



Wissenschaftskolleg zu Berlin

INSTITUTE FOR ADVANCED STUDY

ARBEITSVORHABEN DER FELLOWS
FELLOWS' PROJECTS 2013/2014

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Wenn nicht anders angegeben, erstrecken sich die Fellowships vom 15. September 2013 bis zum 15. Juli 2014.

If not otherwise indicated, the Fellowships extend from September 15, 2013 to July 15, 2014.

VORWORT

In dieser Broschüre werden die Fellows des Wissenschaftskollegs im akademischen Jahr 2013/14 vorgestellt. Im Zentrum steht die Beschreibung der Arbeitsvorhaben, denen sie sich während ihres Aufenthaltes am Wissenschaftskolleg widmen wollen. Dazu kommen bibliografische Empfehlungen mit den Titeln einiger Aufsätze oder Bücher, die sie Interessenten zur Lektüre empfehlen, sowie kurze biografische Angaben.

Die meisten Fellows kommen für ein volles akademisches Jahr (15. September bis 15. Juli) und verfolgen ein individuelles Forschungsvorhaben. In jedem Jahr gibt es aber auch eine Reihe von Wissenschaftlern, die in Schwerpunktgruppen eingebunden sind. Die Zugehörigkeit zu einer Schwerpunktgruppe sowie gegebenenfalls eine kürzere Aufenthaltsdauer sind jeweils vermerkt.

In der Zeit zwischen dem Redaktionsschluss dieser Broschüre und dem Beginn des akademischen Jahres am 15. September 2013 können sich noch leichte Änderungen ergeben. Aktualisierte Informationen zu den Fellows und ihren Arbeitsvorhaben sowie zu Veranstaltungen mit Fellows und zum Wissenschaftskolleg insgesamt stehen auf der Internetseite des Wissenschaftskollegs – wiko-berlin.de – zur Verfügung.

Berlin, im Juli 2013

PREFACE

This brochure presents the Fellows of the academic year 2013/14. Each Fellow provides a short description of the work he or she plans to pursue during the stay at the Wissenschaftskolleg. Also listed are brief biographical notes as well as recommended reading.

The majority of the Fellows come for an entire academic year (September 15 through July 15). The Wissenschaftskolleg invites most of its Fellows on the basis of their individual research plans. Some Fellows, however, are integrated in focus groups. Membership in a focus group and a shorter planned stay are noted for each Fellow, where applicable.

Between the submission deadline to this brochure and the beginning of the academic year on September 15, 2013, some minor changes may arise. Up-to-date information on the Fellows, their work plans, and the Wissenschaftskolleg in general is available on the Wissenschaftskolleg's website wiko-berlin.de.

Berlin, July 2013

PIERRE-LAURENT AIMARD

Concert Pianist, Professor of Piano, Professor of Chamber Music
Hochschule für Musik und Tanz, Köln

Born in 1957 in Lyon

Studied at the Conservatoire national supérieur de musique et de danse de Paris

1. THE LIGETI PROJECT

2. J. S. BACH'S *WELL-TEMPERED CLAVIER*

Ad 1. The purpose of the project is to create a website that functions as a pedagogical resource for professional pianists, teachers, students, and anyone interested in learning more about the music of the Hungarian composer György Ligeti and its performance.

During the past seven years, the Klavier-Festival Ruhr, in close collaboration with Tamara Stefanovich and me, has developed an acclaimed series of educational and artistic initiatives about contemporary piano music (see www.klavierfestival.de/klaviermodern).

We now wish, over the next two years, to further develop this internationally regarded initiative with an extensive project about the piano music of György Ligeti. Central to this ambitious aim is the development of a new kind of Internet site about Ligeti's music. The development of the website will have a double aim: on the one hand, to enthuse a broad public about the music of Ligeti. On the other, to encourage pianists to immerse themselves in Ligeti's piano works and to include them in their repertoire.

Ad 2. The aim is an in-depth study of the first book of Johann Sebastian Bach's *Das Wohltemperirte Clavier* (1722).

Recommended Listening

Pierre-Laurent Aimard, Aka Pygmies. *African Rhythms*. György Ligeti, Steve Reich. Teldec Classics, 2003.

Pierre-Laurent Aimard. *Bach: Die Kunst der Fuge*. Deutsche Grammophon, 2008.

Recommended Reading

Pierre-Laurent Aimard. *Rôle et responsabilités de l'interprète aujourd'hui*. Collège de France: Editions Fayard, 2009.

ATHENA C. AKTIPIS
Ph.D., Evolutionary Biology
University of California, San Francisco

Born in 1981 in Chicago, Illinois
Studied Ecology and Evolutionary Biology at the University of Arizona
and Psychology at the University of Pennsylvania

SOCIAL DILEMMAS AND EVOLUTIONARY TRADEOFFS IN CANCER

Focus Group *Cancer Evolution* (see p. 130)

During my time at the Wissenschaftskolleg, I plan to continue my research on applying evolutionary theory and principles of social dilemmas to the problem of cell motility, invasion, and metastasis. I plan to deepen this approach by accounting for the cancer equivalents of niche construction dynamics (including angiogenic signaling, macrophage recruitment, modification of the extracellular matrix, or production of immune factors). I also would like to further explore some of the implications of our model of the stem cell theory, including the possibility that groups of cells may be acting as “protomulticellular” units, with non-stem cells promoting the fitness of stem cells directly or indirectly through niche construction dynamics.

I intend to continue my work on life history tradeoffs in cancer (e.g., between fertility and cancer susceptibility) addressing questions such as:

- Does the profile of hormone-negative cancer reflect evolutionary life history tradeoffs?
- How do early life stress and social support influence life history trajectories and subsequent cancer risk?
- Do reproductive hormones such as testosterone and estrogen influence both fertility and cancer susceptibility?

- What is the role of ovulation (frequency, intensity, and hormonal profile) in influencing cancer susceptibility, especially for female reproductive cancers?
- Are placental mammals more susceptible to cancer because they have reproductive tissues that are receptive to growths?

Recommended Reading

Aktipis, C. A. and R. Nesse (2013). "Evolutionary foundations for cancer biology." *Evolutionary Applications* 6, 1: 144–159.

Aktipis, C. A., C. C. Maley, and J. W. Pepper (2012). "Dispersal evolution in neoplasms: The role of dysregulated metabolism in the evolution of cell motility." *Cancer Prevention Research* 5, 2: 266–275.

Aktipis, C. A. (2011). "Is cooperation viable in mobile organisms? Simple Walk Away strategy favors the evolution of cooperation in groups." *Evolution and Human Behavior* 32, 4: 263–276.

DANIELLE S. ALLEN

Ph.D., UPS Foundation Professor of Social Science
Institute for Advanced Study, Princeton

Born in 1971 in Takoma Park, Maryland
Studied Government at Harvard University and Classics at
King's College, Cambridge

POLITICAL EQUALITY

In the 20th century, we came to understand political equality as meaning primarily formal civic rights: the rights to vote, serve on juries, and run for elected office. These political rights are, of course, fundamental; but civic rights are only a part of the story about political equality. In recent work, I have sought to develop a more expansive account and have identified five facets of the ideal (*Our Declaration: a Reading of the Declaration of Independence in Defense of Equality*. Norton, 2014). First, political equality entails the achievement of freedom from domination for individual citizens as well as for the polity as a whole. Second, political equality requires egalitarian access to the instrument of government so crucial to the pursuit of happiness. Third, political equality consists of approaches to the cultivation of collective intelligence, “epistemic egalitarianism”, that leverage the intellectual capacities of all citizens, however variable those may be. Fourth, political equality achieves equality of agency for citizens and rests on an associational egalitarianism that establishes norms and practices of genuine reciprocity as the baseline for decent interactions with one’s fellow citizens. Fifth and finally, political equality includes the egalitarianism of co-creation and co-ownership of our shared world, an expectation for inclusive participation that fosters in each citizen the self-understanding that she, too, he, too, helps to make, and is responsible for, this world in which we live together.

Recommended Reading

Allen, Danielle S. and Rob Reich, eds. *Education, Justice and Democracy*. Chicago: University of Chicago Press, 2013.

Allen, Danielle S. *Why Plato Wrote*. Malden, Mass.: Wiley-Blackwell, 2010.

—. *Talking to Strangers: Anxieties of Citizenship since Brown v. Board of Education*. Chicago: University of Chicago Press, 2004.

ELENA ARRIERO

from September 2013 to January 2014

Fellow of the College for Life Sciences (see p. 135)

Ph.D., Psychology

Universidad Complutense de Madrid

Born in 1974 in Talavera de la Reina, Toledo, Spain

Studied Biology at the Universidad Complutense de Madrid and Environmental

Management at the Universidad Politécnica de Madrid

FIGHT OR LIVE WITH THE ENEMY: ASSESSING ECOLOGICAL AND EVOLUTIONARY IMPLICATIONS OF TOLERANCE AND RESISTANCE AGAINST PATHOGENS

The main objective of this project is to disentangle host defense strategy against parasites into mechanisms of tolerance and resistance, and to assess the ecological and evolutionary consequences of both concepts for host-parasite interactions. Although the concepts of tolerance and resistance have been the focus of numerous theoretical and empirical studies of host-parasite interactions in plants and microorganisms over the last decades, research in animal ecology and parasitology has mostly neglected this dichotomy in defensive mechanisms when studying the consequences of parasitism. However, several recent studies in animals have shown exciting results about genetic variance in tolerance and resistance and trade-offs between them. The role of tolerance and resistance as part of the host defense strategy beyond the traditional view of a defense strategy based exclusively on resistance mechanisms raises new questions about its mechanisms, interactions, and evolutionary consequences. This project aims to elucidate mechanisms of tolerance, explore relationships between tolerance and resistance, and explore associations between host life history traits and mechanisms of defense. To achieve these objectives, I use birds and their pathogens as model systems, focusing on combinations of host species and pathogens for

which there is extensive knowledge about the consequences of the disease (e.g. passerine birds and avian malaria).

The expected results of this project will contribute to our understanding of the role of parasitism as a natural selection force in the evolution of host life history. In addition, parasites and pathogens are a major threat to animal and human health and can also cause important economic losses in domestic animals. Therefore, understanding host mechanisms of defense may contribute to a more efficient way of controlling the spread of diseases by applying these concepts to epidemiological models. Furthermore, understanding the evolutionary consequences of tolerance and its role in the arm races between hosts and parasites may also have important applied implications in the artificial selection of domestic animals.

Recommended Reading

Arriero, E., A. Majewska, and T. E. Martin (2013). "Ontogeny of constitutive immunity: maternal vs. endogenous influences." *Functional Ecology*. doi:10.1111/1365-2435.12057

Arriero, E. (2009). "Rearing environment determines associations between components of immune defense in blue tit nestlings *Cyanistes caeruleus*." *Oecologia* 159, 4: 697–704.

Arriero, E. and A. P. Møller (2008). "Host ecology and life history traits associated with parasite species richness in birds." *Journal Evolutionary Biology* 21: 1504–1513.

CHEIKH ANTA MBACKÉ BABOU

Ph.D., Associate Professor of History

University of Pennsylvania

Born in 1958 in Meckhe, Senegal

Studied African History at Michigan State University, Education Sciences

at the École Normale Supérieure, Dakar, and African History at the

University of Dakar

MAKING ROOM FOR ISLAM IN THE WEST: WEST AFRICAN MUSLIMS IN EUROPE AND NORTH AMERICA

Significant international migration from Islamic West Africa to Europe and North America began in the aftermath of World War II and accelerated between the 1960s and 1990s. West African Muslims have been particularly successful in making room for Islam in the Western world. My research investigates this process of space making and the different ways Africans from the former French colonies in West Africa were able to negotiate their insertion into the Western public sphere at a time of increasing tension with Islam. In contrast to Arab immigrants who have severed their links with moderate centers of Islamic spirituality in North Africa, West Africans have maintained strong bonds with sources of religious knowledge and authority in Africa, and these sources remain powerful shapers of their Islamic identity. The continuing influence of religious ideas and leadership from the African continent has allowed Africans in Europe and North America to resist the wave of political radicalization that has recently swept other Muslim communities living in the West.

Recommended Reading

Babou, Cheikh Anta Mbacké. *Fighting the Greater Jihad: Amadu Bamba and the Founding of the Muridiyya of Senegal, 1853–1913*. Athens: Ohio University Press, 2007.

—. “Brotherhood Solidarity, Education and Migration: The Role of the Dahiras among the Murid Muslim Community of New York.” *African Affairs* 403 (2002): 151–170.

—. “Exploring the Impact of Migration Abroad and at Home: Money, ‘Caste’, Gender, and Social Status among Senegalese Female Hair Braiders in the United States.” *Africa Today* 55, 2 (2009): 3–22.

SETH BARRIBEAU

from September to December 2013

Fellow of the College for Life Sciences (see p. 135)

Ph.D., Evolutionary Biology

Swiss Federal Institute of Technology, Zurich

Born in 1980 in Ithaca, New York

Studied Zoology at the University of Canterbury

SOCIALITY IN A DIRTY WORLD: TRACKING THE EVOLUTION OF THE IMMUNE SYSTEM WITH THE EVOLUTION OF SOCIALITY

Animals that live in groups benefit from improved defenses against predators, more efficient foraging, and greater chances of finding a mate. These benefits however come with some substantial costs, including greater competition and increased risk from infectious diseases or parasites. Hosts that aggregate into groups are ideal for parasites, since the chances of finding another suitable host is high. The denser the host group is, the more likely that transmission will be successful. Additionally, the more related the group members are, the more likely it is that a parasite that can infect one of these members will be able to infect another member of the group. Eusocial animals, such as the social insects, represent an extreme of sociality and, in turn, may face an extreme degree of parasite pressure. Leveraging the rapidly expanding genomic resources that are available, I will explore the relationship between sociality and the evolution of the immune system by comparing the immune genes found in the genomes of social species of animals and their closely related non-social relatives. I will explore the diversity and rates of evolution of immune genes in these social and asocial sister species and will explore the literature to try to find patterns of non-traditional immune defenses in social or dense-living organisms relative to their less social relatives. Thus far the link between sociality and the evolution of the immune system has not been explored beyond some observational comments

about a few species. This project will assess the relationship between sociality and immunity across a far greater range of species, including some very distantly related species but with a shared degree of sociality. I hope that this will shed light not only on how sociality and group size have altered the nature of the immune system and how to identify non-traditional immune defenses that emerge from these dense groups, but also how immunity might have contributed to the evolution of sociality.

Recommended Reading

Barribeau, S. M., J. Villinger, and B. Waldman (2012). "Ecological immunogenetics of life-history traits in a model amphibian." *Biology Letters* 8, 3.

Gerardo, N. M., B. Altincicek, C. Anselme, H. Atamian, S. M. Barribeau, et al. (2010). "Immunity and other defenses in pea aphids, *Acyrtosiphon pisum*." *Genome Biology* 11: R21.

Barribeau, S. M., D. Sok, and N. M. Gerardo (2010). "Aphid reproductive investment in response to mortality risks." *BMC Evolutionary Biology* 10: 251.

JOCELYN BENOIST
Ph.D., Professor of Philosophy
Université Paris 1 Panthéon-Sorbonne

Born in 1968 in Paris
Studied Philosophy at the École Normale Supérieure and at the
University of Nanterre

CONTEXTUALISM: FROM LANGUAGE TO MIND

Contextualism in the philosophy of language consists in holding that the truth value of a statement depends on the particular circumstances of its utterance. So, if one wants to assess a statement, one has to take those circumstances into account.

If a statement is taken to be the linguistic expression of a thought, one might be tempted to transpose the contextualist tenet from the analysis of linguistic performances to the analysis of thoughts. However, such transposition proves to be no easy thing. A thought cannot be dealt with as a linguistic performance and its conditions of identification are completely different. It seems clear, however, that the context, in a sense rather similar to the one of the circumstances of utterance, plays a decisive role in the individuation of thoughts as well. Superficially similar thoughts might prove to have really different contents depending on the concrete nexus of relations in which the thinker stands to reality. As a matter of fact, thoughts might have as fine a grain as our ways to be in reality.

Thus, the analysis of thoughts requires some contextualism, too. However, since thoughts are not “uttered” except by utterances in the proper – i.e. linguistic – sense of the term, their way to be contextual as thoughts – not as expressions of them – cannot be the same as the one of linguistic performances.

My project is to articulate this difference, to investigate the particular contextuality one might ascribe to thoughts and the relation between this contextuality and the one of the linguistic performances in which thoughts are expressed.

I thereby expect to take a step further into a possible understanding of the categorial difference – and connection – between language and thought.

Recommended Reading

Benoist, Jocelyn. *Éléments de philosophie réaliste: réflexions sur ce que l'on a*. Paris: Vrin, 2011.

—. *Concepts: Introduction à l'analyse*. Paris: Cerf, 2010.

—. *Les limites de l'intentionnalité: recherches phénoménologiques et analytiques*. Paris: Vrin, 2005.

KASIA M. BIESZCZAD

from January to July 2014

Fellow of the College for Life Sciences (see p. 135)

Ph.D., Neurobiology

University of California, Irvine

Born in 1983 in Kraków, Poland

Studied Biology at McGill University and Neurobiology and Behavior

at the University of California, Irvine

CORTICAL MECHANISMS UNDERLYING THE NEUROBIOLOGICAL SUBSTRATES OF LIFE-LONG LEARNING AND ENDURING MEMORY

The overall goal of my research program is to understand the neurobiological processes that underlie memory specificity and strength. Indeed, that memory can be characterized in terms of specificity (being “about” something) and strength (i.e., some experiences are better remembered, while others are easily forgotten) is fundamental and universal to all memory. However, the neural mechanisms responsible for these memory processes are largely unknown.

I use the term *specificity* to refer to the particular multi-dimensional contents of memory, such as specific details of places, events, and sensations. I refer to *strength* as the relative effectiveness of any such detail to direct behavior. My research permits a comprehensive understanding of memory strength and specificity by combining investigations of stimulus-specific neuroplasticity in the cortex with corresponding stimulus-specific behavior as animals learn and remember. Furthermore, application beyond immediate interpretation for basic science includes an account of the potential mechanisms liable for specific memory failure (e.g., aging or dementia) or when a specific memory becomes abnormally strong in a variety of psychological disorders (e.g., post-traumatic stress disorder or addiction).

