

Department II

Johann Bernhard Wilbrand, *Gemälde der organischen Natur in ihrer Verbreitung auf der Erde*, 1810, detail. 2 vol., Gießen/ Darmstadt 1809–10. Courtesy Leiden University Library



ACAD *Gemälde der organischen Natur in ihrer Verbreitung auf der Erde.* LYON
v. GÖTTE U. HANSEN WANDERER
gewidmet von B. Wilbrand und L. Rütgen Prof. in Gießen.

Department II

Ideals and Practices of Rationality

Director: *Lorraine Daston*

Introduction: Histories of the Self-Evident

The research projects of Department II (established 1995) chart the history of epistemic categories and practices that have become so fundamental to modern science and culture that they seem self-evident. Examples described in this report include “observation” (*History of Scientific Observation*), “self” (*The Cerebral Subject*), “gender” (*Gender Studies of Science*), and the division between the “natural” and “human” realms (*Between the Natural and Human Sciences*). A new project to start in 2010 will examine the histories of “data” and “information” in the sciences (*Sciences of the Archive*). Since the hidden histories of these taken-for-granted objects only become visible when contexts vary, most projects have a comparative dimension, spanning many centuries, several cultures, or both (*Science in Circulation*).

Research projects in Department II embrace one or more Working Groups, which aim toward a collective publication, as well as the projects of individual scholars who are writing doctoral dissertations, monographs, book chapters, and journal articles on topics related to the main theme. A bibliography of publications listed by researcher’s name may be found at the end of this volume. Past Working Group publications of Department II include: *The Moral Authority of Nature* (2004), *Things that Talk: Object Lessons from Art and Science* (2004), and *Natural Laws and Laws of Nature in Early Modern Europe* (2008). *Histories of Scientific Observation* will appear in 2010. In addition to the several meetings of the Working Groups, conferences are organized each year in conjunction with departmental research projects. The organization of this report follows that of the Department’s major research projects: Working Groups, conferences, and individual projects are listed under each project rubric, as well as information on institutional cooperation partners.

At any given time, there are approximately twenty-five resident scholars in Department II: pre- and postdoctoral fellows, visiting scholars, and research scholars. Their backgrounds are international and multi-disciplinary; their stays are funded by both MPIWG stipends and external sources (see individual entries for details). All resident scholars gather at the bimonthly departmental colloquium to discuss pre-circulated works-in-progress, starting with the all-day departmental workshop in September.

Approximately three-quarters of the colloquium presentations are by resident scholars of the department; the remaining quarter are by invited guest speakers—both from within and outside the Institute—selected for the relevance of their work to departmental research projects. Informal seminars and reading groups also offer venues for discussion of shared research interests by resident scholars, often joined by colleagues of other departments and research groups.

The reporting period 2008–9 brought several welcome additions to Department II. Two new, externally-financed independent research groups, led by Nikolaus Bacht (*The Intellectual and Cultural History of Listening*) and Suparna Choudhury (*Constructions of the Brain: Critical Neuroscience and the Adolescent Brain*), widened the scope of the Department's research. Thanks to a major grant to McGill University, the generosity of the Staatsbibliothek Berlin, and the support of the MPIWG Library and IT Group, it has been possible to digitize and make available to scholars rare medieval astronomical manuscripts (*Islamic Scientific Manuscripts Initiative*). Finally, a new predoctoral fellowship program, *Writing-Up Fellowships*, advertised internationally to provide outstanding doctoral candidates with six months of support for the final stages of their dissertations, has enlivened the Department with new faces and new ideas.



Departmental Colloquium, September 2009
Photo: Kirsti Anderson

Project

History of Scientific Observation

DURATION 2005–2010

MPIWG ORGANIZERS *Lorraine Daston, Andreas Mayer, Tania Munz, Kelley Wilder*

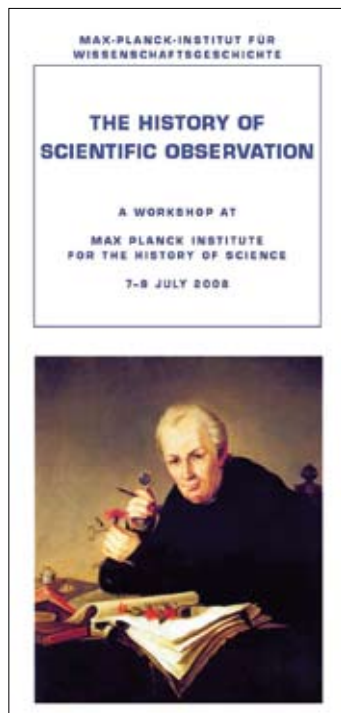
COOPERATION PARTNERS Freie Universität Berlin, Germany; Universiteit van Amsterdam, The Netherlands (additional external funding of individual scholars noted below).

Observation is the most pervasive and fundamental practice of all the modern sciences, both natural and human. It is also among the most refined and variegated of these practices. Observation educates the senses, calibrates judgment, picks out objects of scientific inquiry, and forges communities. Its instruments include not only the naked senses, but also tools such as the telescope and microscope, the questionnaire, the photographic plate, the glassed-in beehive, the Geiger counter, and a myriad of other ingenious inventions designed to make the invisible visible, the evanescent permanent, the abstract concrete. Where is society? How blue is the sky? Which way do X-rays scatter? Over the course of centuries, scientific observers have devised ways to answer these and many other riddles—and thereby redefined what is under investigation by the way in which it is investigated. Observation discovers the world anew.

Yet scientific observation lacks its own history: why? Countless studies in the history and philosophy of science treat one or another aspect of observation: observation through telescope and microscope, observation in the field or in the laboratory, observation versus experiment, theory-laden observation. But observation itself is rarely the focus of attention and almost never as an object of historical inquiry in its own right. Observation seems at once too ubiquitous, too basic, and altogether too obvious to merit a history. One might well wonder whether a history of observation wouldn't simply be the history of science in its vast entirety—or the still more vast history of experience.

This project challenges these assumptions by showing what a history of scientific observation might look like, at least in its broad outlines, from the fifth to the late-twentieth century: how a vernacular practice became an epistemic category. It is the history of how experience has been shaped and sharpened to scientific ends: how the senses have been schooled and extended; how practices for recording, correlating, and displaying data have been developed and refined; and how the private experiences of individuals have been made collective and turned into evidence.

→ see also: *Knowledge in the Making*, p. 136



Working Group on the History of Scientific Observation

June 27–29, 2006; July 3–6, 2007; July 7–9, 2008; November 5, 2008

ORGANIZERS *Lorraine Daston* (MPIWG), *Kelley Wilder* (MPIWG/ De Montfort University, Leicester, U.K.), *Elizabeth Lunbeck* (Vanderbilt University, U.S.A.)

The volume produced by this Working Group, *Histories of Scientific Observation*, edited by Lorraine Daston and Elizabeth Lunbeck, will be published by the University of Chicago Press in fall 2010. It features engaging episodes drawn from a wide variety of sciences, ranging from meteorology, medicine, and natural history to economics, astronomy, and psychology. The contributions spotlight how observers have scrutinized everything—from seaweed to X-ray radiation, household budgets to the emotions—with ingenuity, curiosity, and perseverance verging on obsession. This book makes a compelling case for the significance of the long, surprising, and epistemologically significant history of scientific observation, a history full of innovations that have enlarged the possibilities of perception, judgment, and reason.

Members

- *Domenico Bertoloni-Meli** (University of Indiana at Bloomington, U.S.A.)
- *Charlotte Bigg** (MPIWG/CRNS, Paris, France)
- *Daniela Bleichmar* (University of Southern California, Los Angeles, U.S.A.)
- *Jimena Canales** (Harvard University, U.S.A.)
- *Lorraine Daston** (MPIWG)
- *Otniel Dror** (Hebrew University, Israel)
- *Michael Gordin** (Princeton University, U.S.A.)
- *Elizabeth Lunbeck* (Vanderbilt University, U.S.A.)
- *Harro Maas** (Universiteit van Amsterdam, The Netherlands)
- *Andrew Mendelsohn** (Imperial College London, U.K.)
- *Mary Morgan* (London School of Economics, U.K.)
- *Katharine Park** (Harvard University, U.S.A.)
- *Gianna Pomata** (Università di Bologna, Italy)
- *Theodore M. Porter** (University of California, Los Angeles, U.S.A.)
- *Anne Secord** (University of Cambridge, U.K.)
- *Mary Terrall** (University of California, Los Angeles, U.S.A.)
- *Kelley Wilder** (MPIWG/De Montfort University, Leicester, U.K.)

(* members of Working Group also involved as resident scholars in the MPIWG research group on the History of Scientific Observation)

History of Scientific Observation

Conferences**The Educated Eye: Photographic Evidence in Scientific Observation**

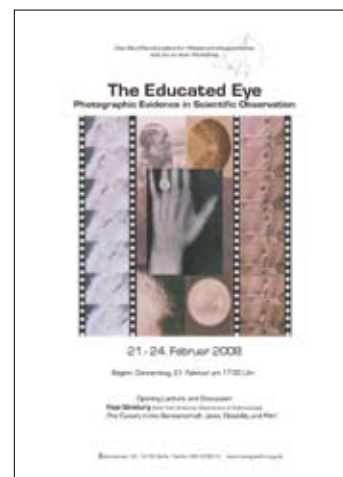
February 21–24, 2008

ORGANIZERS *Kelley Wilder* (MPIWG), *Gregg Mitman* (University of Wisconsin-Madison, U.S.A.)

Where do photography and film stand in the larger picture of scientific observation's history? And how exactly does their use in observation translate into evidence? Presentations on topics, ranging from the earliest photographs in 1839 to images from the Mars Rover mission in 2004, addressed these questions. The negotiation and renegotiation of documents made with photographic media stood at the center of discussion, bridging the methodological approaches of scholars from anthropology, film, and media studies, history of science, and the history of art and visual culture. The organizers have formed a working group on the archiving of photography and film, called "Documenting the World" (see below under section "Sciences of the Archive"), which aims to produce a collaborative book and website.

Participants

- *Jordan Baer* (Columbia University, U.S.A.)
- *David Benin* (University of California, San Diego, U.S.A.)
- *Jimena Canales* (Harvard University, U.S.A.)
- *Lisa Cartwright* (University of California, San Diego, U.S.A.)
- *Scott Curtis* (Northwestern University, U.S.A.)
- *Elizabeth Edwards* (University of the Arts, London, U.K.)
- *Peter Geimer* (ETH Zürich, Switzerland)
- *Faye Ginsburg* (New York University, U.S.A.)
- *Tal Golan* (University of California, San Diego, U.S.A.)
- *Anna Grimshaw* (Emory University, U.S.A.)
- *Robin Kelsey* (Harvard University, U.S.A.)
- *Stefanie Klamm* (MPIWG/Paul Getty Research Institute, Los Angeles, U.S.A.)
- *Gregg Mitman* (University of Wisconsin, U.S.A.)
- *Amos Morris-Reich* (University of Jerusalem, Israel)
- *Tania Munz* (MPIWG)
- *Michael Pritchard* (DeMont University, U.K.)
- *Sarah de Rijcke* (University of Groningen, The Netherlands)
- *Gareth Syvret* (DeMont University, U.K.)
- *Fatimah Tobing Rony* (University of California, Irvine, U.S.A.)
- *Janet Vertesi* (Cornell University, U.S.A.)
- *Kelley Wilder* (MPIWG/DeMont University, U.K.)



Animal Subjects Under Observation

July 11–13, 2008

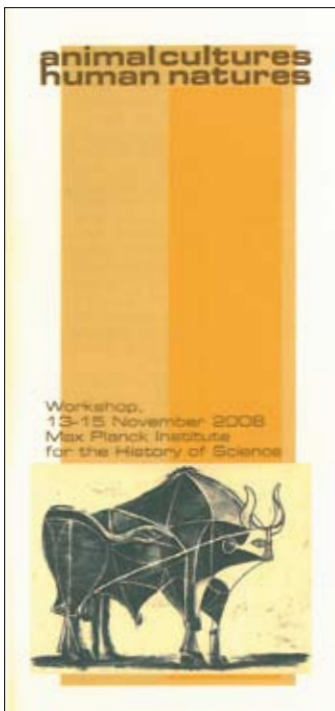
ORGANIZER *Andreas Mayer* (MPIWG)

The workshop traced the emergence of the notion of the “animal subject” in the late-nineteenth century. In the discussion of various historical examples (ranging from ornithology to animal hypnosis), the participants discussed the problems of anthropomorphism and empathy by focusing on the interaction of humans and animals in practices of scientific observation.



Participants

- *Jonathan Burt* (Ferry House, Bottisham, U.K.)
- *Lorraine Daston* (MPIWG)
- *Vinciane Despret* (Université de Liège, Belgium)
- *John Forrester* (University of Cambridge, U.K.)
- *Erica Fudge* (Middlesex University, U.K.)
- *Robert Kirk* (Manchester University, U.K.)
- *Dominique Lestel* (CNRS, Ecole Normale Supérieure Paris, France)
- *Ruth Leys* (Johns Hopkins University, U.S.A.)
- *Lydia Marinelli* (Sigmund Freud Museum, Austria)
- *Andreas Mayer* (MPIWG)
- *Alexandre Métraux* (Universität Mannheim, Germany)
- *Erika Milam* (MPIWG/University of Maryland, U.S.A.)
- *Gregg Mitman* (University of Wisconsin, U.S.A.)
- *Tania Munz* (MPIWG)
- *Alison Winter* (University of Chicago, U.S.A.)



Animal Cultures – Human Natures: Participant Observation in the History of the Natural and Social Sciences

November 13–15, 2008

ORGANIZER *Erika Lorraine Milam* (MPIWG)

This workshop brought together scholars from a variety of disciplinary backgrounds to reconsider the material and social interactions of animals and humans, expand our shared methodological toolbox, explore approaches for questioning our sources, and discuss techniques for analyzing the shifting relationships of human-animal, self-other, and domestic-wild. By investigating the intimate connections we share with non-human animals, we sought to move beyond the construction of human and animal as “nothing else but opposites.”

