>)

Peter Koller and Alfred Schramm pursue research in epistemology and philosophy of science.

*Forschungsstelle und Dokumentationszentrum für Österreichische Philosophie (FDÖP)*, Sparbersbachgasse 41 (tel: (0) 316 815380; [foepdoep@gewi.kfunigraz.ac.at](mailto:foepdoep@gewi.kfunigraz.ac.at); <http://www-ub.kfunigraz.ac.at/sosa/fdoep/fdoep.html>)

Founded in 1983 by Rudolf Haller and directed since 1999 by Alfred Schramm, the *Forschungsstelle* holds many papers and archival material on important protagonists of Austrian philosophy. The principal holding is the Brentano archive, which consists of his private library, original documents, and a microfiche copy of the complete papers. The holdings include originals, photocopies, or microfiche of papers of the Brentano School, Alexius Meinong, Karl Bühler, Alois Höfler, Ludwig Wittgenstein, and

many others. The archive owns copies of the complete papers of Felix Kaufmann, Otto Neurath, and Moritz Schlick. The collection also includes a study library, off-print collection, and database of works of Austrian philosophers. The institute regularly publishes a bibliography of works related to Austrian philosophy. The institute hosts a research project on the history of philosophy at the University of Graz and is editing the complete works of Otto Neurath, Moritz Schlick's scientific correspondence, and philosophical writings of Oskar Kraus.

*Special Research Program: Modernism—Vienna and Central Europe around 1900* (*Spezialforschungsbereich Moderne: Wien und Zentraleuropa um 1900*), Glacisstraße 23 (tel: (0) 316 380 5740; <http://www-gewi.kfunigraz.ac.at/moderne/index.html>)

This interdisciplinary research group is devoted to scholarship on the creative milieu of 'Viennese modernism' (1870-1930). These projects are noteworthy: "Crises and Ruptures—Philosophy in the struggle between metaphysics and anti-metaphysics" (Rudolf Haller, Maria E. Reicher), a study of Meinong and the Graz school in the theory of objects; "Otto Neurath and the First Vienna Circle between Modernism and Postmodernism" (Thomas Uebel), a study of pre-World War I activities of the later Vienna Circle (to be published in the Springer series of the IVC); and "Friedrich

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Wieser, modern social economist" (Karl Acham, Peter Wilhelmer, Inge Zelinika.), a study of a key figure in the Austrian School of economics.

Department of Sociology,  
Universitätsstraße 15/G4  
(tel: (0) 316 380-3550;  
<http://www.kfunigraz.ac.at/sozwww/home.html>)

Christian Fleck has made substantial contributions to the history of sociology—in particular to the history of the Austrian emigration from the social sciences. This institute also houses the

- *Archive for the History of Austrian Sociology* (tel: (0) 316 / 380-3544; <http://www.kfunigraz.ac.at/sozwww/agsoe/home.html>)  
Founded in 1987, the archive's objective is to document the history of sociology in Austria since the 19<sup>th</sup> century. Holdings include the papers of Else Frenkel-Brunswik, Konstantin Radakovic, and Othmar Spann. The archive publishes a newsletter (edited by Christian Fleck ([christian.fleck@kfunigraz.ac.at](mailto:christian.fleck@kfunigraz.ac.at)) and Reinhard Müller), and maintains a bibliographical and biographical database of Austrian sociologists.

*Archive of the University*,  
Universitätsplatz 3, Tiefparterre (tel: (0) 316-380-2205 or 2208; [archiv.zv@kfunigraz.ac.at](mailto:archiv.zv@kfunigraz.ac.at))

This archive contains the papers of many former university professors and prepares editions of documents

from its holdings, such as the lecture notes of Boltzmann. For information, contact Alois Kernbauer (Director).

### Salzburg.

#### University of Salzburg

Department for Philosophy,  
Faculty of Humanities of the  
Paris-Lodron University,  
Franziskanergasse 1 (tel: (0) 662/8044/4070; [Eva.Stieringer@sbg.ac.at](mailto:Eva.Stieringer@sbg.ac.at); <http://www.sbg.ac.at/phs/home.htm>)

Research interests include Leibniz, the Polish schools, Russell, Frege, and the Austrian philosophers (Bolzano, Brentano and his school, Logical Empiricism, Wittgenstein, and Popper). Faculty members pursuing HOPOS-relevant research include Johannes Brandl, Georg Dorn, Alexander Hieke, Edgar Morscher, Gerhard Schurz (soon to move to Erfurt), and Paul Weingartner.

- *Special Research Program: Pluralism of Theories and Paradigms* (contact the SFB Koordinationsstelle at tel: (0) 662 8044 4073; <http://www.sbg.ac.at/sfb>)  
Scientists and scholars from all four faculties investigate intra-disciplinary competition and cooperation among theoretical paradigms, by exploring case studies across disciplines within a common conceptual framework. HOPOS-relevant research programs include: "Competing paradigms in geography" (Peter Weichhart, Gerhard Arnreiter), "Rivalry of paradigms in 18<sup>th</sup> and 19<sup>th</sup> century law

science and jurisprudence" (Arno Buschmann, Michaela Strasser), "Reconstruction of theories and paradigms of the analytic theory of action" (Manfred Gabriel), and "Teleological and causal explanation in the case of complementarity between the Principle of Least Action and differential equations" (Paul Weingartner, Michael Stöltzner).



Moritz Schlick

- *Bolzano-Winter Archive* (<http://www.sbg.ac.at/fph/bolzano/bolzano-archive.html>)

This archive, founded in 1980 by Edgar Morscher, also contains part of the *Nachlass* of the Bolzano scholar Eduard Winter. Holdings include Bolzano's published works in original copies, reprints, and photocopies; secondary literature on Bolzano; works and manuscripts of Winter; and letters of Anton Günther and Johann Emanuel Veith (two pupils of Bolzano). Contact Dr. Heinrich Ganthaler ([Heinrich.Ganthaler@sbg.ac.at](mailto:Heinrich.Ganthaler@sbg.ac.at)) for further information.