Behaviors are dictated by the functional organization of the brain. Moreover, this organization can change as a function of experience in order to adapt behaviors to new circumstances. Changing associations between objects or events and their meaning induces neural change (called neuroplasticity) and is governed by psychological rules. For example, learning alters neuronal function on the circuit, molecular and even genetic levels through biological mechanisms that can regulate the expression of genes, alter the connectivity and activity of the brain and, ultimately, produce adapted behavior. My project is to write a review paper that will organize my past research into a comprehensive framework and identify the key open questions for future research.

Recommended Reading

Bieszczad, K. M. and N. M. Weinberger (2010a). “Representational gain in cortical area underlies increase of memory strength.” *Proceedings of the National Academy of Sciences, USA* 107, 8: 3793–3798.

Bieszczad, K. M. and N. M. Weinberger (2010b). “Remodeling the cortex in memory: Increased use of a learning strategy increases the representational area of relevant acoustic cues.” *Neurobiology of Learning and Memory* 94, 2: 127–144.

Bieszczad, K. M., A. A. Miasnikov, and N. M. Weinberger (in press). “Remodeling sensory cortical maps implants specific behavioral memory.” *Neuroscience* April 29; 246C: 40–51. doi:10.1016/j.neuroscience.2013.04.038 [Epub ahead of print].

FELIX BREDEN

Ph.D., Professor of Biological Sciences

Simon Fraser University, Burnaby, British Columbia

Born in 1952 in Evanston, Illinois

Studied Zoology and Mathematics at the University of South Florida and the

University of Georgia, and Biology at the University of Chicago

EFFECTS OF GENE DUPLICATION ON THE EVOLUTION OF EXAGGERATED TRAITS IN SENDER/RECEIVER AND IMMUNE SYSTEMS

Focus Group *Origin and Evolution of Exaggerated Traits* (see p. 132)

One of the focus questions for our group is the role of gene duplication and other elements of genetic architecture (e.g., linkage of these genes to sex chromosomes versus autosomes, or the size of the effect of each gene on the resulting phenotype) on the expression and perception of exaggerated traits. As in so many fields of modern biology, these questions are being revolutionized by the deluge of genomic data being produced for both model and non-model organisms. I will apply this revolutionary ability to study the genomics of exaggerated traits to two complementary systems:

First, in guppies and closely related species, genes for male coloration are highly duplicated on sex chromosomes, and genes for perceiving this coloration (opsins) have duplicated and differentiated in the most colorful lineages. I hypothesize that “runaway selection” for the duplication of coloration genes and duplication of sensory genes has driven diversification in these species in a self-reinforcing feedback loop. Using the comparative method I will look for a correlation between gene copy number underlying these two types of traits. This idea of reciprocal gene duplication in co-evolving signal/receiver systems may drive a rapid expansion of gene families in other systems, such as olfactory

receptors and the desaturases that modify chemosensory chemicals, and sperm-binding proteins and the receptors that bind these on egg membranes.

Second, jawed vertebrates respond to the diversity of pathogens they encounter by producing an almost limitless antibody repertoire, based on three expanded gene families. I will explore the effect of gene duplication on the expansion of the highly exaggerated antibody repertoire and the contradictory effects that pathogen recognition versus recognition of self and autoimmunity has had on the evolution of these gene families.

The study of these two systems will be complementary in that in both cases the organism must sense and adapt to rapidly changing environmental constraints, and then these adaptive genomic changes select for further diversification in the environmental pressures.

Recommended Reading

Watson, C. T. and F. Breden (2012). “The immunoglobulin heavy chain locus: genetic variation, missing data, and implications for human disease.” *Genes and Immunity* 13: 363–373.

Sandkam, B. A., J. B. Joy, C. T. Watson, P. Gonzalez-Bendiksen, C. R. Gabor, and F. Breden (2012). “Hybridization leads to sensory repertoire expansion in a gynogenetic fish, the Amazon Molly (*Poecilia formosa*): a test of the hybrid-sensory expansion hypothesis.” *Evolution* 67, 1: 120–130.
doi:10.1111/j.1558-5646.2012.01779.x.

Hoffmann, M., N. Tripathi, S. R. Henz, A. K. Lindholm, D. Weigel, F. Breden, and C. Dreyer (2007). “Opsin gene duplication and diversification in the guppy, a model for sexual selection.” *Proceedings of the Royal Society of London B* 274: 33–42.

BRUCE G. CARRUTHERS

Ph.D., John D. and Catherine T. MacArthur Professor of Sociology
Northwestern University, Evanston, Illinois

Born in 1957 in Philadelphia

Studied Communication Studies at Simon Fraser University, Burnaby,
Sociology at Rutgers, The State University of New Jersey, and Sociology
at the University of Chicago

TRUST AND THE QUANTIFICATION OF CREDIT

Focus Group *Quantification* (see p. 134)

I will complete a book on the sociology of trust. Trust involves both uncertainty and vulnerability and becomes problematic when an individual is vulnerable to the unpredictable actions of another. How do people manage trust? I consider this by examining the development of credit and credit institutions in the US from the early 19th until the mid-20th century. Credit forms the foundation of modern market economies and poses a basic problem: how do creditors decide which debtors to trust? Creditors manage this practical problem in various ways, but their decisions combine individual factors, social networks, and social institutions. Over time, the focus of credit management shifted from the debtor's personal character in the context of informal social relations to the systematic use of quantitative data with reliance on formal-legal relations. Character still mattered, but not as much. Personal trust based on direct contact, informal relations, and idiosyncratic knowledge has given way to impersonal trust based on indirect contact, formal relations, and quantified knowledge. My study examines how formalization and institutional change shaped trust and consequently affected the volume and forms of credit. Three levels encompass the factors that creditors used to decide whom to trust. The *individual* level includes the debtor's personal character and financial status (how creditors measure these has changed with more systematic financial information) and

debtor and creditor goals. The *network* level includes the informal social relationships between debtor and creditor, the formal-legal relations between debtor and creditor, the debtor's and creditor's other network ties, and intermediaries between debtor and creditor. The *institutional* level includes the legal remedies available if default occurs (e.g., bankruptcy law), but institutions also affect how the other levels operate. For instance, legal and regulatory changes make possible new formal contractual ties between debtors and creditors, and legal and organizational developments have created new ways to assess the financial status of debtors (e.g., credit ratings, accounting measures). These factors are not equally important, and the balance among them has shifted over time.

Recommended Reading

Halliday, Terence C. and Bruce G. Carruthers. *Bankrupt: Global Lawmaking and Systemic Financial Crisis*. Stanford: Stanford University Press, 2009.

Carruthers, Bruce G. *City of Capital: Politics and Markets in the English Financial Revolution*. Princeton, NJ: Princeton University Press, 1996.

Carruthers, Bruce G. and Wendy Espeland. "Accounting for Rationality: Double-Entry Bookkeeping and the Rhetoric of Economic Rationality." *American Journal of Sociology* 97, 1 (1991): 31–69.

JOHN CARSON

from January to April 2014

Ph.D., Associate Professor of History

University of Michigan

Born in 1954 in Bryn Mawr, Pennsylvania

Studied Philosophy at Harvard University and History at Princeton University

MEDICAL JURISPRUDENCE AND UNSOUNDNESS OF MIND IN ANGLO-AMERICAN COMMON LAW

Focus Group *Quantification* (see p. 134)

My research project investigates how the Anglo-American legal and medical communities constituted and contested the concept of “unsoundness of mind” (*non compos mentis*) during the 18th and 19th centuries. During the first decades of the 19th century, an extraordinary transformation took place in Anglo-American adjudications around the issue of mental competency. Challenging strict common law standards that minimized occasions when 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 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. At the same time, the practical necessities involved in remaking notions of and practices around mental deficit, diminished responsibility, weakness of mind, and a host of other conditions loosely categorized in the law as “unsoundness of mind” often encouraged each community to cooperate as well as spar with the other. My goal in this project is to use the newly emerging quasi-subdiscipline of medical jurisprudence to examine this tangle of contradictory tendencies and

motives by analyzing the very different languages of mental impairment and personal agency that evolved within the legal and medical worlds during the late 18th and the 19th centuries. Central to my investigation is concern with the ways and degree to which quantification served as a means to establish demarcations between the normal and those deemed “unsound of mind”.

Recommended Reading

Carson, John. “Has Psychology ‘Found Its True Path’? Methods, Objectivity, and Cries of ‘Crisis’ in Early Twentieth-Century French Psychology.” *Studies in the History and Philosophy of the Biological and Biomedical Sciences* 43 (2012): 445–454.

—. *The Measure of Merit: Talents, Intelligence, and Inequality in the French and American Republics, 1750–1940*. Princeton, NJ: Princeton University Press, 2007.

—. “Minding Matter/Mattering Mind: Knowledge and the Subject in Nineteenth-Century Psychology.” *Studies in the History and Philosophy of the Biological and Biomedical Sciences* 30 (1999): 345–76.

KATHLEEN M. COLEMAN
D.Phil., James Loeb Professor of the Classics
Harvard University

Born in 1953 in Harare, Zimbabwe
Studied Latin at the University of Cape Town, Classics at the University of
Rhodesia (now Zimbabwe), and Latin at the University of Oxford

STAGED VIOLENCE: THE SPECTACLES OF THE ROMAN ARENA

My project investigates how the violent spectacles of the Roman amphitheatre – gladiatorial combat, beast hunts, staged naval battles, and spectacular forms of capital punishment – fit into the attitudes and conventions of Roman society as a whole. I will focus on the high Empire, but the early development of arena spectacles will also be crucial, to illustrate the shift from the staging of gladiatorial combat as a funerary celebration to its deployment as a highly politicized means of social control. It will also be necessary to account for the gradual disappearance of, first, gladiatorial combat and, ultimately, staged hunts in Late Antiquity, which should be attributed not only to changing social, political, and – especially – economic factors, but also to a gradual shift of taste, the reasons for which I shall try to identify.

The extravaganzas put on by the emperors in the Colosseum at Rome have often claimed the scholarly limelight. I will continue a trend in modern scholarship that moves the spotlight from the “big men” of the metropolitan center to the “little men” of the Italian peninsula and the provinces, and try to account for the complex social, economic, political, and psychological factors that sustained violent entertainment as the standard export of Roman culture throughout the entire empire for almost half a millennium. Much of the evidence comes from inscriptions – both honorific and funerary – testifying to the munificence of sponsors and the achievements of the gladiators whom they displayed; or from coins recording imperial grants of privilege for cities that staged violent

spectacle; or from lamps stamped with images of gladiators in combat, or a frieze of their weapons; or from reliefs and mosaics that represent with gruesome particularity the suffering of combatants and victims. I intend to combine all this evidence, along with the scanty literary treatments that survive, in order to explain the role played by violent spectacle in Roman imperial society.

Recommended Reading

Coleman, Kathleen M. "Valuing Others in the Gladiatorial Barracks." In *Valuing Others*, edited by Ralph M. Rosen and Ineke Sluiter, 419–445. Leiden: Brill, 2010. (Penn–Leiden Colloquium on Ancient Values V.)

—. "Launching into History: Aquatic Displays in the Early Empire." *Journal of Roman Studies* 83 (1993): 48–74.

—. "Fatal Charades: Roman Executions Staged as Mythological Enactments." *Journal of Roman Studies* 80 (1990): 44–73.

LORRAINE DASTON

Permanent Fellow of the Wissenschaftskolleg

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Professor, Committee on Social Thought, University of Chicago

Born in 1951 in Michigan

Studied History, Philosophy of Science, and History of Science

at Cambridge and at Harvard

THE PRACTICES OF COMPENDIA

Berlin, 1900, the Prussian Academy of Sciences. Arthur Auwers, astronomer and Secretary of the Physical-Mathematical Class, was prodding his colleagues to come up with research projects that could compete with those juggernauts already launched by the Philosophical-Historical Class. In principle, Auwers insisted, the scientists also subscribed to the model of lavishly funded big projects, “Großbetrieb der Wissenschaft”, which had brought the academy so much fame and fortune. But in practice, Auwers admitted, the scientists had left such glittering undertakings entirely to the humanists. Aside from one or two projects like the six-volume *Enzyklopädie der mathematischen Wissenschaften* (1895–1934), the money had all gone to ambitious projects in the humanities: the Egyptian dictionary, the prosopography of the Roman empire, the edition of Frederick the Great’s political correspondence – and of course the model for all Big Science, Theodor Mommsen’s monumental *Corpus Inscriptionum Latinarum*. And when the Physical-Mathematical Class finally did get its act together under Auwers and had come up with its own competing projects, like “Das Tierreich” (begun in 1896 and taken over by the Prussian Academy in 1900) or “Das Pflanzenreich” (also begun in 1900), they imitated the model of the glamorous humanities projects: vast, erudite compilations of everything that was known on a subject, be it Latin inscriptions or plant species. In terms of price tag, not to mention international renown, the projects of the humanists dwarfed those of the scientists. In the Prussian Academy, arguably the most

prestigious scientific and scholarly body in the world circa 1900, it would be fair to speak of “humanities envy”.

The point of this story is not to evoke nostalgia among humanists for the Good Old Days but rather to draw attention to a set of scholarly-cum-scientific practices that span the Two Cultures divide: the practices of compendia. These are the practices of collecting a corpus or a canon of working objects, be they all the stars visible from the earth down to the 14th magnitude, Latin inscriptions, or fossils, as well as those that organize, describe, collate and compare the items in the collection in search of unsuspected patterns and regularities – a new nebula, the geographic distribution of Alexandrian coins, the geological intervals between mass extinctions.

The heyday of these practices was arguably in the 19th century when not only academies but international scientific societies organized mammoth projects like the *Carte du Ciel* or the International Cloud Atlas, both of which took decades to complete and involved collaborators all over the globe. But the practices of compendia are still very much with us in the age of Big Data and the Digital Humanities, which have reanimated the desire to collect, collate and compare on an even grander scale. If anything, the rise of the database and the Internet has intensified the links between the practices of those branches of the sciences and the humanities that depend crucially on large compendia.

The ultimate aim of this historical study of the practices of compendia, then and now, is to unsettle our assumptions about the current classification of knowledge. If we were to redraw the map of the sciences according to shared practices, there would be plenty of surprises, depending on which practices we chose. Moreover, a periodization of the history of the sciences and humanities would also be transformed if we tracked practices rather than theories or discoveries. Instead of a jagged succession of scientific revolutions we would see long, smooth stretches of continuity – which in the case of the practices of compendia are very long indeed.

Recommended Reading

Daston, Lorraine. “The Sciences of the Archives.” *Osiris* 27 (2012): 156–187.

MÍCHEÁL DE BARRA

from January to April 2014

Fellow of the College for Life Sciences (see p. 135)

Ph.D., Psychology

Stockholm University

Born in 1983 in Waterford, Ireland

Studied Psychology at the London School of Hygiene and at the National

University of Ireland, Galway as well as Tropical Medicine and Evolutionary

Psychology at the University of Liverpool

THE CULTURAL EVOLUTION OF HARMFUL MEDICINE

A key difference between humans and other species is that humans rely on knowledge, skills and tools that have been developed by other people. Because this cultural information has often evolved over long periods, we benefit from the wisdom (and the lessons of the errors) of past generations. In general, this reliance on cultural information has been a success: humans thrive in almost every habitat and do some very interesting things.

However, the cultural knowledge we acquire from others is not always reliable or beneficial. Take medical treatments, for example. Bloodletting was an important treatment that persisted for a millennia or more, despite its significant harms (shock, blood-borne disease, sepsis etc.). This history of medicine is full of such examples. This raises some interesting questions: why is culturally acquired information sometimes good and sometimes not? How do the processes that lead to effective hunting tools, warm clothing and efficient agriculture also lead to vaccine scares, bloodletting and trephination?

One explanation might lie in the nature of feedback one receives after trying different cultural traits. Perhaps the costs and benefits of some kinds of cultural traits are difficult to evaluate. Another might be the nature or size of the social networks that these traits are embedded within. Perhaps knowledge of good treatments deteriorates when only a few people make use of them in each

generation. At the Wissenschaftskolleg I will be using a large cross-cultural ethnography database to compare explanations for the persistence of harmful medical traits. I'll be examining the relationship between different medical practices and the broader culture in which they are nested. This will help illuminate the conditions under which harmful practices are likely to spread and persist.

Recommended Reading

Curtis, V., M. de Barra, and R. Aunger (2011). "Disgust as an Adaptive System for Disease Avoidance Behaviour." *Philos Trans R Soc Lond B Biol Sci* 27, 366, 1563: 289–401.

EMMANUEL DIDIER

Dr. en science politique, Chargé de recherche en science politique
Centre National de la Recherche Scientifique, Paris

Né en 1970 à Paris

Études de statistique à l'École Nationale de la Statistique et de l'Administration
Économique, de sciences sociales à l'École Normale Supérieure, et de socio-
économie de l'innovation à l'École Nationale Supérieure des Mines de Paris

LES QUANTITES DE L'ETAT NEO-LIBERAL

Groupe de réflexion *Quantification* (see p. 134)

Des statistiques d'un nouveau genre semblent actuellement omniprésentes dans les administrations publiques. On peut les regrouper sous le nom général de *Benchmarking* (Bruno et Didier 2013). Elles ne servent pas à mesurer, comme par le passé, des objets extérieurs à l'Etat (les questions sociales, la conjoncture économique), mais l'activité de ses agents. Elles visent à les motiver, à les inciter à s'investir davantage dans leur travail en leur fixant des objectifs quantifiés ou en y instillant une certaine dose de compétition, et par conséquent elles portent aussi la thématique de l'évaluation. L'Etat n'est plus un phare dont le rayon statistique éclairait les objets lointains, il est devenu un ver luisant, produisant une phosphorescence quantitative blafarde sur lui-même.