Participants

- *Pamela Asquith* (Gabriola, Canada)
- *Avigdor Edminster* (University of Minnesota, U.S.A.)
- *Jean-Baptiste Gouyon* (MPIWG/University of York, U.K.)
- *Maria Kronfeldner* (MPIWG/Universität Bielefeld, Germany)
- *Andreas Mayer* (MPIWG)
- *Erika Milam* (MPIWG/University of Maryland, U.S.A.)
- *Tania Munz* (MPIWG)
- *Christian Reiß* (MPIWG)
- *Harriet Ritvo* (Massachusetts Institute of Technology, U.S.A.)
- *Charlotte Sleigh* (University of Kent, U.K.)
- *Katrin Solhdju* (Zentrum für Literaturforschung Berlin, Germany)
- *Marianne Sommer* (ETH Zürich, Switzerland)
- *Brett Walker* (Montana State University, U.S.A.)
- *Markus Wild* (Humboldt-Universität zu Berlin, Germany)

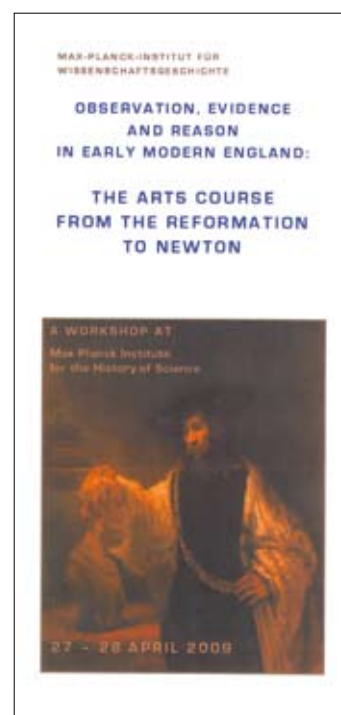
Observation, Evidence, and Reason in Early Modern England: The Arts Course from the Reformation to Newton, April 27–28, 2009

ORGANIZERS *Daniel Andersson* (MPIWG), *Richard Serjeantson* (Cambridge University, U.K.)

This workshop attempted to answer some fundamental questions in the study of the intellectual history of early modern England. What is the best and most academically responsible way of gaining “hermeneutic control” over the texts that we study? To what extent does the informal assumption of the unity of knowledge affect the notion of disciplinary formation and the scholarly career? How widely diffused were the practices of the arts course outside of the academy? What is the relation of university learning to the alternative, usually scientific, think-tanks of the period, such as the Royal Society of London? Individual texts in the Renaissance curriculum were examined against the background of the larger concepts that are the building blocks of the course: observation, analysis, evidence, reason, proof, persuasion.

Participants

- *Daniel Andersson* (MPIWG)
- *Andreas Blank* (Universität Paderborn, Germany)
- *Michael Edwards* (University of Cambridge, U.K.)
- *Guido Giglioni* (The Warburg Institute, U.K.)
- *Doug Jesseph* (North Carolina State University, U.S.A.)
- *Jill Kraye* (The Warburg Institute, U.K.)
- *Rhodri Lewis* (University of Oxford, U.K.)
- *Peter Mack* (Warwick University, U.K.)
- *Edward Paleit* (University of Exeter, U.K.)
- *Jean-Louis Quantin* (Sorbonne, Paris)
- *Fred Schurink* (University of Newcastle, U.K.)
- *Richard W. Serjeantson* (Cambridge University, U.K.)



History of Scientific Observation
Planned Conference

Sciences of Communication in the Twentieth Century

March 18 –20, 2010

ORGANIZERS *Tania Munz* (MPIWG), *Veronika Lipphardt* (MPIWG)

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History of Scientific Observation
Individual Projects



Daniel Andersson

Daniel Andersson (Postdoctoral Fellow, MPIWG)

Styles of Observation and Experience in Renaissance Aristotelianism

Scholars have too readily assimilated the concepts of “empiricism” and “observation,” eliding the differences between the two. With a suitably expanded concept of observation, one may begin to arrive at a rather different and more variegated account of the cognitive styles that the forms of Renaissance natural philosophy enabled than has hitherto been possible. How might such a task be accomplished? Chiefly by looking at the appeals to an “intuitive observation,” which is one of the many forms of analogical reasoning hallowed in and developed by Aristotelian natural philosophy. The concept of “experience” would also benefit from a more intensive historicization than it has received.



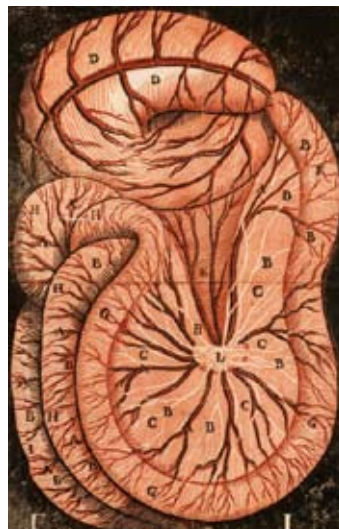
Domenico Bertoloni-Meli

Domenico Bertoloni-Meli (Visiting Scholar, Indiana University Bloomington, U.S.A)

The Role of Vivisection in the Seventeenth Century

Unlike other forms of investigation, such as microscopy, vivisection was not new in the seventeenth century. Nonetheless, it was developed in new ways and led to a number of strikingly original results. The study examines eight especially prominent cases ranging from William Harvey and Gasparo Aselli to Anton Nuck and Johann Jakob Wepfer. A special focus is on the relation to practices of scientific observation. These

two forms of investigation may seem antithetic, since vivisection is the archetypal example of an interventionist technique, whereas observation is considered to be passive and non-interventionist; in many cases, however, the analysis has shown that vivisection co-existed with observation and with techniques drawn from natural history.



White milky veins, discovered through vivisection. Gasparo Aselli, *De lactibus*, Milan 1627

Charlotte Bigg (MPIWG/Centre Alexandre Koyré, CNRS, Paris, France, funded by the Deutsche Forschungsgemeinschaft, DFG)

Observing Brownian Motion

The eruption of new microscales on scientific research agendas contributed to a profound transformation in scientific practices and social organization in the early-twentieth century. Focusing on Brownian motion research in early-twentieth century France, Charlotte Bigg examined the investigations carried out by the physical chemist Jean Perrin, the physicist Paul Langevin, and the mathematician Emile Borel, focusing on how theory and experiment were deployed in the study of Brownian motion to produce for the first time “visual” evidence of the existence of atoms and of the statistical nature of the second law of thermodynamics.

Through a close analysis of the relatively circumscribed field of Brownian motion research c. 1900, the momentous scientific, disciplinary, and social stakes at play in this period can thus be investigated for the French context and compared to the better known British and German cases.



Charlotte Bigg

Displacement of individual particles. Jean Perrin, “Mouvement Brownien et réalité moléculaire”, *Annales de Chimie et de Physique*, ser. 8, vol. 18, p. 81, 1909

Marie-Noëlle Bourguet (Visiting Scholar, Université de Paris VII, France)

The Scientific Traveler’s Notebook

Through a close scrutiny of a set of manuscript notebooks by naturalists and scientific travelers such as Aimé Bonpland, Leopold von Buch, L. J. Gay-Lussac, Alexander von Humboldt, André Michaux, Horace-Benedict de Saussure, and Dominique Villars, this study explored the gestures and cognitive practices at work in the routine writing of a scientific traveler’s journal. Two main sets of questions were investigated: first, the recording process itself, which explored the relationship between paying attention (“taking note”) and recording (“taking notes”); and second, the uses of notebooks and their role in the production and construction of scientific knowledge, which show the scientific observer using notes as a kind of *camera obscura*, at once a reduction and a substitute for the world.



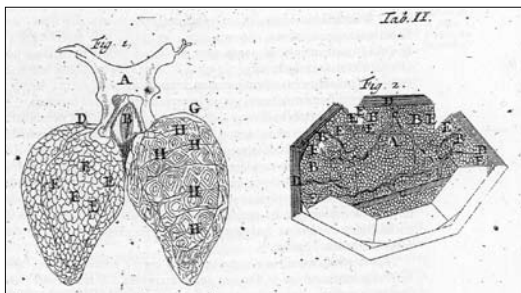
Marie-Noëlle Bourguet

Marco Bresadola (Visiting Scholar, University of Ferrara, Italy)

The Virtues of Observational Practice in Italian Scientific Culture, ca. 1660–1700

During the second half of the seventeenth century, observation was often portrayed as a diligent, patient, and dispassionate investigation into natural particulars. The project

analyzes the meaning and use of these terms in the practice and discourse of Italian life sciences, focusing on Marcello Malpighi’s work in microscopic anatomy and the debates in which he was involved. What was the relationship between epistemology and morals in the early history of



Marco Bresadola

Frog’s lungs seen through the microscope. M. Malpighi, “De pulmonibus observationes anatomicae,” 1661. In *Opera omnia. Lugduni Batavorum: Apud Petrum Van der Aa*, p. 330, 1687

scientific observation, as it was performed and discussed by the historical actors? To explore this question, the project takes up recent scholarly work on the “passions of inquiry” (e.g. curiosity and wonder) and on scientific “personae” in early modern history.



Lorraine Daston

Lorraine Daston (Director, MPIWG)

Collective Observation

Natural philosopher Edmond Halley’s 1686 map of the world winds is emblematic of a new scientific predicament that emerged in the mid-seventeenth century: how to coordinate, compile, and integrate the contributions of many different observers, scattered over time and space. Individual savants who routinely repeated their own observations of stellar positions or plant genera or human bronchia were confronted with the same dilemma: how to synthesize many views of the same object, each differing slightly or strikingly from the others, into a single observation? One solution was to edit numerous observations from hither and yon into a “synopsis,” verbal or visual, as Halley did with the reports of mariners and travelers in his map. Another, often used in botany, was to try to calibrate the senses of the multiple observers beforehand,

A map of the world winds. Edmond Halley, “An Historical Account of the Trade Winds, and Monsoons, observable in the Seas between and near the Tropicks, with an attempt to assign the Physical cause of said Winds.” *Philosophical Transactions of the Royal Society of London* 16 (1686)



so as to standardize assessments of color, texture, taste, and smell. Still another, increasingly frequent in astronomy, averaged the values of divergent observations of the same celestial object. All these techniques of collective observation posed problems of ontology and social organization: a general object had to be consolidated out of multiple observations; authority had to be exercised to consolidate a collective out of multiple observers. New kinds of visualization and community made collective empiricism possible.



Elizabeth Edwards

Elizabeth Edwards (Visiting Scholar, University of the Arts, London, U.K.)

The Photographic Survey Movement

As part of a larger project on the photographic survey movement in England 1885–1918, Elizabeth Edwards worked on how ideas of scientific “objectivity” the “systematic,” and networks of amateur science, especially those of geology, anthropology, and archaeology, were understood and absorbed by amateur photographers making survey archives for the future. These values, at the blurred boundaries between amateurs and emerging disciplinary professionals, were used to both organize and legitimize their activities. The study explored in particular the ways in which amateur photographers engaged in “survey work” drew their values and structures from the British

Association for the Advancement of Science which, at the period, instigated a number of survey and visual projects largely dependent on amateur observers, including photographers.



Photographers of the Warwickshire Photographic Survey 1894
© Birmingham City Library

Erna Fiorentini (Visiting Scholar, Freie Universität Berlin, Germany, funded by SFB 626 “Aesthetic Experience and the Dissolution of Scientific Limits,” Deutsche Forschungsgemeinschaft, DFG)

Protomodern Observers and the Camera Lucida, 1806–1850

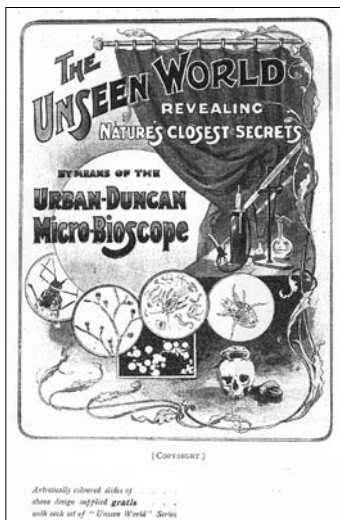
The project studied an early-nineteenth century visual habit, the use of the *camera lucida*, in relation to contemporary practices of observation and representation and corroborated the thesis that this new mode of seeing implied the conciliation of individual perception with the demands of images expected to convey “objective” observational data. In the fields of landscape sketching, natural history, and microscopy, the relationship between sensory, cognitive, and emotional experience and their translation into images became the object of practical as well as theoretical reflections. The results will appear in *Prismatisches Sehen. Die Camera Lucida als Metapher des Visuellen im frühen 19. Jahrhundert* (Göttingen: Wallstein Verlag, 2010).



Erna Fiorentini



Reverend Calvert Jones (?) sketching with a Wollaston *camera lucida*. Pencil *camera lucida* drawing. The National Library of Wales, ca. 1830



Oliver Gaycken (Visiting Scholar, Temple University, Philadelphia, U.S.A., funded by Temple University, Philadelphia)

Devices of Curiosity: Early Cinema and Popular Science

The book project uncovers a largely uncharted area of early cinema history: the popular science film. This genre developed out of the general efflorescence of popular science in the second half of the nineteenth century, so one aspect of understanding these films requires locating them in the contexts of previous practices of visualization. The recovery of this lost film genre also reframes better-known fictional genres by arguing for stylistic and thematic similarities that indicate the wider impact



Oliver Gaycken

Illustration of a promotional lantern slide for *The Unseen World* (F. Martin Duncan, 1903), Charles Urban papers, 10–1, National Media Museum, Bradford, England

of the popular scientific aesthetic, which influenced the history of special effects, the creation of the non-theatrical film market, and the intersection of the avant-garde and the documentary. The book manuscript is currently under review at University of California Press.



Michael Gordin

Michael Gordin (Visiting Scholar, Princeton University, U.S.A., funded by Princeton Bicentennial Preceptorship)

International History of the Atomic Monopoly, 1945–1949

Michael Gordin finished a book on the practices of epistemology in the arena of atomic weapons—what one might call “nuclear observation.” The book focuses on the period of the American atomic monopoly—the period between the atomic bombing of Hiroshima and Nagasaki in early August 1945, and the Soviet detonation of their own atomic device in late August 1949. Both the Soviets and the Americans invested tremendous resources in “detecting” aspects of the other side’s nuclear program, and the level of attention, the high stakes, and the extreme efforts by both sides to maintain secrecy highlight the epistemological problems that historians of science have observed in many other, less geopolitically fraught situations. The project was published as *Red Cloud at Dawn: Truman, Stalin, and the End of the Atomic Monopoly* (New York: Farrar, Straus & Giroux, 2009).