*Institute for Philosophy of Science, International Centre of Research*, Mönchsberg 2a (tel: (0) 662-

842521-33; <http://www.sbg.ac.at/phs/docs/ifz.htm>)

This institute, founded by Paul Weingartner ([Paul.Weingartner@sbg.ac.at](mailto:Paul.Weingartner@sbg.ac.at)) in 1961 as a part of the "Katholisches Hochschulwerk", focuses on problems of truth, values, and norms in the sciences, and questions concerning the natural sciences and chaos theory. The institute's library has a unique collection pertaining to philosophy, foundations, and history of science, epistemology, and logic.

### Innsbruck.

#### Leopold-Franzens Universität

Department for Philosophy,  
Innrain 52 (tel: (512) 507-4021; [philosophie@uibk.ac.at](mailto:philosophie@uibk.ac.at); <http://info.uibk.ac.at/c/c6/c602>)

Members with research interests in logic, epistemology, and philosophy of science include Reinhard Kleinknecht, Peter Kügler, and Josef Zelger.

Department for Christian  
Philosophy Karl-Rahner-  
Platz 1 (tel: (0512) 507-8521; [christliche-philosophie@uibk.ac.at](mailto:christliche-philosophie@uibk.ac.at); <http://info.uibk.ac.at/c/c2/c202>)

In addition to studying standard topics in Christian philosophy, this institute has a research group in analytic ontology and philosophy of language (Edmund Runggaldier, Christian Kanzian, Winfried Löffler, Josef Quitterer).

*University Archive*  
(*Universitätsarchiv Inns-*

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bruck), Innrain 52 (tel: (0) 512/507-2091, [universitaet-sarchiv@uibk.ac.at](mailto:universitaet-sarchiv@uibk.ac.at))

This archive holds many *Nachlässe* of former university professors. For information contact Gerhard Oberkofler (Director).

*Research Institute Brenner-Archiv, Universität Innsbruck, Josef-Hirn-Straße 5, 10, Innsbruck (tel: (512) 507-4501; <http://www.uibk.ac.at/c/c6/c624/brenner.htm>)*

A major project is a digitized edition of the complete correspondence of Ludwig Wittgenstein and the published commentary, including a chronicle of Wittgenstein's life (to enable a precise dating of his works and papers). Allen Janik and Ilse Somavilla are preparing an edition of Wittgenstein's diaries that highlights the relations between his work and life, by joining parts of the diaries that have only been published separately. Another project is dedicated to the relationship of science and technology to literature (Walter Methlagl, Dr. Lachinger, Christian Paul Berger, Monika Seekircher). The archive of the institute holds the papers of Wolfgang Stegmüller.

### Linz.

*Department for Philosophy and Philosophy of Science, Johannes-Kepler University (A-4040 Linz-Auhof, tel: (0) 732-2468/7191; [philo@iwpi.uni-linz.ac.at](mailto:philo@iwpi.uni-linz.ac.at); <http://www.iwpi.uni-linz.ac.at>)*

Research interests include

philosophy of science, philosophy of psychology, critical rationalism (Volker Gadenne), philosophy of cognitive science (Rainer Born), and science studies (Gerhard Fröhlich).

### Klagenfurt.

*Karl Popper Collection in the University Library, Universitätsstraße 65-67 (tel: (0) 463-2700-206; <http://www.uni-klu.ac.at/ubk>)* Holdings include Melitta Mew's list of Popper's publications, copies of Popper's letters and manuscripts (from the Hoover Institution Archives, Stanford, California), his published works, translations and master copies with annotations, and his working library—comprising some 7,000 volumes and dedicated off-prints (listed in the online catalogue), his annotations and inserts, and collection of 205 rare and first editions, including works of Boyle, Hume, Kant, Kepler, and Newton.

### Societies.

*International Bernard Bolzano Society (<http://www.sbg.ac.at/fph/bolzano/bolzano-society.html>)* Founded in 1991 at Salzburg, this society fosters research and publications on Bolzano. The headquarters is at the University of Salzburg Philosophy department; for information, contact the secretary, Heinrich Ganthaler, at the Philosophy department (tel: (0) 662-8044-4064).

*Karl Popper Institute, Schwarzenbergstraße 8/1, Vienna (tel: 1-5120652;*

<http://www.univie.ac.at/Wissenschaftstheorie/popper>)

The Karl Popper Institute was founded in 1997 at the behest of Sir Karl's executors, to establish a research unit in his native city that would promote, analyze, and develop his philosophical writings and views. The institute has completed a bibliography of Sir Karl's works (including translations) and is now working on an extensive secondary bibliography, focusing on lesser-known publications of Eastern Europe and Asia.

*Austrian Karl R. Popper Research Association, Department of Philosophy, Heinrichstraße 26, Graz (tel: (0) 316-380-2294, <http://www.gewi.kfunigraz.ac.at/phil/Popper/index.html>)* Kurt Salamun edits the philosophy series, "Schriftenreihe zur Philosophie Karl R. Poppers und des Kritischen Rationalismus" (published by Rodopi, Amsterdam/Atlanta).

*The Austrian Ludwig Wittgenstein Society (ALWS), Markt 63, Kirchberg am Wechsel (tel: (0) 2641-2557; [alws@magnet.at](mailto:alws@magnet.at); <http://www.sbg.ac.at/phs/alws/alws.htm>)*

This society supports the analysis, tradition, and dissemination of Wittgenstein's philosophy, and promotes contemporary work on philosophy of science, epistemology, logic, ethics, and analytically-oriented philosophy of human sciences. Annual symposia take place in August in Kirchberg am Wechsel (Lower Austria) with 200-500 participants; the proceedings

have been published since 1978 (by Hölder-Pichler-Tempsky). Together with other board members, Werner and Elisabeth Leinfellner (formerly University of Nebraska, now in Vienna) have organized diverse activities of the ALWS.