Est-il bon, est-il méchant (pour reprendre un titre qu'Alain Desrosières (2012) a lui-même repris de Diderot) ? En tout cas, la question que posent tous les acteurs concernés par le *Benchmarking* ne porte pas seulement sur les transformations de ce qu'est une administration, mais remonte jusqu'à la source de son autorité, jusqu'à l'Etat lui-même ainsi qu'à ses rapports avec le capitalisme. Cette épreuve est très communément appelée « néolibérale » par les acteurs, qui se réclament ainsi de Foucault (2004) lorsque ce dernier analysait ce qu'il appelait les technologies de sécurité et leur dissémination dans le corps social. Il parlait alors de gouvernement néolibéral et de gouvernementalité, mais assez peu

spécifiquement de l'Etat, précisément parce qu'il montrait que ces technologies exercent un pouvoir qui ne lui est pas essentiellement attaché. Nous prolongerons le programme visant à montrer que les statistiques transforment la réalité qu'elles décrivent (Espeland 2007), mais en nous attachant aux transformations opérées sur l'Etat lui-même. On cherchera donc à circonscrire ce que l'on peut appeler un Etat néolibéral, ses rapports avec un certain type de statistiques et une certaine façon de concevoir la société (Desrosières 2008).

Lectures recommandées

Didier, Emmanuel. *Benchmarking. L'Etat sous pression statistique*. Avec Isabelle Bruno. Paris : La Découverte, coll. Zones, 2013.

—. *En quoi consiste l'Amérique ? Les statistiques, le New Deal et la démocratie*. Paris : La Découverte, 2009.

JAMES A. DOYLE

Ph.D., Philosophy

Institute for Advanced Study, Princeton

Born in 1963 in Petrolia, Ontario, Canada

Studied Philosophy at the University of Cambridge and
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SELF-KNOWLEDGE AND SELF-REFERENCE

The issues I am interested in working on are, in order of increasing specificity, the meaning of first-person statements (statements involving “I”, e.g. “I am walking down Fifth Avenue.”), the status of those first-person statements that are not based on observation (e.g. “My left leg is bent.”), and the nature of those non-observational first-person statements in which I ascribe to myself a conscious mental state (e.g. “I have no idea whether it will rain tomorrow.”).

These sets of questions are nested, in that answers to the more specific ones presuppose answers to the less specific ones. This gives a unity to the three inquiries: only if one understands the significance of the first-person pronoun can one be confident that one’s account of non-observational self-knowledge won’t be vitiated by false assumptions; and only if one understands non-observational self-knowledge can one be sure that one’s account of the self-ascription of conscious states is not built on sand.

As regards the first-person pronoun, I am drawn to the kind of account given by Elizabeth Anscombe in her paper “The First Person” and by David Lewis in “Attitudes *de dicto* and *de se*”. The basic idea here is that, despite appearances, “I” is not a referring expression and there is no ‘self’ for it to refer to. This thesis has met with widespread incredulity. The task of working out in more detail how a ‘non-referentialist’ account might go is an urgent one for those who suspect, as I do, that the problems faced by the referentialist account might well turn out to be insoluble. I also suspect that as more detail is provided, at least some of the obvious-seeming objections will be seen to be inconclusive.

I would like to explore the implications of this line of thought for the non-observational practical knowledge that comes with the performance of intentional action, which Aquinas described as “the cause of what it understands”. How should we understand the content of this knowledge if “I” is not a referring expression?

The last of my three issues is the self-ascription of conscious mental states. I will argue that unless we require that a conscious state – to be conscious – be self-ascribable from knowledge, an otherwise plausible conception of conscious mental states cannot be made to work.

Recommended Reading

Doyle, James. “Socratic Methods.” *Oxford Studies in Ancient Philosophy* 42 (July 2012).

—. “Finkelstein on the Distinction between Conscious and Unconscious Mental States.” In *Rethinking Epistemology*, edited by Günter Abel and James Conant. Berlin: De Gruyter, 2011.

—. “The Socratic Elenchus: No Problem.” In *The Force of Argument: Essays in Honor of Timothy Smiley*, edited by Jonathan Lear and Alex Oliver. London: Routledge, 2010.

WENDY ESPELAND

Ph.D., Professor of Sociology

Northwestern University, Evanston, Illinois

Born in 1955 in St. Paul, Minnesota

Studied Sociology at the University of Chicago

COMMENSURATE WORLDS: HOW WE DO THINGS WITH NUMBERS

Focus Group *Quantification* (see p. 134)

During my fellowship year I will work on my book, *Commensurate Worlds: How We Do Things with Numbers*, and several related articles that investigate quantification as a powerful social process. Commensuration involves processes of turning qualities into quantities that share a metric. It is a technology of integration that expresses difference as magnitude, as a matter of more-or-less rather than of kind, and that creates precise ordinal relationships among even the most disparate things.

Our world is saturated with commensuration. Prices seem natural and we routinely measure everything from the amount of television we watch to the distance between galaxies. We commensurate to demonstrate our objectivity, express values, simplify decisions, and make us rational. Commensuration makes a messy world seem easier to control. It bolsters our courage to act. Commensuration is so ordinary that we hardly notice how much social life it organizes, how much work it requires, or just how radical it is. My research recovers these features of commensuration through an analysis of four cases selected for their variation.

My first case investigates how commensuration creates new objects. The 1990 Clean Air Act introduced market-based approaches to regulation in the US by transforming air pollution from a harmful externality to a commodity traded on open markets. The new objects created – allowances to emit sulfur dioxide, a

component of acid rain – required commensuration that was cognitive and technical. A second case examines how commensuration creates new kinds of people. Alfred Kinsey’s measures of homosexual behavior encouraged some to understand homosexuals as a minority group and diffused “10 %” as a conventional, deeply politicized estimate of the proportion of homosexuals. My third case considers the emergence and spread of double-entry bookkeeping [DEB] in late 14th-century Europe. DEB was a stunning technical advance that helped form the conceptual infrastructure of modern capitalism. My final case addresses the aesthetic qualities of quantification in social science. Whether a graceful equation or a lovely graph, those who make and use numerical pictures want them to be elegant as well as accurate. Together these cases demonstrate number’s constitutive power: to create new objects, people, epistemic cultures, and artistic values.

Recommended Reading

Espeland, Wendy and Mitchell Stevens. “A Sociology of Quantification.” *European Journal of Sociology (Archives Européennes de Sociologie)* 49, 3 (2009): 401–436.

Sauder, Michael and Wendy Espeland. “The Discipline of Rankings: Tight Coupling and Organizational Change.” *American Sociological Review* 74, 1 (2009): 63–82.

Espeland, Wendy and Michael Sauder. “Rankings and Reactivity: How Public Measures Recreate Social Worlds.” *American Journal of Sociology* 113, 1 (2007): 1–40.

PAUL W. EWALD
from May to July 2014
Ph.D., Professor of Biology
University of Louisville, Kentucky

Born in 1953 in Evanston, Illinois
Studied Biological Sciences at the University of California, Irvine
and Zoology at the University of Washington, Seattle

A UNIFIED EVOLUTIONARY THEORY OF CANCER

Focus Group *Cancer Evolution* (see p. 130)

For over a half century, since the discovery of the DNA code, genetic mutations have been incriminated as the primary culprit in causing cancer. Over the past 30 years, however, cancer has been the hottest area of the germ-theory revolution and probably will remain so over the next 30. This current phase of the germ-theory revolution has been driven by molecular biology, biochemistry, and evolutionary biology, but it has been occurring largely behind the scenes, only occasionally taking center stage when debate is stirred through a new breakthrough such as the vaccine against cervical cancer. Although the emerging recognition of infectious causes of cancer retains mutations as essential causes of the disease, it emphasizes their effects in later stages of cancer development.

My project will be to complete a book that integrates this dimension of the germ theory into a general framework for understanding the causation, prevention, and treatment of cancer. This book will use an evolutionary perspective to draw together recent advances in understanding interacting roles of infectious causation, mutation, and the microenvironment in oncogenesis.

Recommended Reading

Ewald, P. W. and H. A. Swain Ewald (2013). "Toward a general evolutionary theory of oncogenesis." *Evolutionary Applications* 6: 70–81.

— (2012). "Infection, mutation, and cancer evolution." *Journal of Molecular Medicine* 90: 535–541.

— (2012). *Controlling Cancer: a Powerful Plan for Taking on the World's Most Daunting Disease*. New York: TED Books.

RAGHAVENDRA GADAGKAR

Permanent Fellow of the Wissenschaftskolleg

Ph.D., Professor of Ecology

Indian Institute of Science, Centre for Ecological Sciences, Bangalore

Born in 1953 in Kanpur, India

Studied Zoology and Molecular Biology in Bangalore

THE ORGANIZATION AND EVOLUTION OF INSECT SOCIETIES

Many insect species, particularly those of ants, bees, wasps and termites live in societies consisting of large numbers of individuals. Their colonies are often characterised by sophisticated levels of integration, communication and division of labour and by acts of altruism by some individuals for the welfare of the rest of the colony. The mechanism of evolution of such altruistic behaviour and the mechanisms by which the observed levels of integration, communication and division of labour are achieved are of great interest to biologists and laymen alike and are dominant themes in my project. I have chosen the tropical primitively eusocial wasp *Ropalidia marginata* occurring in Southern India as a model system to investigate these questions.

From time to time I like to write for a general audience, giving an overview of my field of research. My *Survival Strategies* was one such example. This year I will continue to work on a sequel entitled *Reproductive Strategies*, in which I will endeavour to show that throughout the animal kingdom, reproductive success is all about achieving a fine balance between cooperation and conflict among the partners involved.

Recommended Reading

- Gadagkar, Raghavendra. *The social biology of Ropalidia marginata: Toward understanding the evolution of eusociality*. Cambridge, Mass.: Harvard University Press, 2001.
- . “Interrogating an insect society.” *Proceedings of the National Academy of Sciences, USA* 106 (2009): 10407–10414. doi: 10.1073/pnas.0904317106. [Reprinted in *Wissenschaftskolleg zu Berlin, Yearbook 2008–2009*].
- . *Survival strategies: Cooperation and conflict in animal societies*. Cambridge, Mass.: Harvard University Press, 1997.
- . “Science as a hobby: how and why I came to study the social life of an Indian primitively eusocial wasp.” *Current Science* 100 (2011): 845–858.

JENNA M. GIBBS

Post-doctoral Fellowship in the Humanities
(VolkswagenStiftung/Mellon Foundation)

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Florida International University

Born in 1961 in Nottingham, England

Studied History at the University of California, Los Angeles

LIBERTY OF CONSCIENCE: TRANSATLANTIC
EVANGELICALISM, SLAVERY, AND ANTI-SLAVERY,
1730s–1830s

My study will investigate evangelical revivalism's impact on the institution of slavery – working both to unsettle and to legitimate it – and the role of revivalists in antislavery opposition. In contradistinction to regional, national, and denominational studies of evangelicalism and slavery, this Atlantic study will offer a multi-denominational, transnational purview. The study will encompass German and German-American Pietists and Moravians, as well as British and American Baptists, Methodists, Anglicans, and Congregationalists. *Liberty of Conscience* will explore the interchanges among these “awakeners” in Great Britain, mainland North America, German states, and the British Caribbean using mission reports, printed literature, and correspondence. In its emphases on pan-Atlantic clerical networks and slavery discourse, the project will bridge the fields of European, American, Caribbean, and Atlantic history.

Through an analysis of evangelical revivalism's impact on the institution of slavery and the role of revivalists in antislavery opposition, the project also seeks to assess their participation in fundamental redefinitions of the relationships between man and religion driven by the radical precept of spiritual equality. For Pietistic evangelicalism was not – as it is sometimes portrayed – in opposition to the Enlightenment. Indeed evangelicals, many of whom had read and were influenced by major 17th- and 18th-century Enlightenment natural philosophers

and moral economists, significantly revised the relationship between man and religion by emphasizing human equality in Christ's eyes and thus helped redefine the colonized "other" by seeing the enslaved and Native Americans as spiritual equals. This fresh view of colonial (and later imperial) relations between European conquerors and subject peoples, embedded in evangelicals' conviction of the spiritual equality of all humankind and the shared right to religious liberty, or "liberty of conscience", profoundly contributed to Atlantic Enlightenment notions of human nature.

Recommended Reading

Gibbs, Jenna M. *Performing the Temple of Liberty: Slavery, Theater, and Popular Culture in the British Atlantic, 1760s–1850s*. Johns Hopkins University Press, forthcoming 2014.

—. "Columbia the Goddess of Liberty and Slave-Trade Abolition." Special Issue "Staging the Enlightenment." *Sjuttonhundratel (Nordic Eighteenth-Century Studies)*, published by the Swedish, Finnish, and Norwegian Societies for Eighteenth-Century Studies, Uppsala, May 2011, 156–169.

—. "Slavery, Liberty and Revolution in John Leacock's Pro-Patriot Tragicomedy, *The Fall of British Tyranny; or, American Liberty Triumphant* (1776)." *Journal for Eighteenth-Century Studies* 31, 2 (2008): 241–258.

LUCA GIULIANI

Rektor des Wissenschaftskollegs

Dr. phil., Professor für Klassische Archäologie

Humboldt-Universität zu Berlin

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Studium der Klassischen Archäologie, Ethnologie und

Italienischen Literaturwissenschaft an der Universität Basel

und an der Ludwig-Maximilians-Universität München

PHILOSTRAT, *EIKONES*

Die um 200 n. Chr. verfassten *Eikones (Bilder)* des Philostrat gehören zu den Glanzleistungen der griechischen Literatur der römischen Kaiserzeit. Mit ungeheurer Suggestionskraft beschreibt der Autor in diesem Text eine imaginäre Bildergalerie und führt dabei paradigmatisch die Möglichkeiten rhetorischer Bildinterpretation vor. Man hat in der Vergangenheit oft nach dem Realitätsgehalt dieser Bildbeschreibungen gefragt und dabei den entscheidenden Punkt verkannt: Der Text sagt nicht allzu viel über eine reale Bildergalerie aus, wohl aber Entscheidendes über die reale Praxis der Bildbetrachtung. Es gibt kaum einen anderen antiken Text, aus dem so unmittelbar der zeitgenössische Betrachter und Interpret antiker Bildwerke spricht. Das hängt damit zusammen, dass Philostrat nicht nur ein großer Rhetoriker, sondern auch ein herausragender Kenner der Malerei und Bildhauerei gewesen ist. Dementsprechend erfordert dieser Text, wenn er heute angemessen verstanden werden will, auch eine doppelte Kompetenz: Er bedarf der Zusammenarbeit eines Philologen und eines Archäologen. Der Münchner Gräzist Oliver Primavesi (Fellow 2005/06) und ich arbeiten an einer Neuübersetzung des vielfach missverstandenen Werkes, die zugleich auch mit einem philologisch-archäologischen Kommentar versehen werden soll: ein ausgesprochen langfristiges Projekt.

Lektüreprüfung

Primavesi, Oliver und Luca Giuliani. „Bild und Rede: Zum Proömium der Eikones des zweiten Philostrat.“ *Poetica* 44 (2012): 25–79.

Giuliani, Luca. „Die unmöglichen Bilder des Philostrat: Ein antiker Beitrag zur Paragone-Debatte?“ *Pegasos* 8 (2006): 91–116.

ECKART GOEBEL

Dr. phil., Professor der Germanistik
New York University

Geboren 1966 in Herford (Westfalen)

Studium der Allgemeinen und Vergleichenden Literaturwissenschaft,
Philosophie und Germanistik an der Freien Universität Berlin und
der Germanistik am St. Hugh's College, Oxford

GOETHE'S PSYCHOLOGISCHES WISSEN

Ich plane, ein Buch zu schreiben, das Goethes psychologisches Wissen erschließt und darstellt. Goethe entwickelt, so meine Hypothese, die Psychologie des Menschen aus der ursprünglichen Einsicht in dessen Getrenntheit von der Natur, die sich exemplarisch an der Unnatürlichkeit der Passion zeigt, deren Analyse sich zahlreiche seiner Werke vom *Werther* bis zur *Trilogie der Leidenschaft* widmen. Goethes andauernde Beschäftigung mit der „Natur“ erscheint aus dieser Perspektive als Versuch, die Konturen menschlicher Existenz in ihrer Fremdheit sichtbar zu machen.

Mein Projekt soll Goethe mit seiner umfangreichen Forschung nicht nur als Analytiker, etwa des suizidalen Dilettanten, des neurotischen Hofkünstlers, des alternden Gelehrten, oder als Psychologen der Ehe präsentieren, sondern auch Werkkomplexe wie Gespräche und Briefe auf das darin dokumentierte psychologische Wissen hin untersuchen. Hans Blumenbergs Beobachtung des Goethe'schen „Takts“, der sich in diplomatischen Konstellationen sowie in der Verwaltung der eigenen öffentlichen Person und ihres Ruhms zeigt, soll weiter ausgearbeitet werden. Neben die Erfahrung von Fremdheit tritt die Erfahrung tiefer Einsamkeit, deren Phänomenologie Goethe eindringlich niedergelegt hat.

Meine Untersuchung zur „Gefühlsklugheit“ nähert sich Goethe historisch, und zwar aus zwei Richtungen. Sie reflektiert einerseits seine Auseinandersetzung mit der europäischen Renaissance, andererseits blickt sie aus psychoanalytischer Sicht auf ihn und seinen Einfluss zurück. Die bisherige Arbeit an

meinem Projekt führte mich dazu, „klassische“ Abhandlungen zum „Individuum“ in der Renaissance – die Bücher Jacob Burckhardts, Walter Paters und Ernst Cassirers etwa – als Werke zu lesen, die inhaltlich wie methodologisch ohne Goethe nicht wirklich nachvollziehbar sind. Über diese folgenreichen Abhandlungen zur Renaissance, so meine These, findet Goethes psychologisches Wissen indirekt Eingang in die ästhetische Theorie und die Psychologie von Moderne und Gegenwart.

Lektüreempfehlung

Goebel, Eckart und Sigrig Weigel (Hg.). *„Escape to Life“: German Intellectuals in New York: a Compendium on Exile after 1933*. Berlin und Boston: de Gruyter, 2012.

Goebel, Eckart. *Jenseits des Unbehagens: „Sublimierung“ von Goethe bis Lacan*. Bielefeld: Transcript, 2009.

—. *Charis und Charisma: Grazie und Gewalt von Winckelmann bis Heidegger*. Berlin: Kadmos, 2006.

STEPHEN GREENBLATT

Permanent Fellow of the Wissenschaftskolleg
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Harvard University

Born in 1943 in Cambridge, Massachusetts
Studied English Literature at Yale University
and at Cambridge University

THE RISE AND FALL OF ADAM AND EVE

I am writing a book about the rise and fall of Adam and Eve, perhaps the greatest story ever told, or at least the story with the most far-reaching consequences. The account of the first man and the first woman – central to all three of the world’s monotheistic religions and the object of innumerable representations by painters, sculptors, and poets – was for thousands of years the dominant origin story of the human race. And, though we know it from Genesis, Adam and Eve’s fate cannot be understood only as a piece of religious ideology. Much older than Christianity and Islam and older even than any recognizable form of Judaism, it helped innumerable generations to explain to themselves who they were, where they came from, and why they were forced to work, bear children in pain, and suffer death.