Nils Güttler

Nils Güttler (Predoctoral Fellow, Humboldt Universität zu Berlin, funded by the Studienstiftung des Deutschen Volkes)

The Role of Maps in Nineteenth-Century Plant Geography

The dissertation deals with new strategies used to visualize spatial knowledge in late-eighteenth and nineteenth-century botany, especially “plant geography”—a discipline founded by Alexander von Humboldt and others around 1800 that aimed to investigate the distribution of plants (and plant communities) on the surface of the earth. Plant-geographical maps were among the earliest so-called “thematic maps,” which represented the earth not as a politically, but naturally structured space with naturally



Pflanzengeographische Eintheilung der Erdoberfläche/Östliche Hemisphäre. Joakim Frederik Schouw, *Grundzüge einer allgemeinen Pflanzengeographie*, Atlas, Tafel XII, Berlin 1823

restricted regions. At the end of the nineteenth century, botanical maps again played a prominent role in contemporary discussions about the interaction between plants and their environment in the nascent science of ecology. They also revealed that the maps influenced the institutional organization of botanical knowledge, holding together a heterogeneous scientific community at the academic periphery, e. g., gardeners and cartographers at publishing companies.



Ludmila Hyman

(Postdoctoral Fellow, MPIWG)

Clinical Observation and the Making of Cultural-Historical Psychology

L. S. Vygotsky, A. R. Luria, and A. N. Leontiev pioneered cultural-historical psychology—a research program that they developed during the radical social upheavals in Russia that followed the socialist revolution. They developed new methods of psychological research, including

observation of people in naturalistic contexts. This project explores how these psychologists' ideas flourished in the socio-cultural context of the new Soviet society and in connection with their personal experience. The study also addresses how they used language to represent their concrete experiences and observations, and how they reasoned from observations to conclusions. The ultimate goal of the study is to test the theories of the Soviet psychologists against their practice.



Ludmila Hyman

Image employed in studies of eidetic memory in children. L. S. Vygotsky and A. R. Luria, *Etyudy po istorii povedeniia: Obeziana. Primitiv. Rebenok*. Moscow, 1930

Theresa Kelley (University of Wisconsin, Madison, U.S.A., funded by the University of Wisconsin, Madison)

Color Beginnings

Color was long excluded from the “characters” or “differentiae” used to describe organic species and differentiate them. For late-eighteenth and early-nineteenth-century artists working in watercolor and related media, color looked like an instance of what Hans-Jörg Rheinberger describes as the “unstable,” “strange and facile reality of scientific objects,” something akin to an epistemic thing whose nature and usefulness European artists and theorists of this era repeatedly redefined, in the midst of debates about the relationship of prismatic color to so-called “natural” colors. In German, French, and English treatises, claims about color shift unsteadily from material pigments to accounts of prismatic colors. Across these works, the object-ness of color, its putative materiality, is consistently at issue in ways that specify a shifting, ongoing history of objects of knowledge.



Theresa Kelley

Matthias Klotz, *Gründliche Farbenlehre*, Munich (self published) 1816

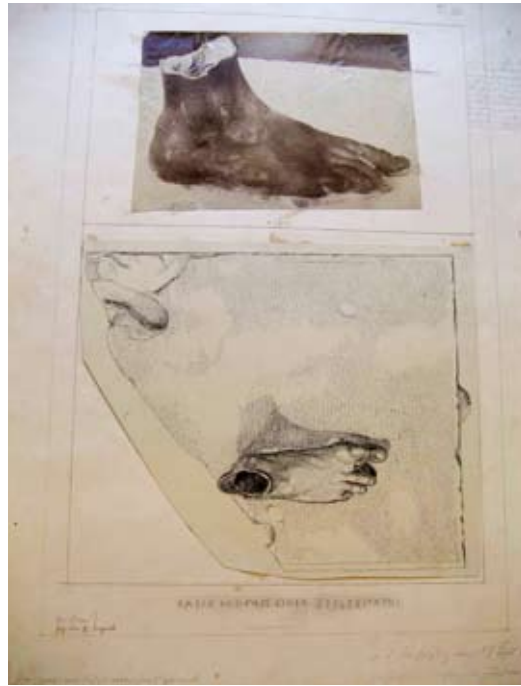


Stefanie Klamm

Stefanie Klamm (Predoctoral Fellow, Humboldt Universität zu Berlin, Germany, funded by Gerda Henkel Stiftung, Germany, as of September 2009 Predoctoral Research Scholar, Paul Getty Research Institute, Los Angeles, U.S.A.)

Strategies of Visualization in Nineteenth and Twentieth Century German Archaeology

In the mid-nineteenth century, when classical archaeology took shape as an academic discipline, the new photographic technology seemed a useful means for the reproduction of objects. But other instruments like drawings, prints, and plaster casts were at the same time both time-tested and available. The choice of illustrative techniques depended not only on the status of the technical development but also on epistemological reasons. Situated within a broader discussion of the historicity of scientific images and practices, the study explores these matters through different contexts of archaeological practice—especially Olympia and Pergamon—and follows the transformation of archaeological objects into images.



Mastercopy of a bronze foot on a stone basis in photography and drawing. Archive of the Antikensammlung, Berlin

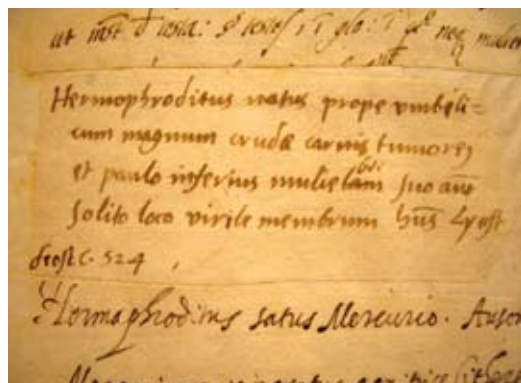


Fabian Krämer

Fabian Krämer (Predoctoral Fellow, Ludwig-Maximilians-Universität München, Germany)

Reference Structures in the Study of Nature, Seventeenth and Eighteenth Centuries

Building on detailed and scholarly *Quellenforschung* of sources both visual and textual from ca. 1550 to 1750 published in the Holy Roman Empire and the adjacent territories, the dissertation investigates what counted as knowledge in natural history



Manuscript note in Ulisse Aldrovandi's commonplace book on a case of hermaphroditism that was frequently related in the sixteenth and seventeenth centuries. Conrad Lycosthenes, *Prodigiorum ac ostentorum chronicon etc.* Basel: Petri, 1557, p. 534. Biblioteca Universitaria di Bologna, MS. Aldrovandi 105, vol. H-HIRUN, fol. 504r, (1522–1605)

and medicine, and what internal gradations existed in this “knowledge.” Focusing on accounts of monsters and building on Gianna Pomata’s and Nancy G. Siraisi’s concept of “less learned empiricism,” the project aims at overcoming the dichotomy between early modern erudition and enlightened empiricism. The project argues that there was a distinctly early modern type of empiricism that had a strong learned component. This learned component can explain the presence of reports and visualizations of phenomena that appear unbelievable to the modern reader.

Daryn Lehoux (Visiting Scholar, Queen’s University, Kingston, Canada)

What Did the Romans Know?

The Roman world was a strange one. Human bodies were made up of humours that could shift around and unbalance themselves causing illness; distant lands were populated by strange races of people, some with no heads, some with giant feet that could block out the whole sun; the offal of animals foretold the future; garlic interfered with magnets, and goat’s blood with both. The Romans really thought that they *knew* these things to be true. But why? How? On what evidence and with what standards for “knowledge”? Roman observations on the natural world—for all the care with which they were collected, for all the careful scrutiny to which they were put by some very diligent and intelligent Romans—still frequently look to be impossible or fanciful on our modern understanding (knowledge) of how nature works. By looking very closely at the Romans’ standards for observation and their criteria for acceptance, we see how the multiple contexts in which those observations were happening *made sense* of particular ways of seeing the world.



Daryn Lehoux



Garlic: antipathy incarnate?
From: Pietro Andrea Mattioli, *Kreutterbuch*
dess hochgelehrten unnd weitberuemten
Herrn D. Petri Andreae Matthioli,
Frankfurt a. M. 1590



Andreas Mayer

Andreas Mayer (Research Scholar, MPIWG)

Dream Watchers. A History of Modern Dream Research

Attempts at the systematic observation and control of the dreaming process emerged during the nineteenth century. Within a new scientific culture of objectivity, dreams posed a challenge: since they appear in the sleeper's mind as fleeting phenomena and can only be known after awakening, they could hardly be considered as observable objects; and more disturbingly, their irregular, immoral, and irrational aspects threatened the unity of the observing self. This two-fold uncertainty gave rise to a regime in which dreams and similar mental phenomena were being objectified, a process

in which the use of epistemic vehicles such as photography and later film was of key importance. By reconstructing the genealogies of the practices by which dreams were objectified in the past one hundred and fifty years, the project aims not only to bring to the fore the specificities of a field which has received little interest within the history of the human sciences, but also to offer historical and epistemological elucidations of the current ambitions voiced by the exponents of new subdisciplines, most notably cognitive or neuroscientific approaches to psychoanalysis.



Hervey de Saint-Denys, *Les rêves et les moyens de les diriger*, Paris 1867.
From: R. Rosenberg, M. Hollein, Turner, Hugo, Moreau. *Entdeckung der Abstraktion*, p. 171, Fig. 56, München 2007



Erika Milam

Erika Milam (Postdoctoral Fellow, MPIWG; as of January 2009 Assistant Professor, University of Maryland, U.S.A.)

Animal Models of Human Behavior: Anthropomorphism, Zoomorphism, and Cultures of Observation

This project explored two techniques by which natural and social scientists have generalized their knowledge across the animal-human boundary. The first is to anthropomorphize animal actions as simplified versions of human behavior. The second is to zoomorphize human behavior as animalistic or instinctual in basis. By analyzing scientists' uses of zoomorphism in twentieth-century



behavioral sciences (and both the acclaim and critical eye with which their peers received this research), this project sought to understand how and why social and natural scientists turned to the study of non-human (often non-primate) behavior as a tool for understanding human social and cultural problems.



Irenäus Eibl-Eibesfeldt, *Love and Hate: The Natural History of Behavior Patterns*. Translated by Geoffrey Strachan. Aldine de Gruyter, New York 1970; Fig. 46. previous page: Balinese women; here: rhesus monkeys.

Gregg Mitman (Visiting Scholar, University of Wisconsin, Madison, U.S.A., funded by the Alexander von Humboldt Stiftung, Germany)

America's Rubber Empire: Ecology, Disease, and Commerce in the Making of the Firestone Plantations Company



During the twentieth century, the United States developed a unique kind of empire, one bound together less by military conquest and direct political administration than by the expansion of markets, corporate influence, and cultural exchange. The political and economic ties between the United States and the Republic of Liberia, cemented in the 1920s when the Firestone Tire and Rubber Company successfully established a major rubber plantation in the country, exemplify this new imperial relationship. Yet the transformation of Liberia into the United States' rubber empire depended on new tools of seeing and new forms of scientific and medical expertise. Through a focus on the Harvard African Expedition to Liberia in 1926, the motion-picture record it gathered, and the place of rubber as a precious commodity in the global economy, this project explores the relationships among science, business, and the state in the economic transformation of nature and a nation. How the practices of seeing and valuation in the sciences of ecology, medicine, anthropology, and economics were instrumental in that transformation are questions at the center of this book-length project.



Gregg Mitman

Rubber tree, *Hevea brasiliensis*, showing method of tapping at Firestone's Mt. Barclay plantation in Liberia, 1920s. Courtesy of Randal Whitman

Tania Munz (Research Scholar, MPIWG)

Karl von Frisch, the Honeybee Dances, and Twentieth-Century Sciences of Communication

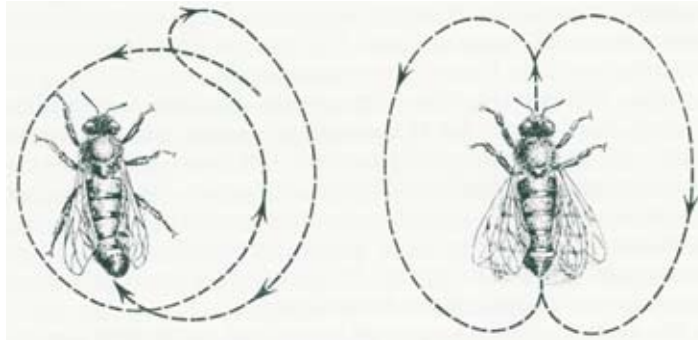
The Dancing Bees is a dual biography that explores the life and work of the experimental physiologist Karl von Frisch (1886–1982) *vis à vis* his favored research animal, the honeybee, in the context of twentieth-century studies of animal behavior and communication. Von Frisch's findings that the bees communicate the distance and direction of food sources by means of their dances earned him international attention and a shared Nobel Prize in Physiology and Medicine in 1973. The news that an animal as lowly as the honeybee would use symbolic communication challenged existing



Tania Munz

notions of the animal-human boundary. From dolphin and whale song to signing chimpanzees, by the mid-1960s, a flurry of interdisciplinary activity surrounded animal communication. The project examines von Frisch's work and its reception and traces how the honeybee emerged during the twentieth century as one of the most fascinating and challenging problems of communication and behavior.