*Austrian Society for Philosophy (ÖGP), Universität Linz, Institut für Wissenschaftstheorie und Philosophie, Linz (tel: (0) 732/2468-7191; <http://info.uibk.ac.at/sci-org/oegp>)* The ÖGP was founded in 1985 to provide to support contacts between philosophers of all orientations in Austria and neighboring countries. The proceedings of its biennial conferences have been published for many years (since 1996 by Hölder-Pichler-Tempsky). Contact Prof. Rainer Born ([Rainer.Born@iwpi.uni-linz.ac.at](mailto:Rainer.Born@iwpi.uni-linz.ac.at)) for further information.

*Kurt Gödel Society, Institut für Computersprachen E185/2, Vienna Technical University, Favoritenstraße 9-11, Vienna (<http://www.logic.tuwien.ac.at/kgs/home.html>)*

The Kurt Gödel Society promotes research in connection with Gödel's work in logic and history and philosophy of mathematics, as well as mathematics, physics, theology, and general philosophy. The Society holds a lecture series (Collegium logicum) and a biennial conference (Kurt Gödel Colloquia).

*Austrian Society for the History of Science (ÖGW), Ar-*  
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## HOPOS-related resources in Austria

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chiv der Universität Wien,  
Postgasse 9, Vienna (tel: 1  
4277-40834; <http://www.univie.ac.at/OGW>)

The society organizes seminars on various issues of the history of science and publishes annually the 'Mitteilungen der ÖGW' (in German). For information, contact Helmuth Grössing (President) at [Helmut.Grossing@univie.ac.at](mailto:Helmut.Grossing@univie.ac.at).

- In cooperation with the ÖGW, Christa Binder (c/o Institut für Analysis und Technische Mathematik, Technische Universität Wien, Wiedner Hauptstraße 8-10/1141, Vienna (tel: (0) 1-58801-11415; [chbinder@mail.zserv.tuwien.ac.at](mailto:chbinder@mail.zserv.tuwien.ac.at)) regularly organizes the *Neuhofen Symposium on the History of Mathematics*.

### Journals and Book Series.

- *Bolzano Publication Series (Beiträge zur Bolzano-Forschung)* (<http://www.sbg.ac.at/fph/bolzano/bolzano-publications.html>) Some ten volumes on Bolzano's work have been appeared in this series. Editors: Edgar Morscher & Otto Neumaier (Salzburg). Publisher: Academia Verlag (St. Augustin, Germany).
- *Conceptus: Zeitschrift für Philosophie*, Ass.-Prof. Dr. Otto Neumaier, Institut für Philosophie/GW, Franziskanergasse 1, 5020 Salzburg This general journal of philosophy was founded in 1967. Editors: Rainer Born, Johann Christian Marek, Otto Neumaier, Günter Posch. Publisher:

Academia Verlag (St. Augustin, Germany).

- *Conceptus-Studien* (<http://sowi.iwp.uni-linz.ac.at/dialog/CONCEPTUS/Conceptus.html>) In this book series of the journal, 11 volumes on various topics have been published.
- *Grazer Philosophische Studien (GPS)*, Institut für Philosophie der Universität Graz, Heinrichstraße 26, 8010 Graz (<http://www.rodopi.nl/home.htm>) Started in 1975 by Rudolf Haller, this journal publishes articles in all areas of analytic philosophy. Editors: Johannes Brandl, Marian David, Leopold Stubenberg. Publisher: Editions Rodopi (Amsterdam and Atlanta)
- *Studien zur Österreichischen Philosophie* 25 volumes (since 1979) address topics in Austrian philosophy and philosophy of science. Original texts by Brentano (on Mach), Friedrich Waismann, and Herbert Feigl (his Ph.D. thesis) have appeared in this series. Editor: Rudolf Haller.
- *Österreichische Zeitschrift für Geschichtswissenschaften, Institut für Wirtschafts- und Sozialgeschichte der Universität Wien*, Dr. Karl Lueger Ring 1, Vienna (<http://www.univie.ac.at/zeitgeschichte/oezg.htm>) Each issue of this quarterly is dedicated to a topic on Central European history. The ÖZG emphasizes social and economic history, history of ideas, history of science, and historical cultural studies. Publisher: Turia und Kant

- *Institute Vienna Circle Yearbook* (<http://hhobel.phl.univie.ac.at/~ivc/wk/aktivitaten/publikationen/index.htm>; <http://www.wkap.nl>)

The Yearbook contains proceedings of the annual conference on contemporary or historical topics in philosophy of science. Each volume includes documentation and important papers concerning the history of the Vienna Circle. Series Editor: Friedrich Stadler; Review Editor: Michael Stöltzner. Publisher: Kluwer (Dordrecht and Boston).

- *Publications of the Institute Vienna Circle* (<http://www.springer.at>)

This series includes monographs related to the history of Logical Empiricism and collections resulting from activities of the institute. Publisher: Springer (Vienna)

- *Scientific World Conception and Art* (<http://www.oebvht.at/philo/index.htm>)

This series documents research by the IVC on the Austrian tradition of empiricist studies of arts, and its relation to the sciences. Publisher: ÖBV-HPT.

- *Mitteilungen der Österreichischen Gesellschaft für Wissenschaftsgeschichte (ÖGW)*, Postgasse 7-9, Vienna

The annual Communications (Mitteilungen) serve as a forum for members of the ÖGW, with research and reviews on the history of science in Austria. Editor: Helmuth Grössing.

- *Zeitschrift für Wissenschaftsforschung*. Edited by Johann Götschl at the Graz Boltzmann Institut für the Science of Research,

the journal publishes papers on various aspects of the philosophy and methodology of science. Typically each issue centers around a special topic, some of which are historically oriented.