That its credibility has collapsed in the modern age makes it possible – as it would not have been in the past – to understand it as an act of inspired storytelling, whose apogee came in the High Renaissance, and possible too to consider what it means to shift uncertainly, as we have done, toward a different story. To probe our relation to our own origins – our ways of imagining the *Australopithecus afarensis* “Lucy”, our understanding of our genetic inheritance, our intimation of the secret links that tie us to our primate ancestors – is to grapple with what it means to live now, on the other side of the great myth that once told us who we were.

Recommended Reading

Greenblatt, Stephen, with Ines G. Županov, Reinhart Meyer-Kalkus, Heike Paul, Pál Nyíri, and Friederike Pannewick. *Cultural Mobility: A Manifesto*. Cambridge, Mass.: Cambridge University Press, 2009.

Greenblatt, Stephen. *The Swerve: How the World Became Modern*. New York: W. W. Norton, 2011.

—. *Shakespeare: Freiheit, Schönheit und die Grenzen des Hasses*. Frankfurt/Main: Suhrkamp, 2007.

—. *Will in the World: How Shakespeare Became Shakespeare*. New York: W. W. Norton, 2004.

DIETER GRIMM

Permanent Fellow des Wissenschaftskollegs

Rektor des Wissenschaftskollegs (2001–2007)

Dr. Dr. h.c. mult., LL.M. (Harvard), Professor (em.) des Öffentlichen Rechts

Humboldt-Universität zu Berlin,

Bundesverfassungsrichter a. D.

Geboren 1937 in Kassel

Studium der Rechtswissenschaft und Politikwissenschaft in Frankfurt/Main,

Freiburg/Breisgau, Berlin, Paris und Harvard

VERFASSUNG UND VERFASSUNGSGERICHTSBARKEIT

Mehrere hundert Jahre lang war öffentliche Gewalt identisch mit Staatsgewalt. Dementsprechend entstand die Verfassung, die die öffentliche Gewalt organisiert, legitimiert und limitiert, als Staatsverfassung. Die Identität von öffentlicher Gewalt und Staatsgewalt ist mittlerweile entfallen. Öffentliche Gewalt wird auch jenseits des Staates von supranationalen Organisationen ausgeübt. Die Staatsverfassung erfasst daher die auf dem Territorium des Staates wirkende öffentliche Gewalt nur noch teilweise. Äußerlich seit der säkularen Wende von 1989/90 auf ihrem Höhepunkt angekommen, ist die Verfassung innerlich einer Erosion ausgesetzt. Zentrale Begriffe und Funktionen der Verfassung müssen daher neu definiert werden. Zugleich stellt sich die Frage nach der Legitimierung und Limitierung derjenigen öffentlichen Gewalt, die von supranationalen Organisationen ausgeübt wird. Ist sie ebenfalls nach Art der Verfassung regulierbar oder müssen in Bezug auf sie neue Formen rechtlicher Begründung und Begrenzung entwickelt werden? Darüber besteht alles andere als Klarheit. Auch insoweit gibt es also Klärungsbedarf, ebenso wie hinsichtlich des Verhältnisses von traditioneller Staatsverfassung und neuartigen Regulierungen der nicht staatlichen öffentlichen Gewalt.

Zugleich mit der weltweiten Verbreitung der Verfassung hat sich in der zweiten Hälfte des 20. Jahrhunderts auch die Verfassungsgerichtsbarkeit als Mittel zur Gewährleistung der Verfassung gegenüber der Politik weltweit

durchgesetzt. Verfassungsgerichtsbarkeit ist heute ein integraler Bestandteil des Konstitutionalismus. Beide müssen zusammen gesehen werden. Über Erfolgsbedingungen der Verfassungsgerichtsbarkeit ist allerdings noch wenig bekannt. Auch ihre Bewertung differiert stark. Während sie in den USA vornehmlich unter dem Gesichtspunkt der Bedrohung von Demokratie diskutiert wird, gilt sie in den jüngeren Demokratien als Garant von Demokratie. Zudem ist mit der Internationalisierung öffentlicher Gewalt auch ein Anteil der Verfassungsgerichtsbarkeit auf internationale Gerichte übergegangen. Im Unterschied zu nationalen Gerichten operieren sie jedoch unter anderen Bedingungen und in einem anderen Kontext. Ihre Einbindung in einen kontinuierlichen Diskussionszusammenhang und ihre Rückkopplung an die Gemeinschaft, für die sie Recht sprechen, ist wesentlich geringer als bei staatlichen Gerichten. Welche Folgen hat das für die Ausübung der richterlichen Funktion auf supranationaler Ebene?

Die Antworten auf diese Fragen verlangen eine vergleichende Verfassungslehre, die aber erst in ihren Anfängen steht. Darum geht es mir bei den Forschungen am Wissenschaftskolleg.

Lektüreempfehlung

Grimm, Dieter. „The Achievement of Constitutionalism and its Prospect in a Changed World.“ In *The Twilight of Constitutionalism?* Herausgegeben von Petra Dobner and Martin Loughlin, 3–22. Oxford: Oxford University Press, 2010.

—. *Souveränität*. Berlin: Berlin University Press, 2009.

—. *Die Zukunft der Verfassung*. Frankfurt/Main: Suhrkamp, 3. Aufl., 2002.

—. *Die Verfassung und die Politik*. München: C. H. Beck, 2001.

—. „Braucht Europa eine Verfassung?“ *Juristenzeitung* (1995): 581.

URSZULA HIBNER

November 2013 and from April to June 2014

Ph.D., Cancer Biology

Institut de Génétique Moléculaire de Montpellier

Born in 1952 in Warsaw

Studied Biology at the University of York

WHY DO VIRUSES CAUSE CANCER? AN EVOLUTIONARY PERSPECTIVE

Focus Group *Cancer Evolution* (see p. 130)

My project at the Wissenschaftskolleg zu Berlin is part of a common endeavour of a group led by Michael Hochberg that will work on the evolutionary aspects of cancer biology. My personal contribution will provide insights derived from my knowledge of the impact of the hepatitis C virus on its host cell, notably in the context of cancer initiation and progression. I plan to concentrate on issues of cellular cooperation versus competition between infected and healthy cells in the course of tumorigenesis.

Tumours can be considered complex, albeit misshapen, organs that can thrive only through extensive exchanges between tumoural and healthy cells as well as their complex stromal environment. These interactions can be analysed in the light of principles of Darwinian evolution operating through the short time of a human lifespan and the duration of the disease.

On another level, a non-negligible fraction of tumours is associated with microbial infections. This is notably true for primary liver cancer, in which close to 80% of all tumours occur against the background of viral hepatitis. It is fascinating to consider the long-term evolutionary forces that steer the physiopathology of an infectious disease into what, from the microbe's point of view, could be considered an undesirable side effect: a cancerous transformation.

My general aim is to put the question of interactions between cancer cells and their cellular and stromal surroundings into the light of the evolution of host-pathogen interactions. I shall analyse data from my own laboratory, confront them with available literature and collaborate on formal representation of the results. This research project should culminate in writing a paper on the subject.

Recommended Reading

Simonin, Y., S. Vegna, L. Akkari, D. Grégoire, E. Antoine, J. Piette, N. Floc'h, P. Lassus, G.-Y. Yu, A. R. Rosenberg et al. (2013). "Lymphotoxin signaling is initiated by the viral polymerase in HCV-linked tumorigenesis." *PLoS Pathogens* 9, e1003234.

Lassus, P., M. Ferlin, J. Piette, and U. Hibner (1996). "Anti-apoptotic activity of low levels of wild-type p53." *EMBO J* 15, 4566–4573.

Hibner, U. and B. M. Alberts (1980). "Fidelity of DNA replication catalysed in vitro on a natural DNA template by the T4 bacteriophage multi-enzyme complex." *Nature* 285, 300–305.

ANDREW HIGGINSON

from January to April 2014

Fellow of the College for Life Sciences (see p. 135)

Ph.D., Biology, Theoretical Ecology

University of Bristol

Born in 1979 in Manchester, UK

Studied Behavioural Science and Behavioural Ecology at the

University of Nottingham

A UNIFIED THEORY OF INDIVIDUAL VARIATION IN COLLECTIVE BEHAVIOUR

The natural world abounds with animals associating with others of their species in groups, which can be as transient as flocks of birds, as persistent as the perennial colonies of ants, or intermediate, such as people engaged in business enterprise. The behaviour of individuals cooperating in groups combines to form the collective behaviour of the group. Evidence is accumulating that, even when the group members appear similar, as with honeybees, individuals are highly variable. For example, honeybees vary in their readiness to perform different tasks. It is clear that such variation must be useful, otherwise natural selection should have eliminated it. Variation enables some individuals to be specialists at particular tasks, either because they develop the morphology (e.g. the jaws of soldier ants) or become highly skilled (e.g. the flower handling of foraging bees). However, too much specialisation would reduce group flexibility, so that if conditions change the group may perform certain tasks poorly. In this project, I will review the characteristics of animal groups to elucidate the ecological factors that influence the extent of specialisation. I will then construct mathematical models to make predictions about how individual variation will be affected by factors such as task number, environmental changeability, group size and relatedness amongst group members. These models will also predict how specialisation happens, such as in the morphology of bodies or in the development of

behaviour. This body of theory will unite currently separate studies of persistent groups of related individual (e.g. army ants), on the one hand, with transient groups of unrelated individuals (e.g. foraging fish), on the other. By synthesizing mechanistic and functional approaches to understanding individual variation in collective behaviour, this work will have implications for the design of artificial systems and for business enterprises.

Recommended Reading

Higginson, A. D., T. W. Fawcett, P. C. Trimmer, J. M. McNamara, and A. I. Houston (2012). “Generalized optimal risk allocation: foraging and anti-predator behavior in a fluctuating environment.” *Am Nat* 180: 589–603.

Daly, D., A. D. Higginson, C. Dong, G. D. Ruxton, and M. P. Speed (2012). “Density-dependent investment in costly antipredator defences: an explanation for the weak survival benefit of group living.” *Ecol Lett* 15: 576–583.

Higginson, A. D. and G. D. Ruxton (2010). “Adaptive changes in size and age at metamorphosis can qualitatively vary with predator type and available defensive responses.” *Ecology* 91: 2756–2768.

MICHAEL E. HOCHBERG

Ph.D., Directeur de recherche, Social and Biological Evolution
Université Montpellier 2 – CNRS

Born in 1960 in Los Angeles

Studied Population Ecology and Entomology at the University of California,
Berkeley, and Population Biology at the University of London

EVOLUTIONARY APPROACHES TO UNDERSTANDING CANCER PROGRESSION AND OPTIMIZING THERAPIES

Focus Group *Cancer Evolution* (see p. 130)

Somatic cellular selection and evolution are the fundamental processes leading to malignancy, metastasis and resistance to therapies, with the contribution of cancer stem cells as the progenitors of these more differentiated cell types. A complication is the tremendous plasticity of cells, and more specifically cancer cells, that allows them to acquire stem cell characteristics through deregulated expression of just a few genes. Tumors can be viewed as collections of individuals (cells) that accumulate genetic and epigenetic changes and, through their interactions with the surrounding environment, adaptively evolve. Examples include stressful microenvironments affecting the evolution of invasive malignancies and the evolution of resistance to toxicity during tumor growth, providing a competitive advantage over healthy cells. My proposal for study at Wiko is the development of theoretical models of (1) how alteration of microenvironments can lead to cancer “breaking out” from controlled growth characteristic of healthy multicellular organisms and (2) how evolutionary and demographic knowledge could be used to optimize anti-cancer therapies. The first of these topics will be addressed by modifying mathematical models of cultural and technological innovations, to represent cell phenotypes and their microenvironments. The second topic will involve employing optimization approaches to managing rather than eradicating precancerous lesions and detected cancers.

Both of these themes will be addressed by the Focus Group on the topic of cancer evolution.

Recommended Reading

Hochberg, M. E., F. Thomas, E. Assenat, and U. Hibner (2013). “Preventive Evolutionary Medicine of Cancers.” *Evolutionary Applications* 6: 134–143.

Roche, B., M. E. Hochberg, A. F. Caulin, C. C. Maley, R. A. Gatenby, D. Missé, and F. Thomas (2012). “Natural resistance to cancers: a Darwinian hypothesis to explain Peto’s paradox.” *BMC Cancer* 12: 387.

Thomas, F. et al. (2012). “Applying ecological and evolutionary theory to cancer: a long and winding road.” *Evolutionary Applications* 6: 1–10.

GUNTHER JANSEN

from September to December 2013

Fellow of the College for Life Sciences (see p. 135)

Ph.D., Biology

Universität Kiel

Born in 1982 in Lommel, Belgium

Studied Biosciences at the University of Helsinki, and Logic, History,

Philosophy of Science, and Biology at the University of Ghent

THE EVOLUTIONARY FUNDAMENT OF EMERGENT INFECTIOUS DISEASE: HOW DISEASES SHAPE SOCIETY

The advances of modern medicine have lulled mankind into the belief that the threats of infectious disease have now been minimized. Although the 20th century was the age of antibiotic victory, it has also witnessed the emergence or reemergence of novel, devastating pandemics. Emerging pathogens not only threaten public health, but also cause costly mass mortality in livestock (Nipah virus infecting pigs), crops (mosaic viruses in tomatoes), and wild populations (chytridiomycosis may drive a third of the world's amphibians into extinction). Although epidemiological and phylodynamic models have been pivotal in describing and understanding outbreaks, the underlying processes remain poorly understood. I intend to develop a theory of functional epidemiology in which epidemiological modeling, the evolutionary history of pathogens, and adaptive dynamics within hosts are combined to provide a holistic view of the evolution of infectious diseases. I will review key features of emergent diseases obtained from comparisons of zoonotic diseases and their ancestral strains in the reservoir. To gain insights into the long-term evolution of diseases, I will explore the abundant information on disease dynamics hidden in the visual arts, literature, and history. Finally, I will attempt to place infectious diseases within an ethical framework. I will focus on questions such as: What is the rationale behind current treatment practice, and is it compatible with the stance of

current science? What are the ethical implications of vaccination programs and the trend to reject them? Is it ethically sound to refrain from treatment to prevent the spread of resistance at the cost of prolonging illness? What are the consequences of domestication and agriculture, knowing that the concentration of identical genotypes may facilitate disease emergence?

Recommended Reading

Peña-Miller, R., D. Laehnemann, G. Jansen, A. Fuentes-Hernandez, P. Rosentiel, H. Schulenburg, and R. Beardmore (2013). “When the most potent combinations of antibiotics select for the greatest bacterial load: the smile-frown transition.” *PLoS Biol* 11: e1001540.

Masri, L., R. D. Schulte, N. Timmermeyer, S. Thanisch, L. L. C. Crummenerl, G. Jansen, N. C. Michiels, and H. Schulenburg (2013). “Sex differences in host defence interfere with parasite-mediated selection for outcrossing during host-parasite coevolution.” *Ecol Lett* 16: 461–466.

BABER JOHANSEN

from September to December 2013

Ph.D., Professor for Islamic Religious Studies

Harvard University

Born in 1936 in Berlin

Studied Islamic Studies, Sociology and Law at the Freie Universität Berlin

A MUSLIM DEBATE ON HUMAN NATURE

Muslim grammarians and theologians discuss – from the 9th century on – whether God instituted human language or whether humans had to develop their own language in order to be able to receive God’s revelation. The first position underlines God’s authority over thought and language, the second one defends human creativity. This debate continued for many centuries, establishing a licit framework for the recognition of humans’ capacity to shape their history.

Ibn‘Aqil (d. 1119) – the leading Hanbali scholar in Baghdad – transferred this debate into the analysis of law and history. He accepted God’s role in instituting human language but pointed out that words get their meaning in communication between speakers who share common experiences. Communication – being the essential purpose of language and the *conditio sine qua non* for human cooperation – is necessary for human survival. As this cooperation constantly produces new tools, new forms of goods, new forms of their use, new forms of urban life, of music and esthetics, and new legal norms for life in a changing environment, the historical process has to be understood as a constant process of innovation (*tajdid*). Language has to express the innovations brought about by the historical process, and words acquire multiple meanings based on experiences in a changing human environment. Communication requires new levels of abstraction, such as metaphors. The human development driven by need constantly brings about the coinage of new words and the assignment of new meanings to old expressions. Therefore – Ibn ‘Aqil concludes – speculative

reasoning (*nazar*) is a legal obligation for those capable of it whenever they face situations brought about by the process of innovation that cannot satisfactorily be resolved within the available forms of knowledge. A religiously justified notion of progress is clearly implied in Ibn‘Aqil’s reasoning.

During my stay at the Wissenschaftskolleg I intend to translate the most important texts of Ibn ‘Aqil on these questions and to establish the intellectual genealogy through which elements of Classical Antiquity’s discussion of human nature (e.g. Aristotle and Cicero on Natural Law) were integrated in and adapted to the Muslim debate. The results will be part of a book on human nature and innovation in Islamic Law that I hope to finish during my sabbatical year (2013–14).

Recommended Reading

Johansen, Baber. *The Changing Limits of Contingency in the History of Muslim Law*. The Nehemia Levtzion Center for Islamic Studies, The Hebrew University of Jerusalem, 2013.

—. Introduction: “The Muslim Fiqh as a Sacred Law: Religion, Law and Ethics in a Normative System.” In *Contingency in a Sacred Law: Legal and Ethical Norms in the Muslim Fiqh*. Leiden: Brill, 1999, 1–77. (Studies in Islamic Law and Society 7.)

—. “Wahrheit und Geltungsanspruch: zur Begründung und Begrenzung der Autorität des Qadi-Urteils im islamischen Recht.” *La giustizia nell’Alto Medioevo (secoli IX–XI)*. Spoleto: Centro Italiano di Studi sull’Alto Medioevo, 1997, 975–1074 [English translation available on request].