Left: The round dance alerts hive mates to nearby foods. Right: The tail-waggle dance indicates the distance and direction of more distant food sources. Karl von Frisch, *Erinnerungen eines Biologen*, p. 126, Berlin 1957

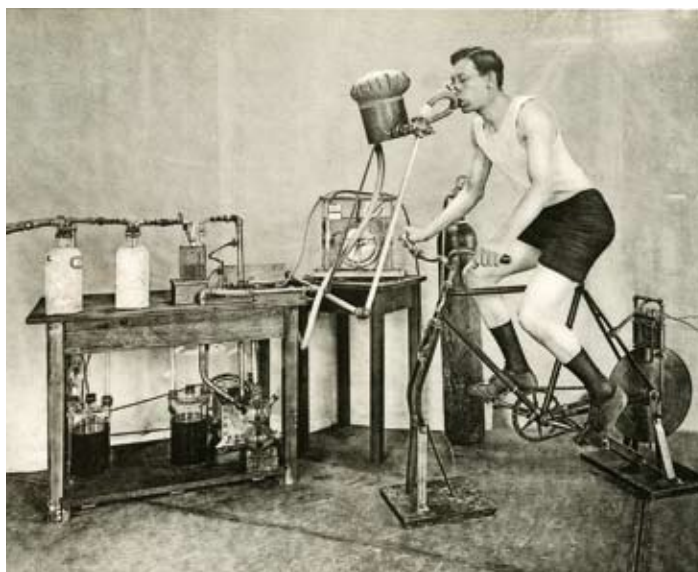


Elizabeth Neswald (Visiting Scholar, Brock University, St. Catherines, Canada, funded by the Canadian Institute of Health Research)

Thermodynamics, Social Technologies, and the Practice of Nutrition

In the 1850s, nutrition emerged as a special area of physiological study. Humans at work and at rest, female and male, of different ages and states of health were put in calorimeters, hooked up to respiration apparatus, and fed carefully planned and analyzed diets in order to determine the metabolism and nutritional needs of the human body. Surveys, household budgets, prisons, and poor houses provided information on dietary practices in different social, ethnic, and national groups. From its early years, nutritional physiology was closely intertwined with the interests of the state and of social reformers. At the same time, physiologists looked to the exact sciences, to physics, chemistry, engineering, and thermodynamics for their experimental methods and models. This project studies the history of nutritional physiology in the late-

Francis G. Benedict and Edward P. Cathcart, *Muscular Work. A Metabolic Study with Special Reference to the Efficiency of the Human Body as a Machine*, Fig. 1, Washington DC, 1913

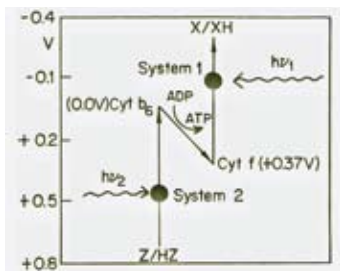


nineteenth and early-twentieth centuries at the intersection of laboratory science and social concerns, focusing in particular on its experimental objects, practices, and apparatus.

Kärin Nickelsen (Visiting Scholar, Universität Bern, Switzerland, funded by the Universität Bern)

Modelling Photosynthesis 1840–1960

The project examines the discovery of the biochemical processes of photosynthesis in the years 1840 to 1960. Photosynthesis is fundamental to life on earth, and the process has intrigued scientists for a long time, with an enormous acceleration of success after 1945. By 1960, the basic model of photosynthesis, involving two photochemical



reactions and a light-independent series of dark reactions, was established. It required the collective effort of many research teams from all over the world, working in the most diverse fields of science. Tracing the step-by-step contributions by different actors to this model and explaining why and in which respect they advanced the collective goal are the key issues of this project.



Kärin Nickelsen

Eugene Rabinowitch, "The Mechanism of Photosynthesis". *Studies on Microalgae and Photosynthetic Bacteria* 373, p. 114, 1963

Gianna Pomata (Visiting Scholar, Johns Hopkins University, U.S.A.)

Practices of Observation of Early Modern Physicians

This project examines the development of the genre of medical *observationes* (collections of case-histories), a new form of writing that emerged in the late Renaissance. The interest in case-writing and case-collecting, which was the primary motivation behind the publishing of the *observationes*, was related to the recovery of the ideas of the ancient Empiric physicians, which were part and parcel of the legacy of ancient Scepticism and newly influential in early modern Europe. During her stay at the MPI-WG, Gianna Pomata completed and submitted for publication the following articles on this topic: "Sharing Cases: the *Observationes* in Early Modern Medicine" (accepted for publication in *Early Science and Medicine*, forthcoming 2010); "Observation Rising: Birth of an Epistemic Genre," accepted for publication in Lorraine Daston and Elizabeth Lunbeck, eds., *Histories of Scientific Observation* (Chicago: University of Chicago Press, forthcoming 2010); and "A Word of the Empirics: the ancient concept of observation and its recovery in early modern medicine," under review at *Annals of Science*.



Gianna Pomata

Theodore Porter (Visiting Scholar, University of California, Los Angeles, U.S.A.)

Scientific Observation as a Tool for Conservative Social Reform

This project examined the *méthode d'observation* of the mining engineer and prominent conservative Frédéric Le Play, who began his career emphasizing careful observation as a tool of economic planning and management, and later exalted it as an antidote to speculative, deracinated revolution. His monographs involved a remarkable



Theodore Porter

mix of bureaucratic investigation, exemplified by British parliamentary Blue Books, and the writing of fiction. By the time his observational project was flourishing as a collective enterprise, he had become convinced that France needed to be regenerated by the perspective of places far from European civilization, and that the wisdom of the sage, with lifelong experience of societies uncorrupted by modern customs and habits, was more valuable than any systematic empirical study. And yet he maintained to his dying day a program of investigation that was summed up in quantitative reports of family budgets.



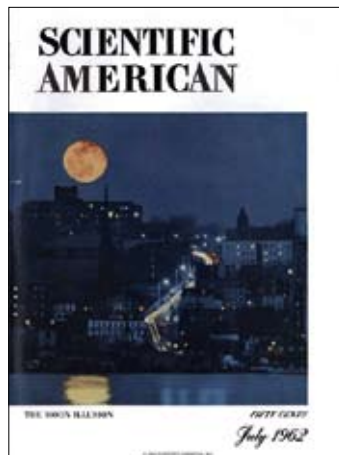
Thomas Sturm

Thomas Sturm (Research Scholar; as of November 2009 Ramón y Cajal Researcher at the Department of Philosophy at the Universitat Autònoma de Barcelona, Spain)

Perceptual Illusions and their Role in Epistemology

The empirical sciences must constantly strive to distinguish reliable from unreliable observation. A concept that plays an important role here is that of a perceptual illusion. For philosophers, such illusions have often been a reason to mistrust the senses. They were also treated in optics, astronomy, and other disciplines. A division of scientific labor seems natural here: empirical sciences in general consider these illusions for methodological and theoretical reasons. In contrast, for philosophical

epistemology and—in different ways—cognitive psychology, illusions have also been part of their very subject matter. They investigate them in order to understand and control the basis of empirical knowledge. The project deals with a complex philosophical and historical problem: How has the conceptual distinction between perception and judgment been used in conceptions and theories of perceptual illusions? How do these shifts affect the relation between philosophy and psychology, and the goal of these disciplines to safeguard empirical knowledge claims?



Cover Illustration of *Scientific American*, No. 207 1962



Mary Terrall

Mary Terrall (Visiting Scholar, University of California, Los Angeles, U.S.A.)

Practices of Natural History in the Eighteenth Century

This study examines the various practices that went into making natural historical knowledge in francophone eighteenth-century Europe. Through diverse manuscript letters, research notes, and drawings, as well as printed texts and engraved images, it reconstructs working relationships among naturalists, and looks especially at the ways people incorporated natural history observation into the daily routines of their households. The project challenges received views about classification as the defining feature of natural history in this period, and about the clear distinction of physical sciences from natural history. The central figure is René-Antoine Ferchault de Réaumur, author of many volumes on insects, among other things, and the definitive authority on natural history in France the middle decades of the eighteenth century.

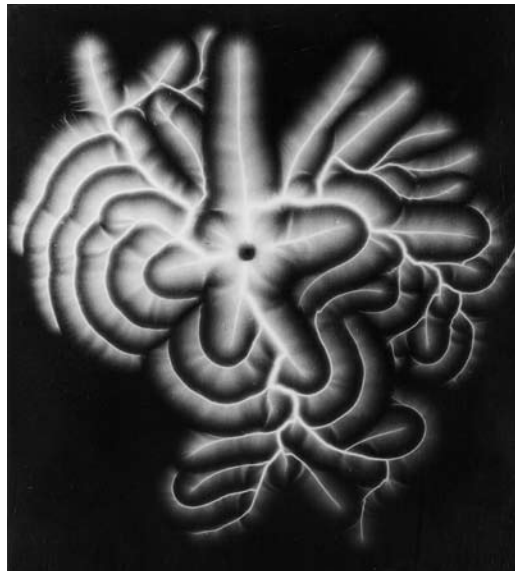
While the project addresses many aspects of Réaumur's own work in detail, his papers and letters also make possible an exploration of a dispersed and diverse community of observers and collectors spread across Europe and around the world.

Kelley Wilder (Visiting Scholar, De Montfort University Leicester, U.K.)

The Nature of Photographic Evidence

By the late-nineteenth century, the photochemical trace in addition to more modern photographic techniques provided scientists with innumerable insights into the natural world. Photography recorded things that were, to the human eye and human memory, too small, too fast, invisible, too far away and far too ephemeral. Kelley Wilder explored the perceived framework of photography in experimental and observational settings ever since Sir John Herschel first used a photograph to explain the result of an experiment in March 1839.

Her project involved not only examining the ways in which photographs were seen to generate facts, but also how different types of photographs were used to generate different types of facts; how photographic methods were deployed; how photographic materials altered the way in which these methods were structured; and finally, but certainly not least, how photographic desiderata were treated, discussed, and disseminated to a public audience as evidence.



Kelley Wilder

Arthur von Hippel, Lichtenberg Figure. Digital image made from a scanned glass plate negative (and reversed) 1936. Courtesy von Hippel family

Joseph Ziegler (Visiting Scholar, Haifa University, Israel, funded by the Yad Hanadid Foundation)

The Rise of Physiognomy, 1200–1500

During his six-month stay at MPIWG, J. Ziegler wrote two chapters of a forthcoming monograph on the rise of physiognomy, 1200–1500. Both chapters heavily rely on Bartolomeo della Rocca Cocles's *Chiromantie ac physionomie anastasis* (Bologna, 1504), the last medieval-style commentary of "Aristotelian" physiognomy. The first of these chapters analyses the physiognomic portraits in Cocles's *Anastasis* and suggests that in the long history of scientific observation, this eccentric physician provides us with one of the earliest examples of scientific observation in the Latin West. The second chapter, "Observing religious inclinations and behaviour: Physiognomy and Religion 1200–1500," traces the nexus physiognomy-religion.



Joseph Ziegler

Project

Between the Natural and the Human Sciences

MPIWG ORGANIZERS *Lorraine Daston, Fernando Vidal*

COOPERATING ORGANIZERS *Francisco Ortega* (Universidade Do Estado Do Rio de Janeiro/UERJ, Brazil)

COOPERATION PARTNERS Universidade Do Estado Do Rio de Janeiro/UERJ, Brazil; University of Chicago, U.S.A.; Centre Alexandre Koyré, Paris, France

The questions about what kinds of knowledge, evidence, and objects are common to all the sciences, from astronomy to psychology, from meteorology to sociology. Yet the natural sciences have received immeasurably more historical and philosophical scrutiny than the human sciences, with the result that conceptions of knowledge—what it is, how to get it, what to do with it—are correspondingly lopsided. The division between the natural and human sciences and the resulting neglect of the latter by historians and philosophers of science are the products of late-nineteenth-century shifts in the classification of knowledge, which remapped the disciplines in order to sharpen the distinction between the human and the natural realms and therefore between the sciences dedicated to each. Although the methods and forms of explanation of, for example, evolutionary biology and historical sociology had more in common than either of them had with physics on the one hand, or demography on the other, the newly drawn boundary between what the natural and human sciences divided disciplines once linked by common histories and practices. The two projects conducted under this rubric investigate the historical and contemporary interactions between the human and natural sciences, as well their shared epistemic values, practices, and institutions.

Project One

The Cerebral Subject:

Brain and Self in Contemporary Culture

DURATION 2004–2009; funded 2005–2008 by the DAAD (German Academic Exchange Service)

MPIWG ORGANIZER *Fernando Vidal*

COOPERATING ORGANIZER *Francisco Ortega* (Universidade Do Estado Do Rio de Janeiro/UERJ, Brazil)

COOPERATION PARTNER Institute for Social Medicine, Universidade Do Estado Do Rio de Janeiro/UERJ, Brazil

The goal of this project is to study in history and contemporary culture the idea, epitomized by the expression “cerebral subject,” that the human person is constituted essentially by the brain, or that the brain is the only part of the body one needs to have in order to be herself or himself. Since the 1990s, several disciplines, such as neurotheology, neuroeducation, neuroesthetics, neuropsychanalysis, neuromarketing, or neuroeconomics have advanced bold plans to reform the human sciences on the basis of knowledge about the brain. Driven by the availability of brain imaging technologies, these fields tend to focus on the quest for neural correlates of behaviors and mental processes. The media has given much room to these emergent fields; it has also reported on new forms of sociability incarnate in the growing “neurodiversity” movement, and has decisively contributed to turn brain scans into modern icons of personhood. Parallel to academic approaches, but interacting with them, there is an expanding galaxy of beliefs and practices that go from learning how to draw or feel with one side of the brain, to various forms of neurohealthism, neuroascetics, neuro-esotericism, and neuroeschatology. The project approaches these phenomena from different angles, and in reference not only to science and medicine, but also to extra-scientific ideas and practices that ultimately concern the self and the definition of the human being.

Brain and Self in Contemporary Culture

Conferences

Neurocultures,

February 20–22, 2009

ORGANIZERS *Nicolas Langlitz* (MPIWG/New School of Social Research, New York, U.S.A.), *Fernando Vidal* (MPIWG)

COOPERATION PARTNERS BIOS Centre, London School of Economics,
www.lse.ac.uk/collections/BIOS/

The workshop examined “neurocultures”—a term intended to emphasize the construction of norms, values, meanings, and identities through the new “neuro” discourses and practices, both scientific and popular. How has neuroscientific knowledge penetrated and fashioned neurocultures, and how have the neurosciences been affected by the latter? How substantial are the changes introduced by “neuro” methods and perspectives into areas traditionally covered by the human sciences? Have these areas as well as our conduct of life and views about the human undergone the major transfigurations announced by many “neuro” specialists? Is there a common denominator to the emerging “neuro” disciplines? Is it merely ideological or have the practices of these fields been transformed as well? What purposes does their alignment with the neurosciences serve?