Bernard Bolzano

### Publishers.

Shelves in Austrian bookstores are typically dominated by titles published in Germany; most local publishers either cooperate with German houses or have a second headquarters there. Moreover, many Austrian scholars publish their works in Germany (and, to a much smaller extent, vice versa), so a list of Austrian publishers does not provide a true or complete picture of local research. All the same, several Austrian publishers have more than a few HOPOS-relevant titles on their lists. Most scholarly publishers are listed at <http://www.buchmarkt.at>.

- *Springer-Verlag*, Sachsenplatz 4-6, 1200 Vienna (tel: (0) 1-330 24 15; [springer@springer.at](mailto:springer@springer.at); <http://www.springer.at>) Springer's program includes a series of the IVC, a reedition of classical texts of Logical Empiricism, the

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*HOPOS-related resources in Austria*

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“Vienna” edition of Wittgenstein’s works, the “Computerkultur” series, which features books on aesthetics and the history of physiology, and the “Kleine Bibliothek für das 21. Jahrhundert”, which recently reprinted Helmholtz’s epistemological writings.

• *ÖBV-HPT*, Frankgasse 4, A-1090 Vienna (tel: (0) 1-401 36-0; <http://www.oebvhpt.at/phil/index.htm> and <http://www.lisa.or.at; office@oebvhpt.at> and [info@lisa.or.at](mailto:info@lisa.or.at))

Philosophy publications include series of the ALWS, IVC, and the Austrian Philosophical Society, as well as other titles in philosophy and history of science.

• *Böhlau-Verlag*, Sachsenplatz 4-6, A-1200 Vienna (tel: (0) 1-330 24 27; [boeh-lau@boehlau.at](mailto:boeh-lau@boehlau.at); <http://www.boehlau.at>)

Böhlau has a broad program in history publications, and a smaller one in philosophy.

• *Turia und Kant*, Schottengasse 3A/5/DG 1, A-1010 Vienna (tel: (0) 1-53-20-766; [turia.kant@turia.at](mailto:turia.kant@turia.at); <http://www.txt.de/turia.kant>)  
Turia + Kant publishes titles in philosophy and cultural studies.

• *Verlag der Österreichischen Akademie der Wissenschaften*, Postgasse 7/4, A-1010 Vienna (tel: (0) 1-51581-401; [ver-lag@oeaw.ac.at](mailto:ver-lag@oeaw.ac.at); <http://www.oeaw.ac.at/~verlag>)

Publications include materials concerning the Academy’s history and its institutions.

• *Oldenbourg-Verlag/Akademie-Verlag*, Neulinggasse 26, A-1030 Vienna

(tel: (0) 1-7126258-0 (<http://heihobel.phl.univie.ac.at/pro/wr/wOpxt.htm>; <http://www.oldenbourg.de>)

This German publisher has an Austrian branch that publishes the ‘Wiener Reihe.

Themen der Philosophie’ (edited by H. Nagl-Docekal, L. Nagl, R. Heinrich, and H. Vetter), in which a volume on Otto Neurath recently appeared.

• *Vienna University Press*, Berggasse 5, A-1090 Vienna (tel: (0) 1-310 53 56; [verlag@wuv.co.at](mailto:verlag@wuv.co.at); <http://www.wuv-verlag.at>)

This publisher offers many titles in philosophy, some related to the Austrian tradition.

**Bookstores.**

The IVC and the AWLS cooperate with *Franz Deuticke* (Helfferstorferstr.4, A-1010 Vienna (0) 1-5336429-0, <http://www.deuticke.at>), and visitors will find many books of interest on sale there. Titles in philosophy and history also can be found in other bookstores in the university area, such as *Gerold & Co.* (Am Graben 31, A-1010 Vienna tel: (0) 1-5335014-0, <http://www.gerold.at>), *Kolisch* (Rathausstraße 18, A-1010 Vienna tel. (0) 1-40634221), *Kuppitsch* (Alserstraße 4 (altes AKH), A-1090 Vienna tel: (0)1-409 13 11, <http://www.kuppitsch.com>), and *Winter* (Landgerichtsstraße 20, tel: 4051234). A bit further are *Morawa Buchhandelsges.m.b.H.* Wollzeile 11 A-1010 Vienna (<http://www.morawa.com>) and *FRIC & FRIC Interaktiv Technische Fachbuchhandlung Anton*

*Fric GmbH*. Wiedner Hauptstr. 13 A-1040 Vienna, (0) 1-505 64 52 –0 (<http://www.fric.at>), the latter being more technically-oriented. English books, mainly literary ones, can be bought at Shakespeare & Co., Sterngasse 2, A-1010 Vienna, tel: (0) 1-5355053-0. Those interested in antiquarian books may find interesting items in Vienna but typically at prices higher than in the US.

**Museums in Vienna.**

HOPOS-visitors to Austria may concentrate their tourism in Vienna; I limit coverage of museums here accordingly.

• *Technical Museum*, Mariahilferstraße 212 (tel: (0) 1 89998-0; library: (0) 1-89998-2100; [mbox@tmw.ac.at](mailto:mbox@tmw.ac.at); <http://www.tmw.ac.at/english>)

Founded in 1909, this museum reopened in 1997 after a long renovation. Holdings include the National Collection of Manufactured Products and collections on models and engineering. The library and archive holdings include materials on the history of science, technology, and industry.

• *Museum for Natural History (Naturhistorisches Museum)*, Burgring 7, A-1010 Vienna (tel: (0) 1-52 177; [Oeff.Arbeit@nhm-wien.ac.at](mailto:Oeff.Arbeit@nhm-wien.ac.at); <http://www.nhm-wien.ac.at/NHM>)

Franz Stephan von Lothringen, husband of Empress Maria Theresa, founded this collection in 1748. The collections were enlarged by 19<sup>th</sup> century scientific expeditions. Exhibition rooms of the present building (opened in 1889) preserve the systematic arrangement

of the original architects, von Hasenauer and Semper.