GEBHARD KIRCHGÄSSNER

Dr. Dr. h.c., Professor (em.) für Volkswirtschaftslehre und Ökonometrie
Schweizerisches Institut für Aussenwirtschaft und Angewandte
Wirtschaftsforschung an der Universität St. Gallen

Geboren 1948 in Konstanz

Studium der Volkswirtschaftslehre, Politikwissenschaft und Statistik an der
Universität Konstanz

POLITISCHE ÖKONOMIE WISSENSCHAFTLICHER POLITIKBERATUNG

Das traditionelle Verständnis vom Verhältnis zwischen Wissenschaft und Politik ist naiv. Es geht von Idealbildern von Politikern wie Wissenschaftlern aus, die in der Realität nicht gegeben sind. Von der Politik wird erwartet, dass sie das Gemeinwohl fördert, und von der Wissenschaft, dass sie die Politik dabei mit objektiven Informationen unterstützt. Von Politikern wie Wissenschaftlern wird somit ein hehres Bild gezeichnet, welches im Allgemeinen der Wirklichkeit nicht entspricht. Es gibt *a priori* keinen Grund anzunehmen, dass sich Politiker und Wissenschaftler grundsätzlich anders als andere Menschen verhalten.

In diesem Projekt wird das ökonomische Verhaltensmodell – im Gegensatz zum traditionellen Ansatz – konsequent zur Erklärung des Verhaltens aller Akteure im politischen Beratungsprozess angewendet: Interessengruppen (Wirtschaftssubjekte), Politiker und Wissenschaftler. Alle Beteiligten verfolgen ihre eigenen Interessen, handeln aber unter ganz unterschiedlichen Bedingungen. Dabei geht es insbesondere um Antworten auf folgende Fragen: 1. Weshalb können verschiedene Wissenschaftler bei ihren (wirtschafts-)politischen Empfehlungen zu ganz unterschiedlichen Vorschlägen kommen? 2. Warum wird derartige Beratung nachgefragt, wenn die (widersprüchlichen) Ergebnisse absehbar sind? 3. Wie sollte man den Prozess der wissenschaftlichen Politikberatung organisieren, damit er zur Verbesserung der Politik beitragen kann?

Es geht somit darum, die wirtschaftspolitischen Beratungsprozesse und ihre Ergebnisse unter der Annahme zu analysieren, dass hier rationale Individuen agieren, die im Wesentlichen ihre eigenen Interessen verfolgen, d. h. die weder moralisch weit über den übrigen Bürgerinnen und Bürgern stehen noch – z. B. dann, wenn sie Gutachten für Interessengruppen verfassen und damit deren politische Projekte unterstützen – notwendigerweise korrupt sind, obwohl auch bei ihnen beides – wie im Rest der Bevölkerung – gelegentlich vorkommt.

Lektüreempfehlung

Kirchgässner, Gebhard. *Homo Oeconomicus: Das ökonomische Modell individuellen Verhaltens und seine Anwendung in den Wirtschafts- und Sozialwissenschaften*. Tübingen: Mohr Siebeck, 1991; 3. Aufl. 2008. Englische Ausgabe: New York et al.: Springer, 2008.

Kirchgässner, Gebhard, L. P. Feld und M. R. Savioz. *Die direkte Demokratie: Modern, erfolgreich, entwicklungs- und exportfähig*. Basel und München: Helbing und Lichtenhahn/Vahlen, 1999.

Kirchgässner, Gebhard. „Zur Rolle der Ökonometrie in der wissenschaftlichen Politikberatung.“ Erscheint in: *Perspektiven der Wirtschaftspolitik* 14 (2013). (Universität St. Gallen, Department of Economics, Working Paper No. 2012–23, November 2012.)
<http://www1.vwa.unisg.ch/RePEc/usg/econwp/EWP-1223.pdf>

HANNA KOKKO

from May to July 2014

Ph.D., Professor of Evolutionary Ecology
Australian National University, Canberra

Born in 1971 in Helsinki

Studied Systems Analysis at Helsinki University of Technology and
Evolutionary Ecology at the University of Helsinki

IS MOTHER NATURE SHORTSIGHTED? CONFLICT AND THE FAILURE TO MAXIMIZE GROUP-LEVEL PERFORMANCE IN BIOLOGICAL EVOLUTION

Focus Group *Cancer Evolution* (see p. 130)

It may come as quite a surprise that biological evolution can create organisms that do not appear to maximize fitness, that fail to solve problems set by the environment, or that act in ways that are detrimental to the performance of their populations. Yet all these characteristics are, in fact, predicted by evolutionary theory. Natural selection can definitely produce traits that appear to give organisms “foresight” – e.g., young migratory birds leaving their natal territories to fly south long before the first snow falls – but there are also mechanisms that guarantee that populations cannot be expected to always find solutions that appear “wise” from the outside.

One of the most fundamental reasons for such outcomes is *conflict*. Biological life is organized into several levels: one individual is the developmental result of many genes and their interactions; one population consists of numerous individuals; one species of several populations. It is a common mistake in fields – from economics to medicine – that remain relatively uninformed about evolutionary theory to assume that the “interests” of entities on different levels of organization are aligned (Trivers 2011). Naively, one might expect more efficient systems to win and prevail, but evolutionary biology (and game theory) can demonstrate

that when the interests of two or more individuals do not coincide, the outcome can be suboptimal for the group (Rankin et al. 2007). A particularly common reason for conflict is that individuals come in two categories: male and female. I will study the mathematical conditions predicting exactly when such suboptimality is expected to be severe – or mild.

Recommended Reading

Kokko, H. and K. U. Heibel (2011). “Prudent males, group adaptation, and the tragedy of the commons.” *Oikos* 120: 641–656.

— (2013). “Conflict and Restraint in Animal Species: Implications for War and Peace.” In *War, peace, and human nature: the convergence of evolutionary and cultural views*, edited by Douglas P. Fry, 38–53. New York: Oxford University Press.

— (in press). “How wise is Mother Nature? Maximization, optimization and short-sighted resource use in biological evolution.” In *Human happiness and the pursuit of maximization: is more always better?* Edited by Hilke Brockmann and Jan Delhey. Berlin: Springer. (Happiness Studies Book Series.)

TONG LAM
Ph.D., Associated Professor of History
University of Toronto

Born in 1967 in Macao
Studied History at the University of Chicago

THE QING EMPIRE STRIKES BACK: FRONTIER
RECOLONIZATION, STATE TRANSFORMATION,
AND IMPERIAL NOSTALGIA

Focus Group *Quantification* (see p. 134)

This research project uses the transformation of the Qing Empire (1644–1912) in its final decades to rethink the pressing questions of modern empire and contemporary Chinese nationalism. Empirically, this project seeks to unearth and analyze the neglected and still poorly understood historical materials associated with the late Qing’s frontier management and state transformation. These materials include: a) the Qing’s rapidly changing frontier policies, as well as technologies of territorial and population management; b) the new frontier infrastructures such as mines, railway, banks, and agricultural programs that were being proposed or under development; c) the emerging discourse shared by many Qing bureaucrats and frontier commanders on the necessity of remaking the Qing into a modern empire with centralized power for the new global order. Conceptually, by using these understudied materials to highlight the late Qing’s empire-building efforts, this project complicates our conventional understanding of modern colonialism and imperialism, which tends to see European empire as the norm and Japan – supposedly Asia’s only modern empire – as nothing but a mimic of the former. On the contrary, this study argues that there was a pattern of modern colonial projects in Asia that was informed by the West but also shaped by indigenous sources, history, and regional rivalries. As well,

this project further examines the complex phenomenon of Qing nostalgia in contemporary China.

Recommended Reading

Lam, Tong. *A Passion for Facts: Social Surveys and the Construction of the Chinese Nation State, 1900–1949*. Berkeley: University of California Press, 2011.

JOHN H. LANGBEIN

from January to July 2014

Ph.D., Sterling Professor of Law and Legal History

Yale Law School

Born in 1941 in Washington, DC

Studied Economics at Columbia University, Law at Harvard University, and

Law and Legal History at the University of Cambridge

THE TREND TOWARD NEGOTIATED, NON-TRIAL
DISPOSITION OF CRIMINAL CASES IN ADVANCED
LEGAL SYSTEMS, WITH PARTICULAR REFERENCE
TO STPO § 257(C) IN GERMANY

In recent decades, the criminal justice systems of many advanced legal systems have shown a pronounced trend to resolve ever more cases by means of negotiation and settlement rather than by adjudication. The troubled practice of plea bargaining in the Anglo-American systems is the most characteristic example. The German legal system long resisted, but has changed course and now makes use of such practices. During my stay at the Wissenschaftskolleg, I want to study the spread of negotiated, non-trial criminal procedure to Germany. I plan to explore conventional printed sources and also to do some interviewing of criminal justice professionals and scholars.

Recommended Reading

Langbein, John H. *Prosecuting Crime in the Renaissance: England, Germany, France*. Cambridge, Mass.: Harvard University Press, 1974; reprint ed. 2005; Korean ed. 2012.

—. *The Origins of Adversary Criminal Trial*. Oxford: Oxford University Press, 2003; paperback 2005; Chinese ed. 2010.

Langbein, John H. with R. Lerner and B. P. Smith. *History of the Common Law: The Development of Anglo-American Legal Institutions*. New York: Wolters Kluwer, 2009.

WOLF LEPENIES

Permanent Fellow (em.) des Wissenschaftskollegs
Rektor des Wissenschaftskollegs (1986–2001)
Dr. Dr. h. c., Professor (em.) der Soziologie
Freie Universität Berlin

Geboren 1941 in Deuthen, Allenstein, heute Polen
Studium der Philosophie und Publizistik
in München, Münster und Berlin

DER EUROPÄISCHE HIMMELSRICHTUNGSSTREIT

Ich arbeite an einem buchlangen Essay, in dem der (fast beendete) europäische Ost-West-Konflikt mit dem (sich noch verschärfenden) Nord-Süd-Konflikt in Verbindung gebracht wird. Das Mittelmeer und die auf das Mittelmeer gerichtete Politik Frankreichs spielen dabei eine zentrale Rolle.

Lektüreprüfung

Lepenies, Wolf. *Qu'est-ce qu'un intellectuel européen? Les intellectuels et la politique de l'esprit dans l'histoire européenne*. Paris: Editions du Seuil, 2007.

MICHELE LOPORCARO

Dr. phil., Professor of Romance Linguistics with a particular focus
on Historical Linguistics
Universität Zürich

Born in 1963 in Rome

Studied Historical and General Linguistics and Roman Philology at
the Università di Pisa, the Scuola Normale Superiore di Pisa and the
Universität Wien

LATIN-ROMANCE GENDER IN TYPOLOGICAL PERSPECTIVE

Everybody knows that languages like Spanish, French and Italian have two grammatical genders, contrasting e.g. Sp. *el chico* vs. *la chica* “the boy/the girl”, while it is uncontroversial that their common ancestor, Latin, had three genders, with a neuter alongside masculine and feminine. Obviously, things have changed here, and my project aims at providing a book-length account of how this may have happened and of what this can tell us for general linguistic theory.

A key point to this account is a comprehensive analysis of how gender works in lesser-known non-standard dialects, which hold many surprises in store for those who only know the major standard languages. To mention just three examples, there are a) dialects in which “wives” are masculine; b) dialects in which “husbands” are neuter, like, say, “eggs” or “knees”, contrasting with masculine “dogs” and feminine “hands”; and c) dialects in which “rabbits” are assigned different genders depending on whether they are dead or alive.

This sort of data is crucial for both synchronic analysis and diachronic reconstruction. Synchronically, while it is true that grammatical gender (also) serves the function of helping speakers to organize the world (i.e. to classify the referents of the linguistic signs they employ in communication: say, male vs. female animate beings), evidence such as (a)-(b) defies any description in terms of world

taxonomies, semantic plausibility etc., and calls for an account in terms of formal properties of the (classes of) words involved.

As for diachrony, evidence from systems such as (b)-(c) proves instrumental for reconstructing what happened to the Latin neuter: one of the unexpected results of this novel reconstruction is that the Romance language family must have gone through a transitional four-gender stage, not too different from gender systems observed in “exotic” languages such as, say, Burushaski (a language isolate spoken in the Karakoram region in Pakistan) or Worora (a non-Pama-Nyungan language of North-Western Australia).

Recommended Reading

Formentin, Vittorio and Michele Loporcaro. “Sul quarto genere grammaticale del romanesco antico.” [On the fourth grammatical gender of Old Romanesco]. *Lingua e Stile* 47, 2 (2013): 221–264.

Loporcaro, Michele and Tania Paciaroni. “Four-Gender Systems in Indo-European.” *Folia Linguistica* 45 (2011): 389–433.

Loporcaro, Michele. “Syncretism and Neutralization in the Marking of Romance Object Agreement.” In *Morphological Autonomy: Perspectives from Romance Inflectional Morphology*, edited by Martin Maiden, John Charles Smith, Maria Goldbach, and Marc-Olivier Hinzelin, 327–357. Oxford: Oxford University Press, 2011.

—. “Syncretism and Neutralization in the Marking of Romance Object Agreement.” In *Morphological Autonomy: Perspectives from Romance Inflectional Morphology*, edited by Martin Maiden, John Charles Smith, Maria Goldbach, and Marc-Olivier Hinzelin, 327–357. Oxford: Oxford University Press, 2011.

LAURENZ LÜTTEKEN
Dr. phil., Professor für Musikwissenschaft
Universität Zürich

Geboren 1964 in Essen
Studium der Musikwissenschaft, Germanistik und Kunstgeschichte an den
Universitäten Münster und Heidelberg

1. MOZART – GRUNDZÜGE EINER INTELLEKTUELLEN BIOGRAFIE

2. RICHARD STRAUSS

Zu 1. Ausgehend von umfangreicheren Studien zur Oper *Così fan tutte* ist der Plan entstanden, Mozarts intellektuelle Biografie im Kontext des 18. Jahrhunderts, dem Jahrhundert der Aufklärung, zu rekonstruieren und zu systematisieren. In der Mozart-Forschung ist die Zugehörigkeit des Komponisten zur Denkbewegung der Aufklärung bisher nur zögerlich und eher am Rande thematisiert worden. In einem größeren Vorhaben wird versucht, diese Bezüge nochmals zu sichten, neu zu bewerten und zu ordnen. Dabei soll es nicht allein um sozialhistorische Fragen gehen, also Mozarts Selbstpositionierung im auftragsgebundenen Produktionssystem „Musik“, das auch im späteren 18. Jahrhundert noch unangefochten war. Auch sollen die Bezüge zur Aufklärung nicht allein im Blick auf vertonte Texte untersucht werden. Vielmehr geht es darum, auf dem Wege einer breiten Kontextualisierung, gleichsam einer archäologischen Sondierung der für Mozart bedeutsamen intellektuellen Kraftfelder neue Verständniswege für seine Musik, also für seinen kompositorischen Habitus zu erproben.

Zu 2. Richard Strauss verbrachte 20 Jahre seines Lebens in enger institutioneller Anbindung an Berlin. Dort war er zunächst Leiter der Hofoper, später, als Generalmusikdirektor, auch verantwortlich für die Konzerte der Königlichen

Kapelle – ihm oblag die Programmplanung. In dieser Zeit agierte Strauss außerdem als weltweit bewunderter Opern- und Konzertdirigent. Es entstanden in kaum erklärlicher Dichte eine Reihe seiner wichtigsten Werke. Trotz dieser herausragenden Bedeutung ist die Berliner Zeit bisher nicht systematisch in den Blick genommen worden. In Ergänzung zu einem größeren Projekt zu Richard Strauss (in dessen Zentrum die Neubestimmung seines Verhältnisses zur Moderne steht) sollen die Berliner Quellen ausführlicher untersucht werden.

Lektüreempfehlung

Lütteken, Laurenz. *Musik der Renaissance: Imagination und Wirklichkeit einer kulturellen Praxis*. Kassel: Bärenreiter; Stuttgart u. a.: Metzler, 2011.

—. Richard Strauss. *Opern*. München: Beck, 2013 (im Druck).

CARLO C. MALEY

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University of California, San Francisco

Born in 1969 in USA

Studied Computer Science and Psychology at Oberlin College and MIT, and
Zoology at the University of Oxford

THE EVOLUTIONARY FOUNDATION OF CANCER

Focus Group *Cancer Evolution* (see p. 130)

My plan is to write a graduate-level textbook on Evolution and Cancer. The field of evolution and cancer currently lacks a textbook that summarizes the field and identifies the open questions and promising avenues for research. I have a contract with Oxford University Press to write the book and have developed an extended outline, but have not been able to make much progress on the book during my day-to-day routine at UCSF. The essence of the book is a survey of evolutionary and ecological theory as it applies to cancer. Thus, writing the book will benefit greatly from regular discussions with other evolutionary biologists and ecologists in residence at the Wissenschaftskolleg and specifically from discussions with the Cancer Evolution Focus Group.

In the process of writing the textbook, I propose to develop a vision of which experiments and projects in the evolution of cancer are both feasible and likely to have a large impact on the management of prevention of cancer. This will form the basis of a large collaborative grant proposal to help fund our Center for Evolution and Cancer at UCSF. In particular, I am interested in methods to slow somatic evolution for cancer prevention and to delay, prevent, or target the evolution of therapeutic resistance in malignant neoplasms.

Recommended Reading

Greaves, M. and C. C. Maley (2012). "Clonal evolution in cancer." *Nature* 481: 306–313. doi:10.1038/nature10762

Merlo, L. M., J. W. Pepper, B. J. Reid, and C. C. Maley (2006). "Cancer as an evolutionary and ecological process." *Nat Rev Cancer* 6 : 924–935.

JUDITH MANK

from September to December 2013

Ph.D., Professor of Evolutionary and Comparative Biology

University College London

Born in 1976 in Houston, Texas

Studied Anthropology at the University of Florida and Genetics at the

University of Georgia

SEX CHROMOSOMES AND THE GENETIC BASIS OF SEXUAL DIMORPHISM

Focus Group *Origin and Evolution of Exaggerated Traits* (see p. 132)

In addition to fundamental differences in reproduction, males and females show profound differences in a range of somatic phenotypes, including metabolism, disease incidence, life history, and behavior. These complex phenotypes are encoded by thousands of genes, yet the sexes differ very little in genomic content. To illustrate, X and Z chromosomes in vertebrates generally constitute 5–10% of the coding content of a genome. The sex-limited chromosomes contain even fewer genes, with just 27 unique genes on the mammalian Y chromosome and less than 50 genes on the avian W chromosome.