Participants

- *Suzanne Anker* (School of Visual Arts, New York, U.S.A.)
- *Ariane Bazan* (Université Libre de Bruxelles, Belgium)
- *Martijn van Beek* (University of Aarhus, Denmark)
- *Uljana Feest* (Technische Universität Berlin, Germany)
- *Giovanni Frazzetto* (London School of Economics, U.K.)
- *Michael Hagner* (ETH Zürich, Switzerland)
- *Hauke Heekeren* (MPI for Human Development Berlin, Germany)
- *Sita Kotnis* (University of Aarhus, Denmark)
- *Ludmila Hyman* (MPIWG)
- *Andrew Lakoff* (Harvard University, U.S.A.)
- *Nicolas Langlitz* (MPIWG/New School of Social Research, New York, U.S.A.)
- *Thomas Lemke* (Universität Frankfurt/M., Germany)
- *Sabine Maasen* (Universität Basel, Switzerland)
- *Hans Markowitsch* (Universität Bielefeld, Germany)
- *Emily Martin* (New York University, U.S.A.)
- *Andreas Mayer* (MPIWG)
- *Thomas Metzinger* (Universität Mainz, Germany)
- *Francisco Ortega* (State University of Rio de Janeiro, Brazil)
- *Michael Pauen* (Humboldt Universität zu Berlin, Germany)
- *Alain Prochiantz* (Centre national des recherches scientifiques, Paris, France)
- *Tobias Rees* (McGill University, Canada)
- *Andreas Roepstorff* (University of Aarhus, Denmark)
- *Nikolas Rose* (London School of Economics, U.K.)
- *Irina Singh* (London School of Economics, U.K.)
- *Thomas Sturm* (MPIWG/Universitat Autònoma de Barcelona, Spain)
- *Fernando Vidal* (MPIWG)
- *Scott Vrecko* (London School of Economics, U.K.)
- *Allan Young* (McGill University, Canada)

Brain and Self in Contemporary Culture

Individual Projects



Suparna
Choudhury

Suparna Choudhury (Research Fellow, MPIWG, as of August 2009 MPG Minerva Junior Professor, funded by the MPG W-2 Minerva Program for the Advancement of Outstanding Female Scholars)

COOPERATING PARTNERS *Arno Villinger* and *Daniel Margulies* (Institute for Mind and Brain, Humboldt Universität zu Berlin, Germany)

COOPERATION PARTNER Institute for Mind and Brain, Humboldt Universität zu Berlin, Germany

Critical Neuroscience and the Adolescent Brain

The goal of this project is to develop meaningful interactions between the history of science, anthropology, and cognitive neuroscience. Using the framework of Critical Neuroscience (www.critical-neuroscience.org) and intersecting with the Cerebral

Subject project (all above), *Constructions of the Brain* seeks to examine the cultural contexts and social functions of recent research in the neurosciences, including questions about the social brain, cultural differences, and cognitive development. Currently, a particular focus of the project is the adolescent brain. The adolescence project studies how ideas and practices related to mental and moral development during adolescence



L. Ebensperger, *Storm and Stress in the Adolescent Brain*, 2009

developed from the late-nineteenth century to current frameworks in neuroscience and psychiatry. It also explores the ways in which brain-based explanations of adolescence are appropriated in clinical, educational, and popular domains, and among adolescents themselves in diverse cultural contexts. Firstly, therefore, the adolescent project will contribute to social studies of neuroscience. Through its collaborative structure, a second aim is to advance reflexive and interdisciplinary approaches to the study of behavior and development.

Nicolas Langlitz (Postdoctoral Fellow, MPIWG, as of January 2010 Assistant Professor at the New School of Social Research, New York, U.S.A.)

Neurophilosophers, Neuroscientists, and the Dreaming Brain

Philosophy was among the first disciplines in the humanities to adorn itself with the prefix of “neuro.” Emerging as a branch of analytic philosophy during the 1980s, neurophilosophy has since then attempted to solve philosophical questions with the aid of empirical knowledge acquired in the field of brain research. At the intersection of dream research and neurophilosophy, this anthropological-historical study explores how philosophical questions scholars have wrestled with for centuries are addressed in novel ways through laboratory experiments. This field research in the anthropology of science examines, among other questions, how those working at the borders of science and philosophy respond to ignorance of their subject. What roles do “theoretical metaphors” play in an empirically oriented philosophy of the mind? How are science-fiction-like thought experiments used to overcome the limits of scientific knowledge in philosophical arguments? And what happens to philosophical questions once the attempt has been made to “operationalize” them in experiments?



Nicolas Langlitz

Neuroimaging: How do physiological measurements of the dreaming brain inform the philosophy of mind?
Photo: Courtesy Dr. Felix Hasler, Zurich



Fernando Vidal

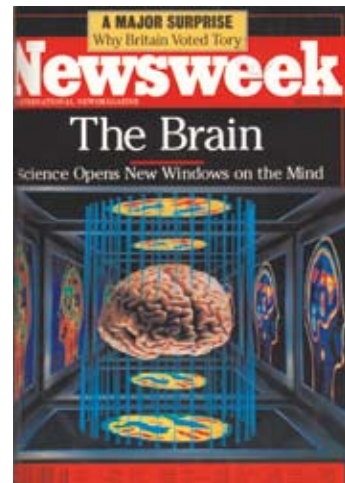


Francisco Ortega

Francisco Ortega (Visiting Scholar, Universidade Do Estado Do Rio de Janeiro/UERJ, Brazil), *Fernando Vidal* (Research Scholar, MPIWG)

Being Brains

Are we our brains? The leading American neuroscientist Michael Gazzaniga explicitly said so. More subtly, French philosopher Stéphane Ferret wrote that “Person P is identical with person P* if and only if P and P* have one and the same functional brain.” Humans have been thus redescribed as cerebral subjects. How have we come to the point that such statements seem natural and obvious? What do their verbal and nonverbal forms and consequences imply for the individual and society? This co-authored book project places these questions in historical and critical perspective. *Being Brains* will include chapters on the history of the cerebral subject from John Locke to brain scans; the development since the 1990s of various “neuro” fields (neuroethics, neuroeconomics, neuroesthetics, neurotheology, and several others); neuroethics and how it defines and deals with the challenges the neurosciences supposedly pose for society; the cerebralization of psychological distress; the growth of the neurodiversity movement; the emergence of discourses and practices of cerebral self-help; and the embodiments of the cerebral subject in literature and cinema.



Cover of *Newsweek*, January 1992

Project Two

The History of the Human Sciences

MPIWG ORGANIZERS *Lorraine Daston, Andreas Mayer, Thomas Sturm*

COOPERATING ORGANIZERS *Robert J. Richards* (University of Chicago, U.S.A.),
Alison Winter (University of Chicago, U.S.A.)

COOPERATION PARTNERS University of Chicago, U.S.A.; Centre Alexandre Koyré,
Paris, France

The History of the Human Sciences

Conferences

Crisis Debates in Psychology: Causes, Contexts, and Consequences,

October 10–12, 2008

ORGANIZERS *John Carson* (University of Michigan, Ann Arbor, U.S.A.),

Uljana Feest (Technische Universität Berlin, Germany), *Ludmila Hyman* (MPIWG),

Annette Mühlberger (Universitat Autònoma de Barcelona, Spain), Thomas Sturm (MPIWG/Universitat Autònoma de Barcelona, Spain)

Thomas Kuhn claimed that scientific revolutions are precipitated by a crisis of the dominant paradigm, and that every crisis is resolved by a revolution. He also claimed that states of crisis are hardly ever acknowledged by scientists themselves. However, there are cases in which a crisis was diagnosed by contemporary scientists and their commentators. Perhaps the strongest instance of this can be found in psychology from the late-nineteenth century until the 1930s. It began with a reaction against the expectations connected with the new psychological laboratories, institutes, journals, societies, and research practices established since the 1870s. Starting with Rudolf Willy in 1899, many came to doubt that these innovations would bring psychology onto the secure path of a science. The workshop addressed the causes of and reasons for the experience of a crisis in psychology as well as the effects on the subsequent development in this field. Sessions were also held at conferences in Dublin (ESHHS/Cheiron meeting, July, 2007), Pittsburgh (HSS/PSA meeting, November, 2008), and Budapest (ESHHS, July 2009). The results will be published in a special issue of the *Studies in History and Philosophy of Science*.

Participants

- Christian Allesch (Universität Salzburg, Austria)
- Francesca Bordogna* (Northwestern University, U.S.A.)
- John Carson* (University of Michigan, U.S.A.)
- Jordi Cat (Indiana University, U.S.A.)
- Michael Cole (University of California, San Diego, U.S.A.)
- Lorraine Daston (MPIWG)
- Cathy Faye (York University, Canada)
- Uljana Feest (Technische Universität Berlin, Germany)
- Horst Gundlach (Universität Passau, Germany)
- Gary Hatfield* (University of Pennsylvania)
- Ludmila Hyman* (MPIWG)
- Malcolm Hyman † (MPIWG)
- Perrine Marthelot (Université Sorbonne, Paris, France)
- Annette Mühlberger* (Universitat Autònoma de Barcelona, Spain)
- Thomas Sturm* (MPIWG/Universitat Autònoma de Barcelona, Spain)
- Fernando Vidal* (MPIWG)
- Ekaterina Zavershneva (Moscow State Medical University, Russia)

* Participants of this group also in residence at Department II



Origins: The Historical Sciences in the Age of Darwin,

Chicago, June 5–6, 2009

ORGANIZERS *Lorraine Daston* (MPIWG), *Robert J. Richards* (University of Chicago, U.S.A.)

COOPERATION PARTNER University of Chicago, U.S.A.

In the late-eighteenth and early-nineteenth centuries a powerful new framework of inquiry and explanation swept the human and natural sciences: in cosmology and classics, in embryology and philology, in biology and theology, history gripped the imagination of scholars and scientists. The question of the origins and development of languages, species, peoples, and texts became central to the most advanced investigations conducted in the archives, the field, and the laboratory. Charles Darwin's *On the Origin of Species* (1859) erupted into an intellectual world primed to appreciate its questions, if not its answers: how did things come to be as they are now—and what will they become? As part of their ongoing cooperation in the History of the Human Sciences and in celebration of the Darwin Year 2009, the University of Chicago and the Max Planck Institute for the History of Science Berlin co-sponsored a workshop, held in Chicago, on all aspects of the historical sciences from circa 1789–1914. The aim of the workshop was to highlight a program of scientific inquiry that spanned the human and natural sciences as well as learned and lay cultures.

Participants

- *Adam Baim* (University of Chicago, U.S.A.)
- *Daniela Barberis* (Ohio State University, U.S.A.)
- *Naomi Beck* (University of Chicago, U.S.A.)
- *Francesca Bordogna* (Northwestern University, U.S.A.)
- *Henry Cowles* (Princeton University, U.S.A.)
- *Lorraine Daston* (MPIWG)
- *Kasper Eskildsen* (Roskilde Universitet, Danmark)
- *Marcie Holmes* (University of Chicago, U.S.A.)
- *Elizabeth Lunbeck* (Vanderbilt University, U.S.A.)
- *Judith Kaplan* (University of Wisconsin, Madison, U.S.A.)
- *Stefanie Klamm* (MPIWG/Paul Getty Research Institute, Los Angeles, U.S.A.)
- *Lynn Nyhart* (University of Wisconsin, Madison, U.S.A.)
- *Zoe Nyssa* (University of Chicago, U.S.A.)
- *Trevor Pearce* (University of Chicago, U.S.A.)
- *Rachel Ponce* (University of Chicago, U.S.A.)
- *Marshall Sahlins* (University of Chicago, U.S.A.)
- *Phil Sloan* (University of Notre Dame, U.S.A.)
- *Richard Staley* (University of Wisconsin, Madison, U.S.A.)
- *Beckett Sterner* (University of Chicago, U.S.A.)
- *Thomas Sturm* (MPIWG/Universitat Autònoma de Barcelona, Spain)
- *Kathryn Tabb* (University of Pittsburgh, U.S.A.)
- *Fernando Vidal* (MPIWG)
- *Cecelia Watson* (University of Chicago, U.S.A.)
- *Alison Winter* (University of Chicago, U.S.A.)

Epistemic Vehicles in the Human Sciences: A Conference in Memory of Lydia Marinelli,

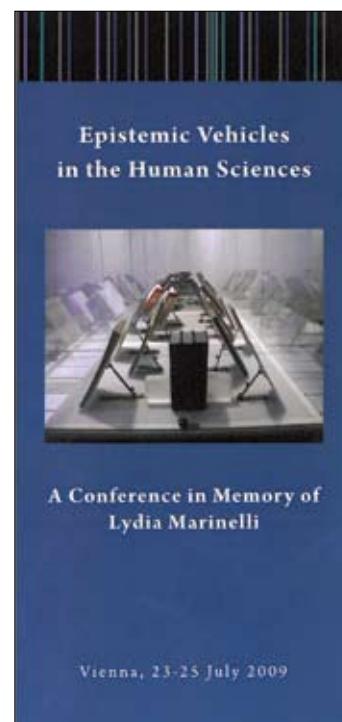
Vienna, July 23–25, 2009

ORGANIZER *Andreas Mayer* (MPIWG)

Collaboration between Departments II and III

COOPERATION PARTNER Institut für Wissenschaft und Kunst, Vienna, Austria

Lydia Marinelli (1965–2008) was one of the finest and most original Austrian historians and curators of her generation. Although scholars will remember mostly her inspiring attempts to renovate the historiography of psychoanalysis and her exhibitions, her work had also wider implications with regard to the ways knowledge is generated and transmitted in the human sciences. At a time when historiographical approaches were mostly discipline-bound and text-oriented, opening up the world of the book and of other media in relation to psychoanalysis involved a major reframing of the historical enterprise in this domain. Marinelli's analyses of the role of visual technologies and of the critical function of the archive and the museum in the transmission of psychoanalytic knowledge constitutes a challenge for traditional intellectual histories. This conference honored her memory by investigating the dynamics of the major knowledge vehicles in the human sciences: books, journals, and other print media, the role of the visual arts and technologies, and the multiple ways museum objects can spur epistemic processes. Special attention was given to those fleeting and recalcitrant objects that haunt especially the sciences dealing with mental phenomena. Studying the often paradoxical attempts to track the ephemeral can yield new ways to think about what seems most evident and familiar to us.