• *Pathological-Anatomical Federal Museum (Narrenturm)* (tel: (0) 1 406 86 72), Spitalgasse 2, 6. Hof AKH, A-1090 Vienna, (tel: (0) 1-534 83 0; <http://www.nhm-wien.ac.at/BundesMuseen/path/main.htm>)

This museum has the world largest collection of medical objects (50,000 items).

Since its foundation in 1796, the museum has collected examples of pathological mutations conserved in formaldehyde, some 200 complete skeletons, and a variety of moulages and medical instruments. Exhibits are arranged according to such themes as ‘tuberculosis’, ‘pharmacology’, ‘sexually infectious diseases’, and ‘pathology’.

• *Zoological Garden Schönbrunn (Schönbrunner Tiergarten Ges.m.b.H.)*, Maxingstrasse 13 b, A-1130 Vienna (tel: (0) 1-8779294-0; <http://www.zoovienna.at; office@zoovienna.at>)

The founder of this oldest zoo in the world (von Lothringen once again) considered the existing animal cages so small that he appointed two Dutch court gardeners to create a menagerie (completed in 1752). For the Zoo’s jubilee in 2002, a project has been launched to recount the history of the institution, its place as a center of applied veterinary and biological research, and its role in Viennese culture.

• *Museum of the Institute for the History of Medicine (Josephinum)*, Währinger

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## HOPOS-related resources in Austria

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Straße 25, A-1090 Vienna  
(tel: (0) 1-42 77-63401;  
<http://www.wien.gv.at/ma53/museen/joseph.htm>)

The holdings of this museum include famous Renaissance anatomical wax models, an exhibition of portraits, instruments, and writings of the Vienna medical school, and an endoscopy collection.

• *Sigmund Freud House*, Berggasse 19, A-1090 Vienna (tel: (0) 1-319 15 96, [freud-museum@t0.or.at](mailto:freud-museum@t0.or.at); <http://freud.t0.or.at/freud/index-e.htm>)

At Berggasse 19 (where he lived from 1891-1938), Freud wrote most of his works. His patients, including Dora, the Rat Man, and the Wolf Man came to these

rooms for psychoanalysis. Today, the apartment holds some of his antiques, manuscripts, first editions, and personal affects.

• *Austrian Museum for Social and Economic Affairs (Gesellschafts- und Wirtschaftsmuseum)*, Vogel-sangasse 36, A-1050 Vienna, (tel: (0) 1-5452551; [wirtschaftsmuseum@oegwm.ac.at](mailto:wirtschaftsmuseum@oegwm.ac.at); <http://www.oegwm.ac.at/oegwm.htm>)

Founded in 1925 by Otto Neurath, this museum presents social and economic history and analysis.

*Dr Michael Stöltzner*  
Institute Vienna Circle  
[Michael.Stoeltzner@sbg.ac.at](mailto:Michael.Stoeltzner@sbg.ac.at)



in their development. None of the papers is overly technical. On the other hand, the authors do not shy away from providing formal definitions or formulas in symbolic notation when this will add clarity.

Who should read this book?

Anyone interested in philosophical developments of the 1920s and 1930s, anyone who feels discomfort when faced with early conceptions of formalization, and anyone interested in our modern take on formalization, particularly with the rapid development of computers. The wide range of articles—on Carnap, Tarski, Turing, Ramsey, Wittgenstein, Russell, Hilbert, Bolzano, Husserl, Quine, Dewey, C.I. Lewis, Einstein, Schlick, Gödel, Lesiewski, Goodman, and others—helps account for the diverse origins of our modern ideas and prejudices.

Jean Mosconi's paper, "Calculabilité et formalization", concerns the development of the ideas of decidability and Church's Thesis. Mosconi traces their inception, and their emergence from a myriad of related ideas and alternative formulations. He suggests that the competing ideas that surrounded the notions of decidability and Church's Thesis were not all discarded for good mathematical reasons. These ideas merit our reconsideration if we want to appreciate the philosophical significance of relationships between effective proof procedures,

computability, recursion theory, formalization and incompleteness.

Mathematicians of the 1930s were still unclear as to what the terms 'formalizable' and 'computable' referred to. For example, H. Rogers qualifies the notion of 'formal' as 'mathematically precise'. In contrast, computability and the notion of an algorithm are 'informal' notions. This does not square well with Turing, who defines computability in terms of representability in an appropriate sort of system (that is, a Turing machine). An interesting upshot of Turing's definition is that the formal notions are no longer semantically interpretable. The machine is the interpreter. Contrast this with a more model-theoretic orientation where syntax is identified with the formal and semantics is identified with the informal, and we begin to see how confusions arose. Mosconi navigates us through some of these confusions with skill and agility.

Béatrice Godart-Wendling's paper, "Carnap et Ajdukiewicz deux conceptions mathématisées de la syntaxe" introduces the reader to two early approaches to the distinction between syntax and semantics. Godart-Wendling claims that the approaches of Carnap and Ajdukiewicz can be found underlying almost all modern linguistic theory. She is careful not to claim

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## Book Reviews

*Le formalisme en question: Le tournant des années 30.*

Frédéric Nef and Denis Vernant (eds). *Problèmes et controverses*. 450 pp. Paris: Librairie Philosophique J. Vrin 1998. 189 ff.

This collection of essays, all in French, concerns the notion of formalization in English, American, Austrian, German, and Polish philosophy in the 1930s. There are nineteen papers, each on a different topic in logic or epistemology—often centering on one or more philosophers and a few of their ideas. The book leaves one with an overall impression of the richness and diversity of thought in

the 1930s, balanced against a sense of common debate and inter-connectedness. It is fascinating to witness the germination of ideas on formalization—which we today take for granted, and which has largely stabilized since.

Some articles are more historical than others, but none is only historical. Historical remarks serve only to contextualize ideas or to account for anomalies

*Review of Nef and Vernant*

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that these two papers  
founded modern analysis.  
Rather, this is a conceptual  
reconstruction of great  
interest.