Because the sex chromosomes are the only region of the genome that differs between females and males, they are thought to be the key to sexual dimorphisms. Clear and strong theoretical predictions link sexually dimorphic phenotypes to the sex chromosomes in a variety of ways. Additionally, the evolutionary study of sex-biased gene expression has recently emerged as a powerful method to understand the genetic basis of complex dimorphisms. This approach has been used to test predictions related to sexual conflict, and gene expression data suggests that the sex chromosomes do indeed play an important role in sexual dimorphism.

This consistent pattern has not been observed in field studies in natural systems seeking to link sexual dimorphisms to sex chromosomes. Although some studies have shown an association, these appear to be the exception, many others have not. Why is there a disconnect between laboratory and molecular studies that show that the sex chromosomes have sex-specific expression that should lead to dimorphism, on the one hand, and phenotypic studies in the field, where the evidence is mixed at best, on the other?

Recommended Reading

Moghadam, H. K., M. A. Pointer, A. E. Wright, S. Berlin, and J. E. Mank (2012). "W chromosome expression responds to female-specific selection." *Proceedings of the National Academy of Sciences, USA* 109: 8207–8211.

Mank, J. E. (2009). "The W, X, Y and Z of sex chromosome dosage compensation." *Trends in Genetics* 25: 226–233.

Mank J. E., D. W. Hall, M. Kirkpatrick, and J. C. Avise (2006). "Sex chromosomes and male ornaments: a comparative evaluation in ray-finned fishes." *Proceedings of the Royal Society of London B* 273: 233–236.

DANIEL MARKOVITS

Ph.D., Guido Calabresi Professor of Law
Yale Law School

Born in 1969 in London

Studied Philosophy at the University of Oxford, Econometrics and
Mathematical Economics at the London School of Economics, and
Mathematics and Law at Yale University

MARKET SOLIDARITY

Lawyers, economists, and even philosophers conventionally understand markets as *allocative* mechanisms. Allocative theories approach markets as technologies for distributing goods among persons in the service of efficient investment, production, and (ultimately) consumption. The allocative view of markets has been perhaps the single most conspicuous achievement of the social sciences over the last century.

The theory of *market solidarity* takes a different approach. The theory elaborates a philosophical and legal sociology of market orderings, cast as freestanding sites of social cohesion.

This theory meets an explanatory demand introduced by the scope of observed social cohesion. Social cohesion depends on centripetal forces to counteract the centrifugal forces associated with private right-reason. These centripetal forces might act along two dimensions. *Vertical* forms of social cohesion involve asymmetric relations of authority and deference. *Horizontal* forms of social cohesion involve symmetric because reciprocal authority relations.

There are good reasons to doubt that vertical solidarity taken alone can explain observed social cohesion. In particular, vertical solidarity is vulnerable wherever there is significant injustice, which is to say everywhere. The theory of market solidarity fills this gap in explanations of social cohesion, elaborating additional centripetal forces that counteract the centrifugal forces of private right-reason.

Market solidarity arises through two main mechanisms. *Price-commensuration* solves the epistemic problem associated with value difference; and *contract-integration* solves the normative problem associated with the authority of the market. Both mechanisms give market solidarity the power to launder injustice. Markets thus sustain social cohesion even after the forms of solidarity associated with politics and the state have run out.

Market solidarity is thus not merely second-best. Rather, interest and commerce achieve what virtue and politics cannot.

Recommended Reading

Markovits, Daniel. *A Modern Legal Ethics: Adversary Advocacy in a Democratic Age*. Princeton, NJ: Princeton University Press, 2008.

Markovits, Daniel with Raymond J. Fisman and Shachar Kariv. "Individual Preferences for Giving." *American Economic Review* 97, 5 (2007): 1858–1876.

Markovits, Daniel. "Contract and Collaboration." *Yale Law Journal* 113, 7 (2004): 1417–1518.

ANDREA MENNICKEN

from January to July 2014

Ph.D., Senior Lecturer in Accounting

London School of Economics and Political Science

Born in 1973 in Aachen

Studied Sociology at the Universität Bielefeld and Accounting and Sociology at the London School of Economics and Political Science

THE QUANTIFICATION OF DECENCY

Focus Group *Quantification* (see p. 134)

In its most general terms, this project is about the quantification of decency. It seeks to contribute to our understanding of the multifaceted relations formed between instruments of quantification, economy and morality, and the roles of rating, ranking and performance measurement in mediating between conflicting values and rationalities. The British prison service has been chosen as the principal research site, as it is here that conflicts between different organizational values and rationalities are particularly pronounced. Throughout the study, however, cross-national comparisons will be drawn, as well as comparisons between the prison service and other public services, such as health and social care, in order to identify general patterns and overarching dynamics. The project examines the Prison Service's "decency agenda", emerging from 1999 onwards, against the background of processes of privatization, actuarialization and managerialization. It traces attempts to develop "quantitative measures of qualitative dimensions of prison life". It unpacks the different values and risks at stake and explores the interactions between different performance measures making up prison ratings, such as measures of decency and cost, operational effectiveness and security, prisoner safety and "individual transformation". The project seeks to contribute to the development of a more nuanced and differentiated understanding of the capacities and roles of the various calculative prac-

tices that populate the socio-economic domain. It seeks to enhance our understanding of the implication of instruments of quantification in shifting modes of power, regulating and governing. It seeks to offer insights into the inner workings of accountability regimes, their changing nature and the emergence of new regulatory spaces and practices. At a more general level, the project aims to add to our understanding of the relationship between economy and morality and the role of accounting instruments in its mediation.

Recommended Reading

Mennicken, Andrea. “‘Too Big to Fail and too Big to Succeed’: Accounting and Privatisation in the Prison Service of England and Wales.” *Financial Accountability and Management* 29, 2 (2013): 206–226.

— “From Inspection to Auditing: Audit and Markets as Linked Ecologies.” *Accounting, Organizations and Society* 35, 3 (2010): 334–359

— “Connecting Worlds: The Translation of International Auditing Standards into Post-Soviet Audit Practice.” *Accounting, Organizations and Society* 33, 4/5 (2008): 384–414.

NATASHA MHATRE

from September 2013 to March 2014

Fellow of the College for Life Sciences (see p. 135)

Ph.D., Biology

University of Bristol

Born in 1979 in Mumbai, India

Studied Life Sciences and Biochemistry at Mumbai University and Biological Sciences and Animal Behaviour at the Indian Institute of Science, Bangalore

1. FINDING THE RECIPROCITY BETWEEN BEING A SENSOR AND BEING A MOTOR

2. HISTORIES: SCIENCE COMMUNICATION THROUGH FICTION

Ad 1. The cells that transduce sound into neuronal signals are unique; they are both sensory and motor. In auditory systems across taxa, sound is captured as vibration and the cells that sense this motion can also move on their own. By combining motility with sensory capabilities, they behave like a unique class of oscillators, called critical oscillators, which can actively amplify and respond to vibration just above thermal noise. My research will be concerned with the evolution, maintenance and elaboration of mechanosensory active sensing. One finds that the structural similarity between cells used for swimming, i.e. moving, and those for mechanical sensing are remarkably similar. Hence, my working hypothesis is that sensing motion and moving were reciprocal and fundamentally inseparable processes in these ciliated swimming cells, which are ancestral in this cell lineage. Simply put, the first cell that moved using a beating cilium inevitably sensed motion. My second hypothesis is that this sense was maintained and elaborated so the presence of other nearby swimming microorganisms could be detected and used to organise cooperative swimming behaviour that was adaptive. In my time in Berlin, I will explore these

hypotheses by developing and designing both the theoretical underpinnings and the appropriate experiments to test these hypotheses.

Ad 2. At the same time, I will be exploring short stories as a mode for communicating science. I intend to complete a series of short stories, each based on a different aspect of snake biology. Each will be told in a different narrative genre, the one most appropriate to the biology being explored. The success of fiction is often judged on the clarity and detail of its imagining. Much science, certainly biology, also depends on appreciating the full complexity of the factors affecting an organism's biology and evolution. Through this series I will be asking whether short stories can truly communicate this part of the scientific process; the process of asking and answering the right questions about a complex subject, while avoiding a simple report of the resolutions of the process.

Recommended Reading

- Mhatre, Natasha, F. Montealegre-Z, R. Balakrishnan, and D. Robert (2012). "Changing resonator geometry to boost sound power decouples size and song frequency in a small insect." *Proceedings of the National Academy of Sciences, USA* 22, May 29. doi:10.1073/pnas.1200192109
- Mhatre, Natasha, M. Bhattacharya, R. Balakrishnan, and D. Robert (2011). "Matching sender and receiver: poikilothermy and frequency tuning in a tree cricket." *Journal of Experimental Biology* 214: 2569–2578.
- Mhatre, Natasha and R. Balakrishnan (2008). "Predicting acoustic orientation in complex real-world environments." *Journal of Experimental Biology* 211: 2779–2785.

TAMÁS MIKLÓS

von September bis Dezember 2013

Dr. habil., Philosophie

Eötvös Loránd Universität, Budapest

Geboren 1955 in Budapest

Studium der Philosophie, Ästhetik und Literatur an der

Eötvös Loránd Universität, Budapest

GESCHICHTSPHILOSOPHISCHE ASPEKTE IM LEBENSWERK VON REINHART KOSELLECK

Wie Christian Meier in seinem Vortrag bei der Gedenkfeier für Reinhart Koselleck im Jahr 2006 in Bielefeld sagte, war Koselleck „kein Geschichtsphilosoph, sondern im Gegenteil einer, der Geschichtsphilosophie mit größter Skepsis betrachtete, gar für gefährlich hielt, der sie sezierte und widerlegte“. Auch sein schärfster Kritiker Jürgen Habermas hat Kosellecks Frühwerk als Ablehnung der Geschichtsphilosophie interpretiert.

Und doch enthält sein gewaltiges Lebenswerk eine Reihe geschichtsphilosophischer Überlegungen von Bedeutung, die ihn in der Diskussionstradition klassischer geschichtsphilosophischer Dilemmas positionieren. Um seine Texte auch geschichtsphilosophisch interpretieren zu können, ist es allerdings notwendig, eine Korrektur des gewohnten Bildes vom Charakter geschichtsphilosophischer Denkweise vorzunehmen. Geschichtsphilosophie ist, nach Kants Worten, keine schöngeistige Schwärmerei, sondern beinhaltet auch Skepsis und weiß um den Preis für das Konzept eines vernunftgerichteten oder -gelenkten Ganges der Geschehnisse. Diese Sichtweise wird auch von anderen klassischen Vertretern im deutschen Idealismus, aber natürlich auch von Rousseau, geteilt. Die Beziehung zwischen Geschichtsphilosophie und Aufklärung, die man nicht mit einem naiven Fortschrittsglauben oder einem Moralprogramm gleichsetzen kann, war eine recht ambivalente.

Nach meiner Lesart war Kosellecks Verhältnis zu geschichtsphilosophischen Fragestellungen nicht rundherum ablehnend, sondern sehr komplex. Seine Haltung veränderte sich mit der Zeit und brachte bemerkenswerte geschichtsphilosophische Überlegungen hervor. Im Rahmen meiner Forschungsarbeit soll dieses Gedankengut untersucht werden.

Lektüreprüfung

Miklós, Tamás. *Hideg démon. Kísérletek a tudás domesztikálására* [Kalter Dämon: Versuche, das Wissen zu domestizieren]. Bratislava: Kalligram, 2011.

—. *József Attila metafizikája* [Die Metaphysik von József Attila]. Budapest: Magvető, 1987.

—. „Isten barátja”: Egy régi szövetség [„Der Freund Gottes“: Ein alter Bund]. In *A hatvan éves Bacsó Béla tiszteletére*. Festschrift. Budapest: Kijárat, 2012.

YAIR MINTZKER

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Princeton University

Born in 1975 in Jerusalem
Studied History at Tel Aviv University and at Stanford University

THE MULTIPLE DEATHS OF “JEW SÜSS”: FEBRUARY 4, 1738

“The Multiple Deaths of ‘Jew Süß’” is a new history of the trial and execution of Joseph Süß Oppenheimer (also known as “Jew Süß”). Oppenheimer was a Court Jew in 18th-century Württemberg who was arrested, put on trial, and finally executed in Stuttgart on February 4, 1738. Despite the importance of Oppenheimer’s biography – the subject of several historical works, of Lion Feuchtwanger’s seminal novel “Jew Süß” (1925), and of German director Veit Harlan’s horrific Nazi propaganda film (1940) – a full, modern account of his actual trial and its many contradictions is yet to be written.

As opposed to the impression given by practically all historians of this infamous case, Oppenheimer’s story is far from being completely understood. The sheer quantity of documents left from the trial (30,000 handwritten pages in Stuttgart alone) and their often contradictory nature, but also the many gaps they show, do not allow – and probably will never allow – for a complete and final scholarly verdict in this case. Particularly since the early 19th century, when questions about Jewish emancipation, assimilation, and acculturation came to the fore in Germany, the story of Jew Süß also acquired the status of a literary battleground on which different conceptions about the past, present, and future of German Jews were encoded and contested. Writing about Joseph Süß Oppenheimer has consequently never been a neutral act, the claims of previous historians notwithstanding.

“The Multiple Deaths of ‘Jew Süß’” takes a radically different approach from earlier histories. Rather than impose one version of the events on the reader, the

book is constructed as a series of Rashomon-like narratives. It presents and explores four very different versions of the events of 1737–38, based on the life stories and actual descriptions written by four of Oppenheimer’s contemporaries: one of his judges, a famous Pietist priest, a local convert from Judaism, and another Court Jew.

Recommended Reading

Mintzker, Yair. *The Defortification of the German City, 1689–1866*. New York: Cambridge University Press, 2012.

—. “Jud Stöß.” In *Enzyklopädie jüdischer Geschichte und Kultur*, edited by Dan Diner on behalf of the Sächsische Akademie der Wissenschaften zu Leipzig. 3 vols. Stuttgart: Metzler, 2011–.

—. “A Word Newly Introduced into Language: The Appearance and Spread of ‘Social’ in French Enlightened Thought, 1745–1765.” *History of European Ideas* 34, 4 (2008): 500–513.

CHRISTOPH MÖLLERS

Permanent Fellow of the Wissenschaftskolleg

Dr. iur., LL.M., Professor of Public Law and Legal Philosophy

Humboldt-Universität zu Berlin

Judge at the Supreme Administrative Court for Berlin-Brandenburg

Born in 1969 in Bochum

Studied Law and Comparative Literature in Tübingen, Munich und Chicago

1. A PRIMITIVE CONCEPT OF NORMATIVITY AS A SOCIAL PRACTICE

2. META-RIGHTS: HUMAN DIGNITY, PROPORTIONALITY AND THE LEGAL CLAIM TO THE FUNDAMENTAL

Ad 1. While the dominant philosophical discourse today tends to identify normativity with good reasons for action, such an approach seems to be less promising as a conceptual basis to describe normativity as a social practice. Such a practice cannot be reduced to actions, it cannot be identified with any form of reasonableness or rationality and it takes a form that is different from mere arguments. What is needed instead is a non-normative, i.e. cognitive, concept of normativity that helps to explain how normativity functions. Therefore, I want to develop a primitive concept of normativity that is made up of two elements: the definition of a state of affairs and a marker that endorses its realisation. Such a model may shed some light on underestimated but practically relevant features of normative practices: its temporality and its need for a material form that keeps normativity distinguishable from the social context it claims to evaluate or to change. The study will illustrate these features by looking at several cases, including the written form of constitutions and the performative effect of majority rule.

Ad 2. Immanuel Kant's "einziges Menschenrecht" and Hannah Arendt's formula of the "right to have rights" are only the most important examples of the idea of a meta- or super-right, a right that serves as a basis for all other rights. In many modern national and international legal orders, this claim has been identified with the idea of human dignity. Other scholars see the basis of such a right in the proportionality principle. My project does not want to give yet another theory of what Human Dignity and proportionality could or should mean. Instead, it will analyse the claims of a meta-right and its potential dangers for the variety of freedoms.

Recommended Reading

- Möllers, Christoph. "Jenseits von Naturalisierung und Moralisierung: H. L. A. Harts klassisch-moderne Theorie des Rechts." Afterword to H. L. A. Hart. *Der Begriff des Rechts*. Frankfurt/Main: Suhrkamp, 2011 (new edition).
- . "Legalität, Legitimität und Legitimation des Bundesverfassungsgerichts." In *Das entgrenzte Gericht: eine kritische Bilanz nach sechzig Jahren Bundesverfassungsgericht*, edited by Matthias Jestaedt, Oliver Lepsius, and Christoph Möllers, 281–419. Frankfurt/Main: Suhrkamp, 2011.
- . "Multi-Level Democracy." *ratio iuris* 24 (2011): 247–266.

SHAHRIAR MONDANIPOUR

Author

Harvard University

Born in 1957 in Shiraz, Iran

Studied Political Sciences at Tehran University

WRITING A NOVEL

I plan to start and hopefully finish a new novel that I was considering writing while still living in Iran. I had constructed some of its scenes in my mind, and because I did not feel safe in my country, I wrote my notes in a way that only I could read and understand. More recently, I have continued structuring the story and developing various scenes.

The novel is about a political prisoner who loves and admires the art of cinema. He has seen many of the world's artistic films on videocassettes and later on CDs that he found in Tehran's black markets.

Now, in solitary confinement for several months that seem to last forever, he tries to find a way to resist, to survive, and to not lose his sanity: recalling and envisioning scenes from the beautiful movies he has seen. He tenaciously forces his memories of these films to resurface and ...

[I believe writers should not talk or write about the work they are going to write. It injures the freedom of that work's creativity and imagination.]

Recommended Reading

Mondanipour, Shahriar. *Censoring an Iranian Love Story*. New York: Knopf, 2009. German translation: *Eine iranische Liebesgeschichte zensieren*. Frankfurt/Main: Büchergilde Gutenberg, 2010.