Participants

- *John Burnham* (Ohio State University, U.S.A.)
- *Jaqueline Carroy* (Centre Koyré, EHESS Paris, France)
- *James Chandler* (University of Chicago, U.S.A.)
- *Lorraine Daston* (MPIWG)
- *John Forrester* (University of Cambridge, U.K.)
- *Thomas Hübel* (Institut für Wissenschaft und Kunst, Vienna, Austria)
- *Baudouin Jourdan* (Université Paris 7, France)
- *Ruth Leys* (Johns Hopkins University, U.S.A.)
- *Elizabeth Lunbeck* (Vanderbilt University, U.S.A.)
- *Andreas Mayer* (MPIWG)
- *Angela Mayer-Deutsch* (Berlin)
- *Alexandre Métraux* (Universität Zürich, Switzerland)
- *Hans-Jörg Rheinberger* (MPIWG)
- *Hans-Walter Schmidt-Hannisa* (National University of Ireland, Galway, Ireland)
- *Alison Winter* (University of Chicago, U.S.A.)
- *Barbara Wittmann* (MPIWG)

Performing Voices: Between Embodiment and Mediation,

Rome, December 4–6, 2009

ORGANIZERS *Martin Brody* (American Academy in Rome), *Julia Kursell* (MPIWG), *Andreas Mayer* (MPIWG). Collaboration between Departments II and III.

COOPERATION PARTNER American Academy in Rome

→ see also: Historical Epistemology of Hearing, p. 121

This conference addressed the conundrum of vocal performance in past and present musical practices, providing a platform of confrontation and discussion by bringing together an international group of historians and philosophers of science, musicologists, and stage directors. Central to the conference was a concert by Anna Caterina Antonacci, one of today's most prominent and versatile sopranos, accompanied by pianist Donald Sulzen, followed by a biographical interview on her training and career. The combination of performances and scholarly debate allowed the participants to shed new light on the various forms of embodiment and mediation of singing voices in different historical periods, and to discuss the role of the observational and experimental techniques developed for the study of singing (see <http://www.mpiwg-berlin.mpg.de/workshops/en/Performing-Voices.html>)

Participants

- *Anna-Caterina Antonacci* (Soprano Opera Singer, Paris, France)
- *Martin Brody* (American Academy, Rome, Italy)
- *Lorraine Daston* (MPIWG)
- *Juliette Deschamps* (Compagnie La Scène du Crime, Paris, France)
- *Martha Feldman* (University of Pennsylvania, U.S.A.)
- *Bonnie Gordon* (University of Virginia, U.S.A.)
- *Philip Gossett* (University of Chicago, U.S.A.)
- *Sebastian Klotz* (Universität Leipzig, Germany)
- *Julia Kursell* (MPIWG)
- *Macha Makeïeff* (Compagnie Deschamps&Makeïeff, France)
- *Andreas Mayer* (MPIWG)
- *Hans-Jörg Rheinberger* (MPIWG)
- *Benjamin Steege* (State University of New York at Stony Brook, U.S.A.)
- *Donald Sulzen* (Pianist, Konservatorium München, Germany)

The History of the Human Sciences

Planned Conferences

The Ur Science: Philology since the Renaissance,

January 29–30, 2010

ORGANIZERS *Lorraine Daston* (MPIWG), *Glenn Most* (Scuola Normale Pisa, Italy/
University of Chicago, U.S.A.)

Strangelovean Sciences,

March 15–16, 2010

ORGANIZERS *Michael Gordin* (Princeton University, U.S.A.), *Lorraine Daston*
(MPIWG)

The Human Subject in the Human Sciences,

April 2–3, 2010 (MPIWG-University of Chicago Cooperation in the History of the
Human Sciences)

ORGANIZERS *Alison Winter* (University of Chicago, U.S.A.), *Robert J. Richards*
(University of Chicago, U.S.A.), *Lorraine Daston* (MPIWG)

What Are the Human Sciences? Traditions, Histories, Reflections,

Paris, June 2011

ORGANIZERS *Jacqueline Carroy* (Centre Alexandre Koyré, Paris, France), *Lorraine
Daston* (MPIWG), *Jan Goldstein* (University of Chicago, U.S.A.), *Andreas Mayer*
(MPIWG)

The History of the Human Sciences

Individual Projects

John Carson (Visiting Scholar, University of Michigan, Ann Arbor, U.S.A.)

Mental Ability and the Birth of Medical Jurisprudence

During the first decades of the nineteenth century, an extraordinary transformation took place in Anglo-American adjudications around the issue of mental competency. Challenging strict common law standards minimizing occasions where an actor's ability to make a will, enter into a contract, get married, or the like could be placed in question, physicians and jurists in both nations sought, often successfully, to introduce more capacious understandings of impairments that might render an individual unable to manage his or her affairs. For all the similarity in goals, however, the relations between doctors and lawyers—and more broadly between medicine and the law—were anything but easy, as each profession jealously guarded its own prerogatives and proved suspicious of expertise drawn from other quarters. The goal is to understand the process by which individuals were categorized according to their mental ability, the meaning of such categorizations when applied to specific situations, and the means by which knowledge generated and expertise validated in one context could, or could not, become persuasive within the other.



John Carson



Philip Kitcher

Philip Kitcher (Visiting Scholar, Columbia University, New York, U.S.A., funded by Columbia University)

Naturalistic Ethics

This naturalistic approach to ethics elaborates a very general philosophical stance, pragmatic naturalism, which fuses ideas from the classical pragmatists (particularly James and Dewey) with the opposition to mysterious entities and processes that is the hallmark of naturalism. Central to this approach is the thought that we can understand human practices—the sciences, religion, mathematics, and ethics—by analyzing the historical processes that have produced them in their current forms. Following themes from Dewey, the task is conceived not as developing any complete system of ethics, but of going on from where we are. The current version of the book (about 750 pages) has been sent to Harvard University Press. An article on altruism will appear in *Economics and Philosophy*.



Lydia Marinelli †

Lydia Marinelli † (Visiting Scholar, Sigmund Freud Gesellschaft, Austria)

The Couch. From A Living Room Furnishing to a Site of Observation of the Unconscious

From the beginning of Freud's medical practice, his office featured a piece of furniture for reclining. In the post-Freudian era this treatment bed took on the appellation *couch*, and up to the present day it has remained the professional calling card of the psychoanalyst. This project aimed to investigate the historical context within which this upholstered furnishing developed into a site of observation and treatment of the unconscious. It considered the therapeutic debates surrounding the more or less relaxed position of repose and their involvement in establishing the sofa's role in treatment. These medical and psychological discussions were analyzed in the light of the furnishing's career as an everyday object in the living room.



Annette Mülberger

Annette Mülberger (Visiting Scholar, Universitat Autònoma de Barcelona, Spain, funded by the Universitat Autònoma de Barcelona)

Crisis Declarations in German Psychology

What happens if scientists declare a crisis in their field? This was the case several times in the history of psychology. The first crisis declaration came from empiriocriticist Rudolf Willy, only twenty years after the first psychological laboratory was founded, and was followed by many others. A systematic comparison of crisis declarations and refutations reveals that, first, the texts dealing with crisis usually imply a question about what kind of science psychology should be and, second, that one of the main issues at stake, at that time, was Wilhelm Wundt's legacy. The paper, to be published in the *Studies in the History and Philosophy of Science* under the title "Constructing Histories—Detecting Crises: Wundt's Contested Legacy in Germany (1897/1932)," deals with the contemporary appraisal and historical evaluation of Wundt's contribution in these crisis declarations.

Project

Gender Studies of Science

MPIWG ORGANIZERS *Christine von Oertzen, Annette Vogt*

Research on the history of women and gender in science, technology, and medicine has expanded considerably in the recent past years and has, at the same time, become more and more diverse. On an ongoing basis, Department II supports projects using the category of gender to historicize scientific knowledge production—within and beyond academic confines.

Gender Studies of Science

Conference

Women and Gender in the History of Science, Technology, and Medicine: State of the Arts and Future Perspectives, August 29, 2008

ORGANIZERS *Christine von Oertzen* (MPIWG), *Helga Satzinger* (Wellcome Trust for the History of Medicine, University College London, U.K.)

The workshop aimed to evaluate and synthesize the research on women and gender in the history of science, medicine, and technology of the past decade, and to identify promising avenues for future research. The lively one-day discussion led to the conclusion that the category of gender might be most fruitfully employed in the history of science by adapting an approach that gender historians of technology have successfully used to show how technology, culture, and society are closely intertwined. As in the history of technology, gender could serve as a category to challenge distinctions between the realms of (knowledge) production and (knowledge) consumption, and in some instances erase these boundaries altogether. A workshop in 2010 (see below) will develop this approach.

Participants

- *Mineke Bosch* (University of Groningen, The Netherlands)
- *Joan Cadden* (University of California, Davis, U.S.A.)
- *Lorraine Daston* (MPIWG)
- *Delphine Gardey* (Université de Genève, Switzerland)
- *Sally Kohlstedt* (University of Minnesota, U.S.A.)
- *Erika Milam* (MPIWG/University of Maryland, U.S.A.)
- *Christine von Oertzen* (MPIWG)
- *Maria Rentetzi* (Technical University of Athens, Greece)
- *Helga Satzinger* (Wellcome Trust Centre for the History of Medicine, University College London, U.K.)
- *Annette Vogt* (MPIWG)
- *Karin Zachmann* (Technische Universität München, Germany)

Gender Studies of Science
Planned Conference

Gender Studies of Science: Using and Producing Sciences Beyond the Academy,
June 18–19, 2010

ORGANIZER *Christine von Oertzen* (MPIWG)

Gender Studies of Science
Individual Projects



Aude Fauvel

Aude Fauvel (Postdoctoral Fellow, MPIWG)

Women, Madness, and Psychiatry in France

The aim of this project is to take a fresh look at the French history of psychiatry by exploring how the evolution of theories on gender differentiation have altered the management of the insane in the modern period. Psychiatry mainly targeted women. However, asylum statistics indicate that—at least in France—more men than women were in fact locked up in psychiatric institutions. It is only at the beginning of the twentieth century that the ratio of men and women started to reverse, so that the asylum female population was sometimes 30% larger than the male one in the interwar period. The study seeks to explain this major shift in the psychiatric treatment of men and women in France by following the medical discourse on madness, as well as the treatment of female criminality. Furthermore it takes into account a “female invasion” in the psychiatric profession. In tracing the scientific legacies of the first female French psychiatrists, the study proposes to examine whether female psychiatrists developed new ways of seeing madness, whether women doctors changed the functioning of the asylum institution, and what patients themselves thought of their presence.



A mad woman at the Salpêtrière, 1892.
P. Strauss, *Paris ignoré. 550 dessins inédits d'après nature*, Paris, Ancienne Maison Quantin, p. 441, 1892



Christine von Oertzen

Christine von Oertzen (Research Scholar, MPIWG)

Gender, Science, and Transnational Academic Networking

This book project is an account of the formation and course of a new, international academic community of women, the International Federation of University Women (IFUW). It depicts how the IFUW took shape, and tracks the Federation’s activities across five decades, examining the shifting political, social, and intellectual contexts in which the organization sought to implement its ambitious goals. The study



International Convention of the IFUW 1932 in Edinburgh. Marching to the opening ceremonies, with the Mayor of Edinburgh and the President of the University of Edinburgh. Courtesy International Federation of University Women, Geneva

draws special attention to what the IFUW meant for female academics and scholars across Europe, and particularly for those from Germany. The entangled past of the IFUW and Germany reveals a history of national and international politics through academic networks across borders and academic cultures, scientific disciplines, and generations. The manuscript was accepted as a “Habilitationsschrift” by the Technical University Braunschweig in November 2009 and will be published by Wallstein in Göttingen in 2010.

Helga Satzinger (Wellcome Trust Centre for the History of Medicine, University College London, U.K.)

History of Genetics and Research into Sex Hormones

Three examples from Germany in the years between the 1890s and 1950s show how gender participated in the making of scientific knowledge. The book project investigated the research groups of Theodor and Marcella Boveri, Richard Goldschmidt, and Adolf and Erika Butenandt. The Boveris and Goldschmidt concentrated on the chromosomes and genes as genetic material, while the Butenandts crystallised sex hormones as crucial agents in the development of an organism, and turned to genetics in the 1940s. Women’s work was decisive in these endeavours. One crucial question of the three research groups was how gender difference is inherited and developed in organisms. Not only were sex and gender difference a scientific problem in the research, but they were also deeply intertwined with the contemporary political debates on the social order of society. The book, entitled *Differenz und Vererbung: Geschlechterordnung in der Genetik und Hormonforschung, 1890–1950*, was published by Böhlau Publishers in 2009.



Helga Satzinger



Technical assistants working with Adolf Butenandt on the crystallisation of the “female” sex hormone. University of Göttingen, late 1920s. Butenandt Papers, Archive of the Max Planck Society, Berlin



Ida Stamhuis

Ida Stamhuis (Visiting Scholar, Vrije Universiteit Amsterdam, The Netherlands),
Annette Vogt (MPIWG)

**Women Investigators at the Institute for Heredity Research in Berlin (1912–1928/
1933–1945)**

The Berlin Institute for Heredity Research serves as an example of a research unit where women scientists were employed earlier than in most others, and where they played a greater role than in other institutions. The study seeks to examine why this was so and what factors facilitated women's inclusion in the research. It sheds light on the gendered division of labor within the laboratories and analyzes how men and women worked together within the two main branches of the institute's research: in genetics, a field that was regarded as "pure science," as well as in heredity research which was defined as applied science.



Microscopical class at the Botanical Institute of the Agricultural College Berlin. *Die Königliche Landwirtschaftliche Hochschule in Berlin, Festschrift zur Feier des 25jährigen Bestehens*, Fig. 32, Berlin 1906



Annette Vogt

Annette Vogt (Research Scholar, MPIWG)

Women Scientists in the Kaiser Wilhelm Society and at the Berlin University

New findings on many of the female scientists listed in the dictionary "Women Scientists in Kaiser Wilhelm Institutes, from A to Z" (published in 2008) necessitated a revised and expanded edition. About fifty of the two-hundred and fifty entries needed to be changed, especially to complete entries of such lesser known and "forgotten" women scientists as Lydia Pasternak and Marie Wreschner, as well as of the first female scientific members of the Max Planck Society, Elisabeth Schiemann and Anneliese Maier. The new edition of the dictionary now also includes women scientists at different scientific institutions, especially the Agricultural College in Berlin and the Berlin University. The third edition of the dictionary covers the period from 1900 to 1961. It includes comparisons between male and female scientists, and draws special attention to women scientists who opposed the Nazi Regime.