The difference between the  
two approaches is very  
simple. Both Ajdukiewicz  
and Carnap think of syntax  
as akin to grammar, and as  
such as amenable to  
arithmetic representation yet  
they diverge over their  
concepts of arithmetisation.  
Ajdukiewicz thought of  
arithmetisation in terms of  
Polish notation, which leads  
to a particular parsing of  
sentences. For example, the  
sentence: ‘The lilac smells  
very strongly and the rose  
blooms’ is the put into



Polish notation, and re-  
ordered as: ‘and very  
strongly smells the lilac  
blooms the rose’. The  
analysis picks out the most  
important logical connective  
in the sentence, and follows  
this by a qualifier to the first  
conjunct, a lesser qualifier  
to the first conjunct and so  
on. Two sentences are  
syntactically equivalent just  
in case their re-transcription  
in Polish notation is the  
same. Word order in a  
sentence is not as important  
as the syntactical role  
played by the words.  
*Rudolf Carnap*

This contrasts to Carnap,  
who favors parsing a  
sentence by giving it a  
Gödel number. Thus, word  
types each have a number  
and their position in a  
sentence is indicated by  
exponentiation. Two  
sentences will be  
syntactically equivalent just  
in case the types of words in  
each obey the same order.  
This reveals that the very  
notion of syntactic  
equivalence diverges  
radically between the two  
analyses. It is very  
interesting that modern  
linguistic theory restricts  
itself to these two  
approaches; one wonders  
what alternatives there  
might be.

Philippe de Rouilhan’s pa-  
per, “Tarski et l’universalité  
de la logique, Remarques  
sur le postscriptum au  
<Wahrheitsbegriff>”, traces  
a philosophical change of  
heart in Tarski. The topic of  
Tarski’s philosophical  
leanings is too often  
neglected, perhaps because  
Tarski himself declares that  
he is not a philosopher.  
Nevertheless, his work  
makes certain philosophical  
assumptions. In particular,  
in his earlier writings Tarski  
was a realist about the  
relationships between  
syntax, semantics, and  
ontology. He later became  
a relativist. More  
importantly, these  
philosophical assumptions  
underpin (and so  
accompany most naturally)  
certain mathematical  
theories. For example, type  
theory, as Tarski understood  
it, is realist. By contrast, in  
his later writings, Tarski

becomes more relativist and  
finds model theory to be  
more conducive.  
Interestingly, Tarski’s  
relativism is not the same as  
the anti-realism/intuitionism  
of Brouwer and Heyting.  
Tarski is never an  
intuitionist! Thus, from  
Tarski we can explore the  
difference between  
relativism and intuitionism  
in mathematics. This  
insight can help us  
understand anti-realism  
generally.

This is a worthwhile book.  
It is written in a different  
tradition from the one most

Anglo-Saxon readers are  
used to, and this different  
set of perspectives makes it  
thought provoking. In  
addition, the articles are all  
well researched and argued,  
so that divergences between  
views expounded in the  
book and the received views  
expressed in Anglo-Saxon  
writings are nontrivial to  
explain. Furthermore, each  
essay is exemplary in its  
clarity and perspicuity.

*Michèle Friend*  
Northamptonshire, England  
[michele@philosophers.net](mailto:michele@philosophers.net)

*Einstein and Religion.*

*Max Jammer. 279 pp. Princeton: Princeton  
University Press 1999 \$22.95.*

We are currently in the  
midst of what will be re-  
garded as a golden era in  
Einstein scholarship. The  
latest contribution is Max  
Jammer’s *Einstein and Re-  
ligion* which unequivocally  
deserves mention with the  
collected papers, love let-  
ters, and John Stachel’s  
work on 1905. Professor  
Jammer argues persuasively  
that a full appreciation of  
Einstein requires a clear  
grasp of his “cosmic relig-  
ion.”

The project was clearly per-  
sonal for Professor Jammer,  
for whom Einstein wrote the  
preface to *Concepts of  
Space*. The photograph of  
the author and Einstein on  
the dust jacket evokes  
Plato’s self-reference by  
Socrates in the *Apology*.  
This is the testimony of one

who was present with inti-  
mate access to and deep ad-  
miration of the subject. The  
sense of devotion to Ein-  
stein the man is evident  
throughout; especially in the  
breadth of the scholarship.

Care is taken in pointing out  
where specific scholars have  
interpreted Einstein to pro-  
mote pre-established agen-  
das. The use of Einstein’s  
scientific or religious ideas  
in support of organized re-  
ligion or positivistic atheism  
would be considered mis-  
guided by Einstein himself  
since the cosmic religion  
fits into neither compart-  
ment. The easy misapprop-  
riation of his religious  
thought comes from Ein-  
stein’s intentionally equivocal  
use of key theological  
terms. For example, Jammer  
distinguishes three distinct

## Review of Jammer

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meanings of “religion.” Consider the quotation, “Religion without science is blind, science without religion is lame.” The first use of “religion” is interpreted as organized religion with its anthropomorphic God, while the second refers to Einstein’s own cosmic religion in which the only god is the complete set of principles governing a deterministic clockwork universe. The third use of “religion” found in Einstein’s writings refers to the normative side of the fact/value distinction. A prominent example of this usage appears in “Science and Religion,” in which religion is “the age-old endeavor of mankind to become clearly and completely conscious of these [superpersonal] values and goals and constantly to strengthen and extend their effect.” Without separating these three distinct usages, Einstein’s writings appear inconsistent, or at least confused. Jammer sets out a more charitable interpretation of the cosmic religion showing a complex and interesting *Weltgeist*.

The book is organized into three essays. The first, “Einstein’s Religiosity and the Role of Religion in His Private Life,” biographically traces the development of the cosmic religion with an eye towards its effect upon the development of Einstein’s physical results. The treatment is as complete as any available. Every major Einstein biography is discussed critically with the analyses often resting on

sources extracted from the Einstein Archive.