WILLIAM MULLIGAN

EURIAS Fellow

Ph.D., History

University College Dublin

Born in 1975 in Dublin

Studied History at the University College Dublin, and European Studies and

History at the University of Cambridge

THE WARS THAT NEVER HAPPENED: EUROPEAN GREAT POWER POLITICS, 1871–1914

It is not surprising that the outbreak of the First World War has profoundly shaped our historical understanding of late 19th-century and early 20th-century international politics. Contemporaries sought explanations not just in the immediate July crisis, but also in the development and culture of international politics from the Franco-Prussian War of 1870/71. The explanations ranged from Prussian militarism to British commercial greed, from secret diplomacy to belligerent popular opinion. Historians and political scientists now regularly describe the international system as anarchical, driven by militaristic power politics, and prone to crises and war.

The accumulation of research, supporting this reading of international politics, appears overwhelming, but it also poses a puzzle. If the system was prone to war and if the wars of the mid-19th century had confirmed the benefits of *Realpolitik*, why were there no wars between the European great powers between 1871 and 1914? Was the second-longest period of great-power peace in modern European history – only eclipsed at the end of the Cold War – the result of a more orderly and restrained international system than scholars have described?

The aim of my research at the Wissenschaftskolleg is to examine one particular issue of interest to historians and political scientists, namely the norms governing the resort to war in a great-power crisis. The aim of the project is to analyse why war was rejected as an instrument of policy on so many occasions,

when conventional historical interpretations describe a system with incentives and easy justifications for war. The first part of the project will examine various crises in which governments considered and rejected war as a policy option. The second part will analyse the “unspoken assumptions” that worked in favour of the maintenance of peace in this period, including the concern that a general European war would lead to political and social catastrophe; the perceived difficulty of securing popular support for a war; the centrality of the legal imaginations in diplomacy; internalised beliefs that a great-power war was not modern or that it was criminal; and fear that a war of aggression, even if victorious, would lead other powers to form a coalition against the aggressor for having violated the norms of the international system.

Recommended Reading

Mulligan, William. *The Origins of the First World War*. Cambridge: Cambridge University Press, 2010.

—. “Britain, the ‘German Revolution’, and the Fall of France, 1870/71.” *Historical Research* 84, 224 (2011): 310–327.

—. “Gladstone and the Primacy of Foreign Policy.” In *The Primacy of Foreign Policy in British History, 1660–2000: How Strategic Concerns Shaped Modern Britain*, edited by William Mulligan and Brendan Simms, 181–196. Basingstoke, Hampshire: Palgrave Macmillan, 2010.

KLAUS OSPALD

Komponist

Hochschule für Musik Würzburg

Geboren 1956 in Münster (Westfalen)

Studium der Komposition an der Hochschule für Musik Würzburg

KOMPOSITION FÜR KAMMERENSEMBLE UND LIVE-ELEKTRONIK

Im Zentrum meiner letzten Werke steht ein umfangreicher Gesang von Giacomo Leopardi: „La ginestra o il fiore del deserto“. Auch in dem jetzt geplanten Werk lege ich Abschnitte dieses großangelegten Gedichts zugrunde, die eine ontologische Dimension besitzen und wie eine Matrix sämtliche Bereiche des Werks durchdringen.

In schlichten Bildern schildert Leopardi die existenzielle Abhängigkeit menschlichen Daseins: Er besingt die gleichgültige Natur, die wir besitzen wollen, als wäre sie für uns geschaffen, deren Schönheit wir fressen, deren Vorratskammern wir plündern wollen. Und zugleich dämonisiert er ihre ungezähmte Kraft, da sie uns auslöscht, als seien wir eine Randerscheinung des evolutionären Prozesses, seine Träne oder sein Blinddarm.

Geradezu modern mutet Leopardis Einsicht an, dass – frei nach Nietzsche – nicht das Aussprechen von Wahrheit das gesellschaftliche Leben zusammenhält, sondern Illusion und Täuschung. Leopardis leidenschaftliches Bedürfnis, die Unendlichkeit in kraftvollen, atemlosen Gesängen er- und umfassen zu wollen, zog mich unwiderstehlich in diese zerklüftete, Zeiten überdauernde Sprach- und Bildruine. So hoffe ich, mit diesem Werk einen weiteren Aspekt in dem von mir groß angelegten Zyklus zu entdecken und zu vollenden.

Die Live-Elektronik tritt einerseits als Feinjustierung der Intonation in das musikalische Geschehen ein, d. h. Intervalle gelangen in ihrer konventionellen Intonation in Bereiche des Hörens, die bewusst die fließende Grenze von vertraut intonierten Intervallen und ausgeweiteten bzw. zusammengepressten

Intervallbildungen suchen (Intonationsdoppelgänger). Weiterhin trägt sie dazu bei, den klanglich verborgenen Möglichkeiten der Instrumente eine akustische Außenseite zu geben, die somit in ungeahnter Weise in die Komposition eingreift und die verwendeten Klänge, aber auch den formal-dynamischen Prozess beeinflusst. Da keine vorgefertigten elektronischen Klänge verwendet werden, ist das unmittelbar Prozesshafte der Ausführung ein wichtiger Bestandteil der Komposition, die selbst in der Aufführung neue, spontane Ereignisse zulässt: Klangumwandlungen ereignen sich im Spiel und machen die Zerbrechlichkeit der kompositorischen Gestaltung während einer Aufführung ständig gegenwärtig. Die Ausgestaltung der elektronischen Klangumwandlungen wie die Resultate hängen in hohem Maße vom Spieler ab: Ansatz, Ort der Bogenführung etc. können die Klangumwandlungen vollkommen verändern. Damit wird der Spieler in einen Prozess, der sich ihm anfangs entzog, wieder eingebunden. Der intime Klangraum, der stets mit einem real erklingenden Instrument verbunden ist, geht somit nicht verloren, sondern wird durch die Möglichkeiten der Live-Elektronik in einen neuen, vielgestaltigen Klangraum eingewoben.

Das Werk ist ein Kompositionsauftrag des Experimentalstudios des SWR.

Hörempfehlung

Ospald, Klaus. „Tschappina-Variationen. Konzert für Ensemble und Violine.“
Neos, 2008.

ILANA PARDES

from January to July 2014

Ph.D., Professor of Comparative Literature

The Hebrew University of Jerusalem

Born in Baltimore, Maryland and grew up in Jerusalem

Studied Comparative Literature at the University of California, Berkeley

THE SONG OF SONGS: A BIOGRAPHY

The Song of Songs was traditionally attributed to King Solomon, the king who composed “a thousand and five songs”, the only king whose wisdom was so grand and all-encompassing (even the language of trees and beasts was within his reach) that he could venture to approach the greatest riddle of all: love. The question of the authorship of this text, however, has been contested in modern scholarship: from those who regard it as folk poetry or wedding songs to those who trace in it the voice of a woman and a remarkable female tradition. The question of the date of birth of the Song has been equally debated. It has been construed as an early text from the golden age of Solomon (revealing the wealth and exuberance of the times) as well as one of the Bible’s latest books (on philological grounds), composed no earlier than the third century B.C.E.

The greatest point of contestation in the tumultuous life of the Song revolves around the suitable mode of exegesis. For many centuries, the predominant tendency (both in the Synagogue and the Church) was to read the Song of Songs as an allegorical poem whose primary objective was to celebrate divine love. A dramatic shift – one of the most dramatic exegetical shifts of all times – took place in the 18th century with the rise of a new reading of the Song as an exquisite, earthly dialogue between human lovers.

The aim of this book is to complicate the history of the reception of the Song. Against the scholarly tendency to regard the transition from the allegorical to the literal as clear cut, I call attention to the changing definitions of what counts as allegorical and what counts as literal while highlighting the extent to which

these two interpretive lines are inextricably intertwined in a whole array of episodes in the text's biography. Thus, the erotic fervor of the Song is part and parcel of mystical readings of the text (be it St. Bernard's sermons or the Zohar) and – as surprising as it may first seem – allegory has not disappeared from the modern exegetical scene. Even as religion seems to vanish from politics and the public sphere, it never ceases to define the project of modernity. New communal allegories, I suggest, have been shaped via the Song in modern settings, the two most prominent examples being Israeli culture and American culture.

The results of my research will be published by Princeton University Press as part of its Lives of Great Religious Books series.

Recommended Reading

Pardes, Ilana. *Countertraditions in the Bible: A Feminist Approach*. Cambridge, Mass.: Harvard University Press, 1992.

—. *Melville's Bibles*. Berkeley: University of California, 2008.

—. *Agnon's Moonstruck Lovers: The Song of Songs in Israeli Culture (Samuel & Althea Stroum Lectures in Jewish Studies)*. Seattle: University of Washington Press, 2014 (forthcoming).

JAHNAVI PHALKEY

EURIAS Fellow

Ph.D., History of Science and Technology

King's College London

Born in 1973 in Nagpur, India

Studied History of Science and Technology at Georgia Institute of Technology,

Atlanta, Politics of Asia and Africa at the University of London, and Indian

Studies at the University of Bombay

STATISTICS, STATE AND SOCIETY IN INDIA

Focus Group *Quantification* (see p. 134)

The creation and stabilisation of authority, also of territorial states, by mobilising scientific knowledge, is an important question in the history of science, and we stand to gain a new perspective on these processes by studying India. Theodore Porter, a historian of statistics (and Fellow of this year), has argued that the rise of quantification in social and economic investigation is not necessarily because of its success in the study of nature. On the contrary, he argues, quantification grows from “attempts to develop a strategy of impersonality in response to pressures from outside”. Taking Porter’s argument as a point of departure, I would like to map the “pressures” that contributed to creating the space, specifically for statistics, and more generally for objectivity and quantification, as obvious strategies to understand and explain the subcontinent.

Recommended Reading

Phalkey, Jahnavi. "Introduction: Science, History and Modern India." *Isis* 104 (June 2013).

—. "Not only Smashing Atoms: Nuclear Physics at the University Science College, Calcutta, 1938–1948." In *Science and Modern India: An Institutional History c. 1784–1947*, edited by Uma Dasgupta. New Delhi: Pearson Education, 2010.

THEODORE M. PORTER

Ph.D., Professor of History

University of California, Los Angeles

Born in 1953 in Washington (state)

Studied History at Stanford University and History and Philosophy of Science at Princeton University

THE DATA OF INSANITY: ASYLUM STATISTICS
AND THE INVESTIGATION OF HUMAN HEREDITY
SINCE 1789

Focus Group *Quantification* (see p. 134)

We usually understand the rise of genetics in terms of laboratory technologies for the manipulation of genes or DNA. But genetics has always had an important statistical aspect, all the more so in the genomic era. New social and medical institutions became the laboratories for the data-based science of human heredity. I look above all at insane asylums, which, in the era of the new "moral treatment" around 1800, began an epic expansion that continued until the 1950s. Partly in consequence of their status (often) as state institutions, but reflecting also their increasingly unmanageable scale, these institutions participated actively in the statistical avalanche of the early 19th century. Heredity figured in asylum records and reports from the beginning, and as alienists progressively lost hope in the prospect of cures for their teeming patients, they became all the more interested in finding eugenic solutions. Their work to construct comprehensive databases of heredity using new technologies of record keeping, to standardize disease categories as well as other patient characteristics, and to cultivate more powerful methods of statistical analysis and more effective forms of representation provides a new perspective on the history of human genetics.

Recommended Reading

Porter, Theodore M. *Karl Pearson: The Scientific Life in a Statistical Age*. Princeton: Princeton University Press, 2004.

—. *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life*. Princeton: Princeton University Press, 1995.

—. *The Rise of Statistical Thinking, 1820–1900*. Princeton: Princeton University Press, 1986.

ANDRII PORTNOV

from July 2013 to February 2014

Dr., History

Editor-in-Chief of www.historians.in.ua

Kiev, Ukraine

Born in 1979 in Dnipropetrovsk, Ukraine

Studied History at Dnipropetrovsk University and Cultural Studies
at Warsaw University

ALMOST CAPITAL WITHOUT HISTORY:

YEKATERINOSLAV-DNIPROPETROVSK, 1795–2005

The principal aim of my project is to finish the book on Yekaterinoslav-Dnipropetrovsk “Almost Capital Without History” (together with my sister Tetyana Portnova). The basic idea is to put local events and realities into a broader historical, sociological, and cultural context and to look beyond the national narratives and various popular interpretations of Ukrainian, Russian, Soviet, and Eastern European history. Special attention will be devoted to the issues of the changing cityscape and competing self-definitions and self-perceptions of the city dwellers. The coexistence of the rural and the urban, of huge factories and city infrastructure with the agrarian areas including private livestock and private gardens, and the interrelations between the two lifestyles within the same city is another focus of the research. The history of Dnipropetrovsk allows us to gain new insights into the revolutions on the peripheries (the Russian and Ukrainian revolutions of 1917–1921, the collapse of the Soviet Union, the “Orange Revolution” of 2004, which in Dnipropetrovsk differed substantially from the same events in other parts of “Eastern Ukraine”). Yekaterinoslav-Dnipropetrovsk is also a great laboratory for studying various modes of the coexistence, conflicts, and interrelations of different ethnic and religious groups (the history of the Jewish community, as well as the stories of the local German, Polish, Karaite groups). The paradoxes of the city’s

“closeness” in Soviet time and the forms of dissident movements (from Ukrainian nationalists to Zionists and neo-Baptist activists) are no less important. The paradoxes of post-Soviet pluralism in the symbolic, economic, political, social, and cultural life of the city and its self-representations and images will be analyzed in the last part of the book.

Recommended Reading

Portnov, Andriy. “Memory Wars in Post-Soviet Ukraine (1991–2010).” In *Memory and Theory in Eastern Europe*, edited by Uilleam Blacker, Alexander Etkind, and Julie Fedor, 233–254. Basingstoke: Palgrave Macmillan, 2013.

Portnov, Andrii and Tetiana Portnova. “Die ‘jüdische Hauptstadt der Ukraine’: Erinnerung und Gegenwart in Dnipropetrovs’k.” *Osteuropa* 62 (2012): 25–41.

Portnov, Andrii. *Istorii istorykiv: Oblychchia j obrazy ukrainskoji istoriohrafii XX stolittia* [Historians and Their Stories: The Faces and Images of the Ukrainian Historiography in the 20th Century]. Kyiv: Krytyka, 2011.

—. “Miasto niespełnionych ambicji.” [The City of the Unfulfilled Ambitions]. *Nowa Europa Wschodnia* 1, 10 (2010): 131–141.

PAUL ALAN ROBERTSON

from March to July 2014

Professor (emer.) of Music

The Music Mind Spirit Trust, Rudgwick, West Sussex, England

Born in 1952 in London

Studied Musicology at the Royal Academy of Music, London

INVESTIGATION OF “THE MEANING OF MUSIC”

I intend to write a book or series of articles exploring different aspects of musical meaning, including music’s philosophy, neurobiology, structure, performance and social history etc., with reference to my existing personal discography and/or to new recordings of the six Bach solo violin sonatas and partitas.

Recommended Listening

Robertson, Paul Alan and Sir John Tavener: In *Conversation* “Hearing Ragas” BBC radio 4 (www.bbc.co.uk/programmes/p00y8fxj). First broadcast: September 7, 2012.

Beethoven, Ludwig van. *Complete string quartets*. Medici String Quartet (Paul Robertson, violin; David Matthews, violin; Ivo-Jan der Werff, viol; Anthony Lewis, cello; with Simon Rowland-Jones, violin, in the 7th work). Wyastone Leys, Monmouth: Nimbus Records, 1994.

Recommended Reading

Robertson, Paul Alan. "Medicine, Music, and the Mind: What is Musical Genius?" *Clinical Medicine. Journal of the Royal College of Physicians of London*. 8, 2 (April 2008): 178–181.

MAHUA SARKAR

EURIAS Fellow

Ph.D., Associate Professor of Sociology, Asian and Asian American Studies
Binghamton University, New York

Born in 1969 in Calcutta

Studied Sociology at Johns Hopkins University, Baltimore

“DOING ABROAD” (BIDESH KARA):
CIRCULAR MIGRATION AND BANGLADESHI
TRANSNATIONAL CONTRACT WORKERS

This project brings together theoretical insights from a number of fields of research within sociology and history – migration studies, historical debates over the uncertain boundary between free and unfree labour and life-course research – as well as feminist scholarship on work to bear on a study of temporary contract labour and circular migration, the fastest-growing trend within international migration. While temporary contract work involves both “high-skilled”, highly paid professionals and “low-skilled” manual workers, this study focuses exclusively on the latter. Drawing on extensive ethnographic research among Bangladeshi contract workers in Singapore and Malaysia, on-going research in Bangladesh among return workers and their families and archival and secondary sources on the history of work, the study aims to develop a critical understanding of what constitutes “normalcy” in the context of “low-skilled”, transnational temporary contract work today, in the absence of explicit coercion or physical confinement.

Recommended Reading

Sarkar, Mahua. *Visible Histories, Disappearing Women: Producing Muslim Womanhood in Late Colonial Bengal*. Durham: Duke University Press, 2008.

—. “Between Craft and Method: Meaning and Inter-Subjectivity in Oral History Analysis.” *The Journal of Historical Sociology* 25, 4 (December 2012): 578–600.

—. “Looking for Feminism.” *Gender & History* 16, 2 (August, 2004): 318–333.

PAUL SCHMID-HEMPEL

Permanent Fellow of the Wissenschaftskolleg
Dr. phil., Professor of Experimental Ecology
Swiss Federal Institute of Technology, Zurich

Born in 1948 in Zurich

Studied Biology, Physiology and Ecology at the Universität Zurich

HOST-PARASITE CO-EVOLUTION, ITS MEDIATORS AND CONSEQUENCES

Virtually all organisms have their parasites. Parasites, by definition, impact negatively on their hosts and, vice versa, hosts defend themselves to the detriment of the parasite's success. This ecological interaction leads to ongoing antagonistic co-evolution between the two parties. The co-evolutionary process in turn has many striking consequences for the maintenance of genetic diversity in populations, for the emergence of host-defense and parasite-evasion mechanisms, or even for increasing divergence *among* populations, which may eventually lead to speciation. My project deals with the basic building blocks of this co-evolutionary scenario by considering whether a defense system based on the synergistic action of effectors can resist a rapidly changing parasite. Furthermore, it has been recently recognized that the microbiota – the bacterial gut flora of a host – also plays an important role in the defense against pathogens in a more specific way. This project thus focuses on the role of specificity in host-parasite interactions, on how the microbiota mediates these interactions, and on the characteristics of the background-host genotype. These questions are of great relevance not only to a basic understanding of host-parasite co-evolution but for the implied practical applications in medicine, agriculture or wildlife management.