Project

Science in Circulation: The Exchange of Knowledge among Islam, Judaism, and Christianity, 9th–17th Centuries

MPIWG ORGANIZER *Lorraine Daston*

COOPERATING ORGANIZERS *Rivka Feldhay* (Tel Aviv University, Israel), *Jamil Ragep* (McGill University, Canada), *Sally Ragep* (McGill University, Canada)

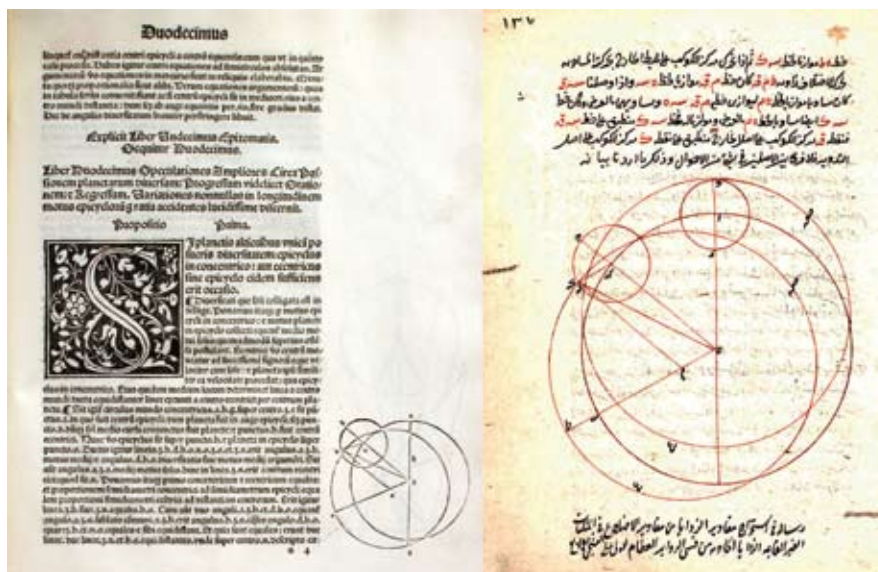
COOPERATION PARTNERS McGill University, Canada; American Council of Learned Societies; Member Institutions of ISMI Board (see below)

Working Group

Before Copernicus: The Cultures and Context of Scientific Learning in the Fifteenth Century

ORGANIZERS *Rivka Feldhay* (Tel Aviv University, Israel), *Jamil Ragep* (McGill University, Canada)

This Working Group examines encounter and cross-fertilization among a variety of Eastern and Western learning traditions that constituted astronomical knowledge in the century before Copernicus and had an impact on his work. The investigation combines perspectives from the history of science, intellectual history, and cultural history of the Islamic, Byzantine-Greek, Jewish, and Western-European traditions, and stretches geographically from Samarkand and Istanbul in the East, to Eastern,



Figures used by Regiomontanus and 'Alī Qushjī illustrating how to convert the epicyclic models of Venus and Mercury into eccentric ones. The underlying proposition, a key element in the mathematical transformation from a geocentric to heliocentric cosmology, most likely was first developed in Samarqand around 1430 and then made its way to Constantinople and central Europe. (Left: J. Regiomontanus and G. Peurbach, *Epytoma Joannis de monte regio In almagestum ptolemaei* (Venice, 1496), n4r, Courtesy of the History of Science Collections, University of Oklahoma, Norman, U.S.A.; Right: 'Alī Qushjī, *Fī anna aṣl al-khārij* ..., Carullah MS 2060, f. 137a. Courtesy of the Süleymaniye Library, Istanbul, Turkey

→ see also: Knowledge and Belief in Early Modern Science , p.136

Central and Western European countries. The first two meetings of the group took place at the MPIWG in December 2006 and August 2007, and the third and final meeting at McGill University, Montreal, Canada, in August 2009. The Working Group will produce a collective volume (submission by December 2010) that re-evaluates the rich conversation between different traditions and disciplines that constitutes the relevant context for interpreting Copernicus' contribution. The interdisciplinary work of the group will be integrated through thematic chapters, often written by more than one person.

Members

- *Nancy Bisaha* (Vassar College, U.S.A.)
- *Christopher S. Celenza* (Johns Hopkins University, U.S.A.)
- *Raz Chen-Morris* (Bar Ilan University, Israel)
- *Ihsan Fazlioglu* (Istanbul University, Turkey)
- *Rivka Feldhay* (Tel Aviv University, Israel)
- *Maria Mavroudi* (Princeton University, U.S.A.)
- *Robert Morrison* (Whitman College, U.S.A.)
- *Jamil Ragep* (McGill University, Canada)
- *Sally Ragep* (McGill University, Canada)
- *Michael Shank* (University of Wisconsin, Madison, U.S.A.)
- *Edith Sylla* (North Carolina University, U.S.A.)

Science in Circulation

The Islamic Scientific Manuscripts Initiative (ISMI)

MPIWG ORGANIZER *Lorraine Daston*

COOPERATING ORGANIZERS *Jamil Ragep* (McGill University, Canada), *Sally Ragep* (McGill University, Canada)

COOPERATION PARTNERS McGill University, Canada; American Council of Learned Societies

Member Institutions of the ISMI Board: Institute for the Study of Muslim Civilizations, Aga Khan University, London, U.K.; Archimedes Project, Harvard University, U.S.A.; Filología Semítica, Universitat de Barcelona, Spain; Encyclopaedia Islamica Foundation, Tehran, Iran; Institute for the History of Arabic Science, Aleppo University, Syria; Institute for the History of Science and Technology, Moscow, Russia; Institute of Ismaili Studies, London, U.K.; Warburg Institute, London, U.K.; The Written Heritage Research Center, Tehran, Iran

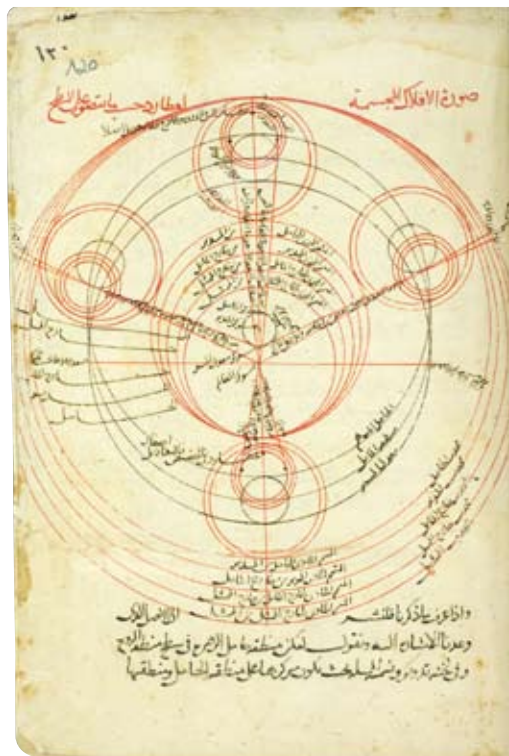
The ISMI project aims to make available a vast array of information about the exact sciences in the premodern Islamic world. This material will be accessible via the Internet without charge both to researchers and experts in the field and to the educated public worldwide. It will be an online database that contains the works of some 2,000 authors who span the entire Islamic world from Islamic Spain to India and the

borders of China, beginning in the eighth century and continuing until the nineteenth. These works in astronomy, mathematics, physics, geography, mechanics, and related disciplines number in the thousands and are represented, conservatively speaking, by tens of thousands of manuscript copies spread throughout the world.

In 2008, J. Ragep was awarded a Canada Foundation for Innovation (CFI) grant worth approximately 950,000 CAD, for work on the ISMI and related projects. (This is in addition to 1.4 million CAD awarded in 2007 for a Canada Research Chair, which has a sizeable research component that is being used for the ISMI project.) This CFI grant has been combined with another CFI grant awarded to Ragep's McGill colleague, Robert Wisnovsky, for work on an Islamic philosophy database. The two projects and databases are now seamlessly integrated, which has allowed for economies of scale and also for considerable synergy between the related fields of Islamic philosophy and Islamic science.

In 2009, ISMI, as a component of the Rational Sciences in Islam project (RaSI), entered into an agreement with the Staatsbibliothek zu Berlin to digitize a substantial number of Islamic codices (500 to 1000) related to scientific, philosophical, and theological subjects. The images will be put online, as part of the MPIWG's ECHO website. Thanks to equipment provided by McGill and funding for personnel by the MPIWG, work has moved forward and the first batch of sixty-eight codices is currently being digitized, of which eight are already online. Metadata to accompany the online manuscript images is being provided by Adam Gacek of McGill.

→ see also: Workshop to establish a new Partner Group with India, p. 178



The system of orbs for the planet Mercury, model produced by Islamic astronomers to reform the Ptolemaic system. Anonymus [Qutb al-Din al-Shirazi (d.710/1311)], *Nihayat al-idrak fi dirayat al-afلاك* (The utmost achievement in comprehending the orbs), Staatsbibliothek Berlin [SBB: *Ahlw.* 5682 = *Petermann I 674*], ca. 1600, available through MPIWG ECHO Website

New Project

The Sciences of the Archive

DURATION 2010–2015

MPIWG ORGANIZERS *Grégoire Chamayou, Lorraine Daston, Fernando Vidal, Christine von Oertzen*

“Data” (literally, “the givens”) is perhaps the most taken-for-granted word in all the sciences: short and unpretentious, it expresses the simplest and apparently most straightforward elements of empirical research. Whether inscribed as jottings on notecards, traces on photographic emulsions, entries in lab notebooks, or digital information, data supply the essential raw materials for all further scientific activity, from observing to theorizing. It is a category considered too basic to merit a history, too innocent to deserve a philosophy.

Yet no other aspect of science has commanded a greater commitment of ingenuity, resources, and sheer tenacity than the taking, making, and keeping of data. Since ancient times, cultures dispersed across the globe have launched monumental data-centered projects: the massive collections of astronomical observations in ancient China and Mesopotamia, the great libraries from Alexandria to Google Book Search, the vast networks of scientific surveillance of the world’s oceans and atmosphere, the mapping of every nook and cranny of heaven and earth. These projects are typically superhuman in scale, spanning continents (sometimes even galaxies), and centuries.

The sciences of the archive embrace both the human and natural sciences: history and astronomy, meteorology, and archaeology. All sciences make some use of data, but the sciences of the archive are defined by it—and their practices in turn define what data means. The history of the sciences of the archives raises questions about the evolution of categories like “data,” “information,” and “knowledge;” the cultural preconditions for titanic undertakings that project themselves in imagination far into the future; the modalities of classification, from the physical arrangement of books on library shelves to the digital indexing of the data sent by space probes; the fantasy of completeness, whether expressed in a photograph or a museum collection; the techniques for registering and manipulation of information, from the table to the data base.

The Sciences of the Archive

Working Groups

Documenting the World: Photographic Media and the Scientific Record

ORGANIZERS *Kelley Wilder* (DeMontfort University, Leicester, U.K.),
Gregg Mitman (University of Wisconsin-Madison, U.S.A.)

Archives composed of photographs or film span the scope of human history: these are archives as intimate as the family shoebox and as vast as the world's microfilm holdings. They form the backbone for visually based disciplines like art history, and alter the way we collect information and learn from it. Photographic and filmic documents in archives do not speak for themselves. They only have life in relationship to something else: to the context of their production, to other documents in the archive, to a person's life history, to a historical narrative. These documents are always on the verge of becoming documentaries—otherwise they would be dead to the world. This Working Group will investigate the impulses behind much of the archiving activity that utilized the two mediums. We will investigate how these photographic and filmic documents, through their creation and circulation, are continually shaping and reformulating the status of the archive. We want to know how photographic documents are made, how they circulate, and how they become documentaries.

Documenting the World attends to both the material and cultural histories of the photographic, filmic, or digital scientific record. It aims to reflect on, and work toward, a set of common methodologies that can reach across the divides of film and photographic history. The first meeting of the Working Group will take place in January 2010.



Greenland's Icy Mountains—A small Arctic specimen. Library Photographic Archive Vantor, Isle of Wright, The Museum, Courtesy University of St. Andrews, ca. 1890

Members

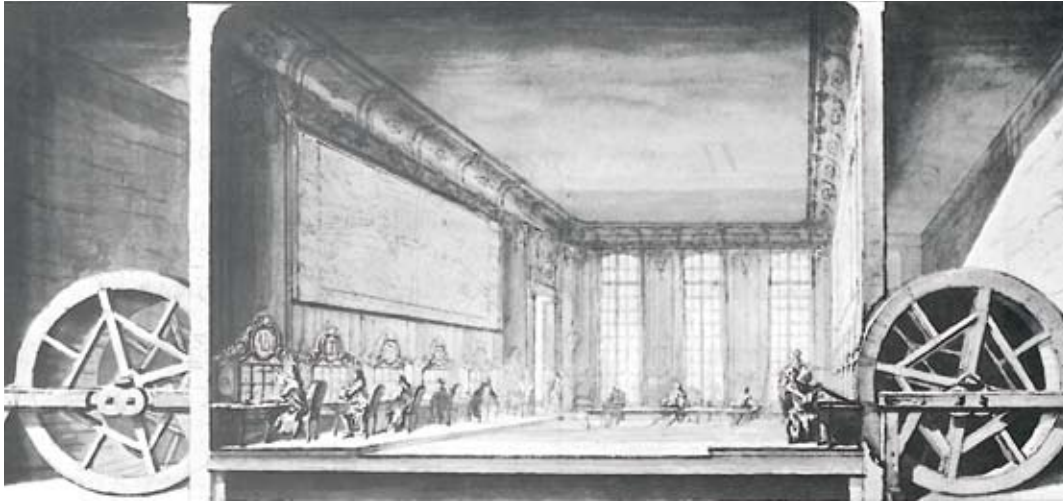
- *Paula Amad* (University of Iowa, Iowa City, U.S.A.)
- *Estelle Blaschke** (MPIWG)
- *Elizabeth Edwards** (University of the Arts London, U.K.)
- *Peter Geimer* (ETH Zürich, Switzerland)
- *Faye Ginsburg* (New York University, New York City, U.S.A.)
- *Jean-Baptiste Gouyon** (MPIWG)
- *Stefanie Klamm** (MPIWG/Paul Getty Research Institute, Los Angeles, U.S.A.)
- *Gregg Mitman** (University of Wisconsin, Madison, U.S.A.)
- *Jennifer Tucker* (Wesleyan University, Middletown, U.S.A.)
- *Janet Vertesi* (University of California, Irvine, U.S.A.)
- *Kelley Wilder** (De Montfort University, Leicester, U.K.)

*Members of working group also involved as scholars in residence at Department II.