Particularly fascinating is the attention paid to the texts which led to Einstein’s rejection of Jewish orthodoxy in his youth. The testimonies of Einstein and Max Talmey, who provided the books, are used to determine the titles. Inspection of their contents illuminates exactly what entered Einstein’s mind in this formative period in his philosophical life.

With the rejection of Judaism begins the evolution of the cosmic religion, the platform from which Einstein launches his physical and social investigations. It is this dual use, a combination of a thorough-going determinism and a system for making normative judgments, which forms the most puzzling aspect of Einstein’s religious doctrine. Jammer is explicit in setting out the traditional tension in these projects; if the universe is deterministic, talk of normativity seems to lose all sense. The reconstruction, unfortunately, provides no satisfactory explanation for the harmony Einstein perceived between the two parts.

The second chapter, “Einstein’s Philosophy of Religion,” contains textual analyses of Einstein’s religious discussions to develop a complete formulation of the tenets of the cosmic religion. Much is made of the connections with the writings of Baruch Spinoza and Moses Maimonides. The similarities in the heresies of these three great intellec-

tuals who stray from the Jewish mainstream are made plain. The conflicted reaction of the faith community with Einstein’s version of the schism is also well documented, as are Einstein’s responses to all sides in the resulting discussion. Curiously absent, however, are two aspects of Einstein’s philosophical background that seem germane: the influence of Hume and the logical positivists. Note is made of the influence of the *Treatise* on the discovery of the special theory, but no further discussion of Hume’s influence is undertaken. The cosmic religion shares key notions with Hume’s deism in general, but this is most conspicuous in the discussion of Einstein’s rejection of miracles. “Einstein’s argument does not disprove the possibility of what may be regarded as a miraculous event; it only denies the legitimacy of regarding such an event as miraculous (p.89).” Substituting Hume’s name for Einstein’s in this quotation would perfectly describe the argument in §10 of the *Enquiry*.

Also absent from the discussion of Einstein’s philosophical development are the logical positivists. Einstein had close ties with Moritz Schlick and Hans Reichenbach, and was familiar with both their earlier realist and later positivist works. Professor Jammer writes of Einstein that, “his first explicit essay on this subject dates from the end of 1930, and most of his writings on religion date from 1930 to 1941. These were also the years in which his interest in

the philosophy of physics was particularly keen (p.67).”

The correlation between Einstein’s concentration on matters religious and philosophical is not spurious, but may go deeper than is indicated. Don Howard in “Realism and Conventionalism in Einstein’s Philosophy of Science: The Einstein-Schlick Correspondence” shows that Einstein’s attention to the philosophy of physics was quite sharp previous to the period mentioned, when he had deep sympathies for the pre-positivist work of Schlick. But the relationship sours when Schlick’s work turns positivist. Einstein begins to write on religious matters at the same time that his former philosophical allies turn from the realist’s project of interpreting relativity to using the interpretation to support a strongly anti-metaphysical instrumentalism. Einstein only begins to write on religion when his ideological confederates abandon him and oppose all talk of religion as meaningless. While this source of intellectual alienation should not be thought of as the primary motivational factor in the appearance of Einstein’s religious writings beginning in 1930, the fuller context does seem relevant.

The third chapter, “Einstein’s Physics and Theology,” concerns itself not with Einstein’s own thought, but with the theological and philosophical legacy of Einstein’s physics. The physical results of relativity theory and Einstein’s

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### Review of Jammer

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hidden variable interpretation of quantum mechanics have been claimed as support by advocates of many different theological perspectives. A wide net is cast in surveying these discussions, Jammer acting as reporter and not participant. Many of the controversies addressed are fodder for entire books in their own right, so the treatment of each is relatively synoptic. If adopted as course text, this chapter could be effectively serve as the basis for an in-

teresting interdisciplinary course on religion and modern physics.

Einstein and Religion is the next in the line of important and impressive contributions to Einstein scholarship. It is bold and well argued. Max Jammer has given us a gem that deserves all of the attention it will no doubt receive.

Steve Gimbel

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ing. This misleading simplicity, Friedman says, has become a stereotypical characterization. Moritz Schlick, he argues, saw as the central task of philosophy not to provide an epistemological foundation for science, but to redefine its own task in the light of recent revolutionary scientific advances. Friedman is in error here: the literature of the period—and some passages Friedman himself quotes—makes it clear that the verification principle was the Vienna Circle's central position.

Another misleading stereotypical characterization, according to Friedman, is the view of logical positivism as a form of philosophical 'foundationalism', through provision of a philosophical justification of scientific knowledge from a stable Archimedean platform situated outside the (historically given) sciences. This conception, Friedman says, represents "an almost total perversion" of the attitude of logical positivists, whose starting point was a rejection of all such philosophical pretensions. Carnap's *Logische Aufbau der Welt* was not an attempt to provide empirical knowledge with an otherwise missing epistemological foundation or justification by the use of logic and sense data; rather, he suggests, it was an attempt to employ recent advances in logic and in the empirical sciences (in *Gestalt* psychology in particular) to fashion a scientifically respectable substitute for traditional epistemology. As recent scholarly investigations into the origins of

logical empiricism have revealed, the simple, radical empiricist picture of logical positivism is a serious distortion. I suggest that this is not so: Carnap did offer a substitute, but it was a substitution of one set of foundations for another. Admittedly, Carnap weakened his concepts of justification and truth in "Testability and Meaning" (1936-37) and later works. His original hope for a bedrock foundation changed into a proposal for weaker one, which nonetheless retained the structure and function of a proposed foundation of knowledge. Neurath adumbrated a new, nonfoundationalist theory of rationality as criticism, a theory that Popper presented in striking clarity.