→ see also conference "The Educated Eye", p. 71

Machines of Memory. The Archival Technologies and the Genealogy of Datapower (Seventeenth–Twentieth Centuries)

MPIWG ORGANIZER *Grégoire Chamayou*



Le serre-papier, a bureaucratic machine invented by Guillaudé (1749), from: M. Guillaudé, *Mémoire sur la réformation de la police de France*, reprint Paris 1974, p. 65

Archives are apparatuses of socialized memory, organizational tools of memorizing and remembering. The aim of this project is to study the history of their machinery, including the history of the card-filing systems or traceability devices in heterogeneous fields of practices, from the archives of cattle management to the use of archiving devices within the arts of governance. Machineries embrace not only concrete systems of material apparatuses, but also whole sets of social relationships, rationalities, and desires that embrace the technical devices. Archiving technologies have encountered an unprecedented global extension today. The hypothesis is that we are experiencing the deployment of an archival kind of power—“datapower”—that operates through the recording, storing, and retrieving of data on a gigantic and ubiquitous scale. The goal of this Working Group is to link the history of techniques of archiving and the formation of new ways of managing men, animals, and things: to sketch a genealogy of datapower by means of its technological history. The first meeting of this Working Group will take place in October 2010.

Endangerment and Its Consequences (to begin in 2011)

MPIWG ORGANIZER *Fernando Vidal*

See description on the MPIWG website:

http://www.mpiwg-berlin.mpg.de/en/research/projects/DEPT1_Loza-Quipu/projects/DeptII_VidalFernando-EndangermentAndItsConsequences/index_htm

The Archives of Deep-Time Sciences (to begin 2012)

MPIWG ORGANIZER *Lorraine Daston*

See description on the MPIWG website:

http://www.mpiwg-berlin.mpg.de/en/research/projects/DEPT1_Loza-Quipu/projects/DeptII_DastonLorraine-SciencesOfDeepTime/index_html

The Sciences of the Archive

Individual Projects

Grégoire Chamayou (Research Scholar, MPIWG)

History and Philosophy of Traceability, Seventeenth to Twentieth Centuries

Traceability is “the ability to find the history, the use, or the location of an entity by means of registered identifications.” It implies an ensemble of notation and archiving techniques, in other words, an ensemble of “mnemotechnics,” elaborated on the one hand in the management of livestock, herds, and libraries (inventory, classification, indexing, bookkeeping, and monitoring), and, on the other hand, in the administrative sphere of the government of populations (census reporting, postal addressing, card-filing systems, identification). The project is to write a genealogy of the contemporary techniques of traceability that draw on a heterogeneous corpus, in studying for example the installation of the first centralized judiciary records in the context of the birth of criminal anthropology as well as the introduction of the techniques of identification and of monitoring cattle in the process of husbandry. The study aims at revealing the link between the emergence of highly effective techniques of archiving and identification and the formation of a way of managing men, animals, and things as founded on a principle of individualization.



Grégoire Chamayou

Photo: Hakan Dahlström

Jean-Baptiste Gouyon (Postdoctoral Fellow, University of York, U.K./MPIWG)

Archiving the Doomed. Fashioning a Public Science of Conservation

This project studies ARKive, an Internet database of images and recordings of animals, and its claims to knowledge (www.arkive.org). This collection of audio-visual material is presented as an “electronic Noah’s Ark,” a central repository whose civic usefulness is justified by the threat of extinction looming over several, if not all animal species in the catalog. ARKive also seems to foster the notion that natural history

films, as well as the animals they document, are precious objects of knowledge in need of preservation. The research will therefore examine the role that such an “ecology of doom” plays in bringing cognitive legitimacy to natural history film-making, most notably through the role ascribed to the archival potential of this set of material practices.



Jean-Baptiste Gouyon

Screenshot of the ARKive Website, 2010

Project

Emmy-Noether Research Group

The Intellectual and Cultural History of Listening from the Enlightenment to the Present Day

DURATION 2008–2011

MPIWG ORGANIZER *Nikolaus Bacht* (Emmy Noether Research Group Director, Funded by the Deutsche Forschungsgemeinschaft)

This project focuses on a phenomenon that has persistently eluded historical description: the history of music listening, a subject only recently (re-)introduced into the canon of the humanities. The aim is to overcome both the traditional psychometric approach and recently developed social- and cultural-historical approaches to listening. Ultimately, the project strives to find a “third way:” a way that goes beyond the irreconcilable extremes of total universalisation on the one hand and total historicisation on the other. This interdisciplinary method should considerably enhance our understanding of the divergent rational and ontological forms that listening assumed from the Enlightenment to the present.

→ See also Julia Kursell, *Historical Epistemology of Hearing*, p. XXX

Individual Projects



Nikolaus Bacht

Nikolaus Bacht

(Emmy-Noether Research Group Director, funded by the Deutsche Forschungs-gemeinschaft)

An Intellectual and Cultural History of Listening

Actual listening experience, as far as it can be reconstructed, is considered alongside music theorists’ and philosophers’ ideas about listening, and tested against one another. Starting in the late-eighteenth century, the project works all the way up to the present, analysing the vast array of different sources dialectically in order to make comparisons possible.



Binaural localization and masking.
Winston E. Kock, *Journal of Acoustical Research* Vol. 22 No. 6, Nov. 1950

William Lockhart (Predoctoral Fellow, Humboldt Universität zu Berlin, Germany)

Compositional Listening: Musical Arrangement in the Nineteenth and Twentieth Centuries

The piano arrangement—an adaptation of a larger musical work for easy performance at the piano—was central to both the performing and listening habits of the nineteenth century amateur musician. Vital to the lived reality of musical individuals, and serving a pivotal role as the means by which music was circulated, the piano arrangement was one of the most important socio-musical phenomena of the nineteenth century. As such, it deserves far more academic interest than it has thus far received. By writing a comprehensive history of this maligned and forgotten genre, the project not only resurrects a near-forgotten body of music, but also exhumes its centuries-long history and associated aesthetic of reception, and thus illuminates an integral element of the social reality of music in the nineteenth century.



William Lockhart



Paul Cézanne, *Girl at the Piano* (*The Overture to Tannhause*). Oil on canvas. 57.8 x 92.5 cm, State Hermitage Museum, St. Petersburg, Russia, circa 1868

Short-Term

Visiting Pre- and Postdoctoral Fellows

- *Estelle Blaschke* (E.H.E.S.S./Université Paris I, Sorbonne): From the Picture Archive to the Image Bank. Commercializing the Visual Through Photography. The Bettmann Archive and CORBIS, 1933–present
- *Bernhard Bolech* (University of Vienna, Austria, funded by the University of Austria): Brain Research and the Human Sciences in Vienna around 1800
- *Mirjam Brusius* (University of Cambridge, United Kingdom, funded by the Gerda-Henkel-Stiftung, the Arts and Humanities Research Council, and the Cambridge Trust): Preserving the Forgotten: William Henry Fox Talbot, Photography and the Antique
- *Frederico D’Onofrio* (Universiteit van Amsterdam, The Netherlands, funded by the Universiteit van Amsterdam): Political Economy in Eighteenth-Century Naples
- *Emmanuel Didier* (Centre national de la recherche scientifique, Gouyancourt, France): US-Survey Statistics During the Interwar Period
- *Andrew Fearnley* (Cambridge University, U.K., as of February 2010 predoctoral fellow in Veronika Lipphardt’s Junior Research Group): Methods to Madness: Race, Knowledge and American Psychiatry
- *Angela Grünberg* (University of Sheffield, U.K.): Virtues as Sensibilities: The Tone of the German Language
- *Katja Guenther* (Princeton University, U.S.A.): A Body Made of Nerves: Reflexes, Body Maps, and the Limits of the Self in Modern German Medicine)
- *Daniela Helbig* (Harvard University): Turbulence in Flight and Fluid Dynamics Between the World Wars
- *José Ramon Marcaida* (CISC Madrid, funded by the Spanish National Research Council): Nature, Art, and Knowledge in Seventeenth-Century Spain
- *Maurizio Meloni* (University of Rome, Italy): Molecular Dasein: Living and Thinking in a Neurobiological Era
- *Kathrin Müller* (Kunsthistorisches Institut Florence, Italy, funded by the Kunsthistorisches Institut Florence): Diagram and Ornament in Boethius’ “De institutione arithmetica”
- *Winifred Newman* (Harvard University, U.S.A.): History and Philosophy of Aesthetics, Psychology and Perception
- *Trevor Pearce* (University of Chicago, U.S.A.): Nature as Technology: A Philosophical Investigation of Biomechanics
- *Christopher Plumb* (University of Manchester, U.K.): Exotic Animals in Eighteenth-Century Britain
- *Valentina Pugliano* (University of Oxford, U.K.): Practical Botanisers and Experienced Observers: Apothecaries and the Study of Nature in Venice and London, 1550–1630
- *Claudia Linhares Sanz* (Universidade Federal Fluminense, Rio de Janeiro, funded by Deutscher Akademischer Austauschdienst, DAAD): The History of Scientific Photography and Current Historical and Sociological Research on Neuroimages

- *Max Stadler* (Imperial College, London, U.K., as of January 2010 Postdoctoral Fellow in Department III): *Assembling Life. Models, the Cell, and the Reformations of Biological Science, 1920–1960*
- *Andrej Svorencik* (Universiteit van Amsterdam, The Netherlands, funded by the VIDI Grant from the Universiteit van Amsterdam): *History of Observational Practices in Economics, particularly experimental economics*
- *Cecelia Watson* (University of Chicago, U.S.A.): *A Historical Treatment of the Artist and Art Critic John La Farge's Impact on William James's Intellectual Development, Considered in the Context of Late-Nineteenth and Early-Twentieth Century Exchanges Between Arts and Sciences*
- *Anne Ziemke* (Max Planck Institute for Demographic Research, Rostock, Germany, funded by the Max Planck International Research Network on Aging): *Aging Research in Nineteenth-Century Biology*
- *Rafaella Zorzanelli* (Universidade do Estado do Rio de Janeiro, funded by The Brazilian Agency for the Advanced Training of University Personnel, CAPES): *The Impact of Neursciences in the Psychosomatic Field*

Short-Term Visiting Scholars

- *Gadi Algazi* (Tel Aviv University, Israel): *Households of Knowledge: Reshaping the Scholarly Habitus, 1300–1600*
- *Kirsti Andersen* (Aarhus University, Denmark, funded by Aarhus University, Denmark): *The Early History of Logarithms*
- *Mitchell Ash* (University of Vienna, Austria, funded by the University of Vienna): *Scientific and Political Changes in Twentieth-Century Germany and Austria, 1918–1933/38, 1945, 1989/90*
- *Francesca Bordogna* (Northwestern University, U.S.A.): *Magic Pragmatism. Inner Observation and the Quest for Inner Perfection*
- *Henk Bos* (Aarhus University, Denmark, and University of Utrecht, The Netherlands): *The Early Modern Tradition of Geometrical Problem Solving*
- *Robert Brain* (University of British Columbia, Canada): *The Pulse of Modernism: Experimental Phonetics and the Invention of Free Verse and All-Sound Performance*
- *Jimena Canales* (Harvard University, U.S.A.): *Individual Differences in Observation and Reaction*
- *Alix Cooper* (Visiting Scholar, State University of New York at Stony Brook, U.S.A., funded by the State University of New York at Stony Brook): *Domestic Matters: Family, Household, and the Labors of Observation in Early Modern Europe*
- *Elisabeth Decultot* (Centre national de la recherche scientifique, Paris, France, funded by the Alexander-von-Humboldt-Stiftung): *Aesthetics and History of Art in the Eighteenth Century (particularly Winckelmann and Sulzer)*
- *Otniel Dror* (The Hebrew University Jerusalem, Israel): *The Adrenaline Century*

- *Stéphanie Dupouy* (Université Paris I, Institut d'histoire et de philosophie des sciences et des techniques, Paris, France): History of Experimentation in Psychology, Nineteenth and Twentieth Centuries
- *Martha Fleming* (Natural History Museum, London/King's College, London, U.K.): Intermittance and Inspiration: Flicker, Pulse, Scintillate
- *Hannah Ginsborg* (University of California at Berkeley, U.S.A.): Primitive Normativity and Rule-Following
- *Gary Hatfield* (University of Pennsylvania, U.S.A.): Crisis in Psychology; Internal Senses in Descartes; Diagram from Descartes' Dioptrique
- *Harry Liebersohn* (University of Illinois, U.S.A.) Observing the Gift: The Making of a Social Scientific Category
- *Silvia Manzo* (Universidad Nacional de La Plata, Argentina, funded by the National Research Foundation of Argentina, CONICET): Probability and Certainty in Francis Bacon
- *Gordon McOuat* (University of King's College/Dalhousie University, Canada): Rewriting the History of Essentialism: Logic, Kinds, and Place
- *Amos Morris-Reich* (University of Jerusalem, Israel, funded by the Van Leer Foundation, Israel): Race and Humanism: The Epistemology of Arthur Ruppin
- *Kathryn Olesko* (Georgetown University, Washington D.C., U.S.A., funded by Georgetown University): Prussian Precision, 1648–1947
- *Claudia Passos Ferreira* (Universidade do Estado do Rio de Janeiro, Brazil, funded by Deutscher Akademischer Austauschdienst, DAAD): Moral Psychology. The Impact of the Discovery of Mirror Neurons in Developmental Psychology
- *Dario Perinetti* (Université du Québec, Canada): Moral Certainty and Empirical Knowledge in Early Modern Philosophy
- *Sophie Roux* (Université Grenoble II, France): Edition of Galileo's *Mechaniche*
- *Wolfgang Schivelbusch* (Funded by Deutsche Forschungsgemeinschaft, DFG): Historicizing Concepts of Air
- *Zur Shalev* (University of Haifa, Israel, funded by the University of Haifa): Learned Travel in the Early Modern Period
- *Otto Sibum* (Uppsala University, Sweden): Developmental History, Theoretical Cinematographs, and Physicists' Practices of Theorizing Around 1900
- *John Tresch* (University of Pennsylvania, U.S.A.): The Romantic Machine: Technology and Metamorphosis in France, 1820–1851
- *Harriet Ritvo* (Massachusetts Institute of Technology, Boston, U.S.A.): Making Animals Wild
- *Roy Wagner* (Tel Aviv University, Israel): Semiotics of Mathematical Language
- *Karin Zachmann* (Technische Universität München, Germany): Atomic Food for Peace? Materializing a Radiant Idea in a Transnational Network of Research and Development