According to Friedman, the movement's central philosophical innovation was not "...a new version of radical empiricism, but rather a new conception of *a priori* knowledge and its role in empirical knowledge". Under the influence of late nineteenth and early twentieth century developments in the foundations of geometry, logic, and mathematical physics, the logical positivists effected a profound transformation of the Kantian conception of principles that bear the status of synthetic *a priori* knowledge. The result was a relativized conception of principles known *a priori*—principles that evolve with the progress of empirical science, and continue to serve as a background framework for empirical science. The attempt to articulate this new conception of "relativized *a priori* prin-

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### Reconsidering Logical Positivism.

Michael Friedman. XIX + 252 pp. Cambridge: Cambridge University Press 1999 \$49.95.

The literature on logical positivism and on its exponents is immense. It follows several, and often contrasting, interpretative lines. This volume is a collection of essays originally published over a period of fifteen years (and slightly revised). In it Friedman aims at a radical revision of our understanding of the significance of the rise and fall of this philosophical movement. Since that movement aimed at a total refashioning of philosophy, its adherents might have welcomed a radical rereading of its ideas; since it aimed at a definitive end to all philosophical controversies, however, perhaps they would not have welcomed new controversy.

Friedman's point of departure is historical. The mi-

gration of logical positivists to Great Britain and the United States led them to transplant their intellectual ambitions onto new soil. This could not be done easily—stripped of the German intellectual tradition that constituted their original philosophical context, they became identified with a rather simple version of radical empiricism. (This simple version was exemplified already by a first effort to transplant their ideas, in Ayer's *Language, Truth and Logic*, 1936). According to this version, the core of neopositivism is the principle of verifiability: only propositions having direct implications for sensory experience are 'cognitively meaningful'; other propositions, including traditional theology, metaphysics, and ethics, are completely devoid of mean-

## Review of Friedman

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ciples”, and to describe in detail how such principles make objective scientific experience possible, is the enduring philosophical legacy of the movement, according to Friedman. It is interesting to note that Russell ascribes this view to Poincaré in the preface to the English version of his philosophical writings.

Reconsidering Logical Positivism is divided into three sections. Part One concentrates on early works of Schlick, Carnap, Weyl, Reichenbach and Poincaré, most of which were completed before 1922, when the Vienna Circle was founded. Friedman looks at their works on the philosophical significance of the emerging science, and explores logical positivism’s intimate connections with some of the most important scientific developments of the new century (notably, the development and propagation of Einstein’s theory of relativity and the debates on the foundations of mathematics). The new conception of *a priori* knowledge emerges from these mathematical and scientific developments in close interaction with Marburg neo-Kantianism and Husserlian phenomenology. Part Two focuses on Ludwig Wittgenstein’s *Tractatus Logico-Philosophicus* and on Carnap’s *Aufbau*, the two pillars of the new philosophy. In particular, Friedman presents the former as centrally concerned with a

new conception of the objectivity of empirical scientific knowledge having fundamentally Kantian roots (again, in accord with Russell’s observation). Carnap’s *Logical Syntax of Language* is discussed in Part Three, where Friedman shows how the new conception of “relativized *a priori* principles” discussed in Part One is combined with Carnap’s logically based conception of scientific objectivity discussed in Part Two. Thus, Part Three weaves together the preceding parts.

Friedman considers the logical positivist movement as a part of the history of philosophy, and not as a live philosophical option. He provides the reader with a comprehensive analysis of some interesting *a posteriori* knowledge of one of the 20<sup>th</sup> century’s most important intellectual *milieus*, based on a close reading of texts. Yet achieving a better understanding of the background, development, and context of logical positivism, Friedman stresses, is not merely of historical interest. It helps us comprehend our present situation as it has evolved (for better or worse) directly from logical positivism.

However, the result is not completely impartial. At least on one point—and not a minor one—he seems to me a victim of the same stereotyping he rightly opposes throughout the book. On the very first page he writes that “the official demise” of logical positivism took place sometime between the publication of

Quine’s “Two Dogmas of Empiricism” (1951) and Kuhn’s *The Structure of Scientific Revolutions* (1962). According to this “official” and stereotypical history, Popper was a minor logical positivist who introduced falsifiability as a criterion of meaning and exaggerated his differences with Carnap and Neurath. However, this is a “convenient” history, which rests on an emphasis of certain aspects and criticisms of logical positivism, and overlooks other aspects. Such a history makes Popper a stereotypical logical positivist, and (unintentionally) endorses the stereotype of the logical analyst as a foundationalist and as a meaning analyst.

A deadly criticism of logical positivism was offered already in the early Thirties: Popper, in his *Logik der Forschung* (1934), argued that scientific theories cannot be verified, that the verifiability criterion is mistaken both as a criterion of demarcation of science and as a criterion of meaning, and that metaphysical theories are meaningful and unavoidable components of any scientific theory. Intellectual and political circumstances brought Popper to write his book as he did—and also eventually resulted in a distortion of his legacy. His critique sprang from a marginal Kantian perspective foreign to logical positivism. The movement, however, regarded it as a contribution to their own scientific philosophy. He vainly protested, insisting that his objections were lethal. The movement never

recognized the significance of those objections—as persisting “official” histories of the movement’s demise still testify.

Popper’s relationship to the movement was problematic. He was willing to acknowledge that it had made a great contribution to his philosophy, he developed his philosophy in dialogue with theirs but refused to take the linguistic turn, he admired the early work of Schlick and took courses under him, he studied Wittgenstein, Hahn, and Carnap (also attending the latter’s seminars)—but he was no logical positivist. Frank and Schlick recognized his originality and provided him with the opportunity to publish his book in the series they edited, *Schriften zur wissenschaftlichen Weltauffassung*. Neurath, Carnap, and Morris did the same, when they accepted Kuhn’s *Structure* for publication in their *International Encyclopedia of Unified Science*. This resulted in a similar confusion that persists today.

Friedman notes that “... we will never successfully move beyond our present philosophical situation until we attain a properly self-conscious appreciation of our own immediate historical background”. Here he is speaking of the Vienna Circle; this thought applies to Popper’s opposition to that Circle with equal force.

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