Recommended Reading

- Schmid-Hempel, P. (2008). “Immune evasion by parasites – a momentous molecular war.” *Trends in Ecology and Evolution* 23: 318–326.
- Richner, H. and P. Schmid-Hempel (2006). “Grundlagen der Parasit-Wirt-Koevolution.” In *Allgemeine Parasitologie*, edited by T. Hiepe, R. Lucius, and B. Gottstein, 69–79. Stuttgart: Parey-Blackwell.
- Schmid-Hempel, P. (2003). “Variation in immune defence as a question of evolutionary ecology.” *Proceedings of the Royal Society London B* 270: 357–366.

PIPPA SKOTNES

D.Litt., Professor of Fine Art

Michaelis School of Fine Art, University of Cape Town

Born in 1957 in Johannesburg, South Africa

Studied Fine Art at the University of Cape Town

BONE BOOKS AND THE SPECIAL MISSION OF LOUIS ANTHING

During this fellowship I will be working on a book that will be written, literally, on the skeletons of two adolescent giraffes, both of which died in the Northern Cape in South Africa. The idea of writing a book on giraffe skeletons (not the conventional outcome for a research endeavour) indicates, for me, a productive range of creative and artistic explorations about the archive and the nature of a book and of reading. In particular, my giraffe book project in its practice will embody a history of transcription, illuminated manuscripts and the “artist’s book”.

While mine is an artist’s project, I am also deeply engaged with the history of the /xam (or the Cape Bushmen) in South Africa, and with the archive of that history. The subject of my book is the archive of letters written to the Cape Parliament in the 1860s by special magistrate Louis Anthing, a man driven by a sense of justice to document the last phase of the genocide of the /xam on the northern frontier of the Cape Colony (now the Northern Cape). At this time, Boers (Dutch colonial farmers) were exterminating the Bushmen, along with the herds of antelope of all species, the rabbits and the birds that inhabited the country’s interior. Whole species were rendered extinct as the Boers shot their way through to the north. Those Bushmen who were not killed, or taken into forced labour, were literally starving to death in a parched and increasingly ravaged environment. Today hundreds of letters written by Anthing survive in the Cape Archive and record the devastating stories of individual lives and families that were caught up in this genocide. These letters, along with other

material from the massacre sites (including reference to big game hunters now shooting animals bred for the purpose on the same land) will inform this project.

Anthing's mission intersected with the work of German-born philologist Wilhelm Bleek and English-born Lucy Lloyd, both of whom lived in Cape Town, South Africa in the second half of the 19th century. Bleek and Lloyd's extensive interviews with /xam prisoners arrested for resisting colonial brutality have been the subject of several of my other books and artworks. In working in Berlin, I am mindful of both Bleek's early years in this city, and the time one hundred years ago when Lucy Lloyd lived in Charlottenburg and was completing her own book, *Specimens of Bushman Folklore*.

Recommended Reading

Skotnes, Pippa. *Book of Iterations*. Cape Town: Axeage Private Press, 2009 (viewable at http://www.cca.uct.ac.za/reading_room/?id=332).

—. *Unconquerable Spirit: George Stow's History Paintings of the San*. Johannesburg: Jacana Press, and Athens: Ohio University Press, 2008.

—. *Claim to the Country: The Archive of Wilhelm Bleek and Lucy Lloyd*. Johannesburg: Jacana Press, and Athens: Ohio University Press, 2007.

YURI SLEZKINE

Ph.D., Jane K. Sather Professor of History
University of California, Berkeley

Born in 1956 in Moscow

Studied Philology at Moscow State University and History at the University of
Texas at Austin

THE HOUSE OF GOVERNMENT: THE RUSSIAN REVOLUTION IN ONE BUILDING

Across the Moscow River from the Kremlin and the recently resurrected Cathedral of Christ the Savior stands a huge gray building known as the House of Government or the House on the Embankment. Built during the first Five-Year Plan as a model of the “Communist organization of daily life” and a shelter for top government officials, it takes up about three hundred acres on a marshy island and comprises 505 apartments clustered around 25 entryways and three connecting courtyards.

When the “House of the Central Executive Committee” opened its doors in 1930, it was itself an island – a city of the future separated from the city of Moscow by heavy metal gates and connected to it by luxury government cars shuttling over the Old Stone Bridge (which had been relocated for the purpose). It was a self-contained and unevenly collectivized private realm of public officials, complete with a post office, telegraph, tailor shop, cafeteria, bank, library, daycare center, kindergarten, laundromat, theater, movie theater, solarium, gym (with tennis courts and chess tables), grocery store, department store, shooting gallery, and beauty salon.

Sharing (or not sharing) these facilities, raising their families, employing German governesses, and constantly moving from apartment to apartment to keep up with promotions and demotions were high-ranking People’s Commissars, Army commanders, proletarian poets, foreign communists, and assorted luminaries, including the professor who embalmed Lenin’s body and the

composer who wrote the Soviet national anthem. This microcosm's demiurge, the architect Boris Iofan, lived in a large penthouse apartment overlooking the never-completed construction of his next, and the world's ultimate, public building: the Palace of Soviets.

Then, in 1937–38, about 400 of them were arrested, accused of treason, and either shot or sent to the Gulag. Their families were exiled or relocated to communal apartments; their “living space” was taken over by polar aviators and record-breaking Stakhanovites (including A. G. Stakhanov himself).

I would like to write a history of the House of Government: as an examination of the physical structure itself, a collective biography (historical ethnography) of the people inside, a metaphor for the life and death of the first generation of Soviet rulers, and, ultimately, a history of the demise of the Russian Revolution.

Recommended Reading

Slezkine, Yuri. *The Jewish Century*. Princeton: Princeton University Press, 2004.

—. *Arctic Mirrors: Russia and the Small Peoples of the North*. Ithaca: Cornell University Press, 1994.

—. “The USSR as a Communal Apartment, or How a Socialist State Promoted Ethnic Particularism.” *Slavic Review* 53, 2 (Summer 1994): 414–452.

HARI SRIDHAR

from September 2013 to March 2014

Fellow of the College for Life Sciences (see p. 135)

Ph.D. (submitted), Ecology

Indian Institute of Science, Centre for Ecological Sciences, Bangalore

Born in 1982 in Chennai, India

Studied Wildlife Science at the Wildlife Institute of India

EATING WITH THE ENEMY

A dominant idea in ecology is that the more similar species are, the more likely are they to compete and avoid each other. This idea has formed the core of the theory underlying our understanding of species coexistence. More recently, however, studies have documented examples of positive interaction between ecologically similar species. My own doctoral dissertation found that, globally, species co-occurring in mixed-species flocks of insectivorous birds were more similar than expected by chance. These examples cast doubt on the stereotyping of ecologically similar species as competitors and suggest that, under certain conditions, similar species can also interact positively. During my time at the Wissenschaftskolleg zu Berlin I will try to understand what these conditions might be. I will identify the various contexts in which organisms might benefit from grouping/associating with similar individuals and the conditions that prevent them from doing so with conspecifics. I expect that when organisms face the need to group or associate with ecologically similar organisms, but are unable to do so with conspecifics for some reason, they then choose to associate with individuals of similar species instead. I will build a conceptual model (verbally to begin with but also mathematically later on) based on this idea and identify suitable study systems in which to put the model to the test. Ultimately, I would like to examine whether theory underlying species coexistence needs to be reformulated to incorporate the possibility of positive interactions between similar species.

Apart from the primary work outlined above, I will spend part of my time at the Wissenschaftskolleg pursuing two other ideas. First, I will carry out a critical reassessment of the papers I have published so far. I would like to go back to my published work and see whether I still stand by all aspects of these papers – the conceptual underpinnings of the work, the study design, the analytical approach and the inferences drawn – in the light of current knowledge. By current knowledge I mean both where the field and where my own understanding currently stand. I will also spend part of my time at the Wissenschaftskolleg trying to write a story to convey the workings and mysteries of mixed-species bird flocks to a non-scientific audience.

Recommended Reading

- Sridhar, H., F. Jordan, and K. Shanker (2013). “Species importance in a hetero-specific foraging association network.” *Oikos*.
doi:10.1111/j.1600-0706.2013.00101.x
- Sridhar, H., U. Srinivasan, R. A. Askins, J. C. Canales Delgadillo, C. C. Chen, D. N. Ewert, G. A. Gale, E. Goodale, W. K. Gram, P. J. Hart, K. A. Hobson, R. L. Hutto, S. W. Kotagama, J. Knowlton, T. M. Lee, C. A. Munn, S. Nimnuan, B. Z. Nizam, G. Péron, V. V. Robin, A. D. Rodewald, P. G. Rodewald, R. L. Thomson, P. Trivedi, S. L. van Wilgenburg and K. Shanker (2012). “Positive relationships between association strength and phenotypic similarity characterize the assembly of mixed-species bird flocks globally.” *The American Naturalist* 180: 777–790.
- Sridhar, H., G. Beauchamp, and K. Shanker (2009). “Why do birds participate in mixed-species foraging flocks? A large-scale synthesis.” *Animal Behaviour* 78: 337–347.

SIMON TEUSCHER

Dr. phil., Professor für Geschichte des Mittelalters
Universität Zürich

Geboren 1967 in Bern

Studium der Geschichte, Nordistik und Philosophie an der Universität i
Bergen (Norwegen) und der Universität Zürich

BLUT UND FLEISCH: VORMODERNE GELEHRTE DEBATTEN ÜBER VERWANDTSCHAFT

Ich möchte ein Buch zum gelehrten Nachdenken über Verwandtschaft in Europa am Übergang vom Mittelalter zur Neuzeit schreiben. Dem Thema kommt vor dem Hintergrund aktueller Debatten über die Reproduktionstechnologien, die Genforschung und ihre sozialen Folgen einige Brisanz zu. Denn gerade in der Auseinandersetzung mit bahnbrechenden wissenschaftlichen Entwicklungen werden kulturelle Vorstellungen über physiologische Dimensionen der Zusammengehörigkeit (z. B. „Blutsbande“, „Reinblütigkeit“) mobilisiert, die eine lange Vorgeschichte haben. Diese möchte ich mit Ausgangspunkt in einer Untersuchung der juristischen und theologischen Kommentare zu Verwandtschaftsdiagrammen (*arbores consanguinitatis et affinitatis*) rekonstruieren. Diese Kommentare erschienen zwischen dem 12. und dem 16. Jahrhundert in dichter Folge und verfochten einander zuwiderlaufende Konzeptionen der Verwandtschaft. Sie erörterten unter anderem, was Verwandtschaft eigentlich ist, wie man diese medial emergent machen kann, welche physiologischen Substanzen (z. B. Blut oder Fleisch) Verwandte teilen und wie dies mit der Vererbung von Eigenschaften und Gütern zusammenhängt. Ging es in dieser gelehrten Tradition anfänglich vor allem um die Durchsetzung von Inzestverboten, d. h. gewissermaßen um die Umgehung der Verwandtschaft, erschien diese mit der Zeit zunehmend als gesellschaftliche Ordnungskategorie. Entgegen Vorstellungen über einen Bedeutungsverlust der Verwandtschaft seit dem Mittelalter wird das Projekt thematisieren, dass Verwandtschaftsvorstellungen

eine produktive Rolle bei der Formierung moderner Kategorisierungen des Sozialen wie der Rasse oder der Ethnie spielten.

Lektüreempfehlung

Teuscher, Simon. „Flesh and Blood in the Treatises on the *Arbor Consanguinitatis* (Thirteenth to Sixteenth Centuries).“ In *Blood and Kinship: Matter for Metaphor from Ancient Rome to the Present*, herausgegeben von Christopher H. Johnson, 83–104. New York/Oxford: Berghahn, 2013.

—. *Lords' Rights and Peasant Stories: Writing and the Formation of Tradition in the Later Middle Ages*. Philadelphia: University of Pennsylvania Press, 2012.

Teuscher, Simon mit David W. Sabeau und Jon Mathieu, Hg. *Kinship in Europe: Approaches to Long-Term Development (1300–1900)*. New York/Oxford: Berghahn, 2007.

FRÉDÉRIC THOMAS

from May to July 2014

Dr., Directeur de recherches, Evolutionary Biology and Evolutionary Medicine
Centre national de la recherche scientifique (CNRS), Montpellier

Born in 1970 in Les Sables d'Olonne (Vendée), France

Studied Biology, Ecology, and Evolution at the Université Montpellier 2

CANCER: THE MISSING LINK IN ECOSYSTEM FUNCTIONING?

Focus Group *Cancer Evolution* (see p. 130)

Cancer is a disease that affects the majority of metazoan species and, prior to directly causing death, is likely to influence its host's competitive abilities, susceptibility to pathogens, vulnerability to predators, and ability to disperse. Despite this impressive list of ecologically relevant consequences, cancer is rarely incorporated into model ecosystems.

In my project, I will explore the diversity of ways in which oncogenic phenomena, from precancerous lesions to generalized metastatic cancers, may directly or indirectly interfere with ecological and evolutionary processes that govern biotic interactions. I will also explore the idea that evolutionary responses displayed by multicellular organisms to avoid, eliminate, or alleviate cancerous problems have been poorly described so far. Behind the apparent chaos produced by all the different cancerous manifestations, I believe that there are central ecological and evolutionary consequences that unite oncogenic phenomena. My project will provide a novel perspective on the ecological and evolutionary significance of cancer in wildlife and should stimulate theoretical and empirical research on this topic. My main approaches will be data analyses (from a global database that I am constructing at the moment on cancer incidence in animals from zoological parks) and modeling.

Recommended Reading

- Thomas, F., D. Fisher, P. Fort, J. P. Marie, S. Daoust, B. Roche, C. Grunau, C. Cosseau, G. Mitta, S. Baghdiguan, F. Rousset, P. Lassus, E. Assenat, D. Gregoire, D. Misse, A. Lorz, F. Billy, W. Vainchenker, F. Delhommeau, S. Koscielny, R. Itzykson, R. P. Tang, F. Fava, A. Ballesta, T. Lepoutre, L. Krasinska, V. Dulic, P. Raynaud, P. Blache, C. Quittau-Prevostel, E. Vignal, H. Trauchessec, B. Perthame, J. Clairambault, V. Volpert, E. Solary, U. Hibner, and M. E. Hochberg (2013). “Applying ecological and evolutionary theory to cancer: a long and winding road.” *Evolutionary Applications* 6: 1–10.
- Roche, B., K. Sprouffske, H. Hbid, D. Misse, and F. Thomas (2013). “Peto’s paradox revisited: theoretical evolutionary dynamics of cancer in wild populations.” *Evolutionary Applications* 6: 109–116.
- Roche, B., M. E. Hochberg, A. F. Caulin, C. C. Maley, R. A. Gatenby, D. Misse, and F. Thomas (2012). “Natural resistance to cancers: a Darwinian hypothesis to explain Peto’s paradox.” *BMC Cancer* 12: 387.
doi:10.1186/1471-2407-12-387

NINA VERHEYEN

Dr. phil., Geschichte
Universität zu Köln

Geboren 1975 in Hamburg

Studium der Geschichte, Soziologie und Filmwissenschaften an der Humboldt-Universität zu Berlin, der Freien Universität Berlin, der Università di Roma Tre und der Columbia University, New York

DIE ENTDECKUNG DER EIGENEN LEISTUNG:
KONSTRUKTION, VERMESSUNG UND ERFAHRUNG
INDIVIDUELLER LEISTUNGSKRAFT IN EUROPA
UM 1900

Warum definieren sich Menschen über „ihre“ Leistung beziehungsweise über das, was sie selbst und andere dafür halten? Das kulturhistorische Projekt bezieht sich auf Europa um 1900, wobei die deutsche und britische Geschichte im Zentrum stehen. Während der Jahrhundertwende – so die These – und damit erst *nach* der Formierung des angeblich leistungsorientierten Bürgertums und in Teilen schon *vor* den transatlantischen Einflüssen des Taylorismus und Fordismus wurde Leistung auf diskursiver Ebene als eine individuell zurechenbare, mess- und steigerbare Größe dargestellt. Es etablierten sich Praktiken der Vermessung individueller Leistung in so unterschiedlichen Feldern wie Bildung, Arbeit und Freizeit. Diese Praktiken wirkten als Techniken der Subjektivierung, das heißt sie veränderten das Selbstverständnis der betroffenen Personen und erlaubten dem Einzelnen, sich über „seine“ Leistung zu definieren – ein Gedanke, der für Kulturen der Konkurrenz in der europäischen Moderne konstitutiv ist und das moderne Subjekt seither fest im Griff hat. Anstatt allerdings zu unterstellen, dass sich die skizzierten diskursiven und praxeologischen Verschiebungen bruchlos in männliche oder weibliche Körper einschrieben, fragt das Projekt auch nach Ablehnungen und Devianzen, kreativen Aneignungen und Konflikten. Denn Praktiken der Vermessung – und damit auch

der Konstruktion – individueller Leistung erfahren um 1900 zwar eine Institutionalisierung, sie waren aber hochgradig umstritten.

Lektüreempfehlung

Verheyen, Nina. *Diskussionslust: Eine Kulturgeschichte des „besseren Arguments“ in Westdeutschland*. Göttingen: Vandenhoeck & Ruprecht, 2010.

Verheyen, Nina und Manuel Borutta, Hg. *Die Präsenz der Gefühle: Männlichkeit und Emotion in der Moderne*. Bielefeld: Transcript, 2010.

Verheyen, Nina. „Unter Druck. Die Entstehung individuellen Leistungsstrebens um 1900.“ *Merkur. Zeitschrift für europäisches Denken* 5 (2012): 382–390.

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BIOLOGICAL MOTION

I am currently working on a book about biological motion.

The book takes its departure from my previous research on the notion of development that arose around 1800. I have argued elsewhere that the concept of development was invented anew in this period, when the analysis of development was translated into an analysis of motion, notably rhythmic motion. I want to incorporate those insights and elaborate on the role of motion and its representations in modern biology in a broader and more systematic perspective.

The basic premise of the work is that one of the central features of modern biology is its ability to account for organic change: the growth of a plant, the development of the embryo, the metamorphosis of a larva into a butterfly or even the transformation of a healthy into a diseased body are all phenomena in which change cannot be accounted for in simple physical terms.

Developing a few historical case studies from the 19th century to the latest research, my aim is to explore how biology developed a conceptual framework, practices, ways of seeing, forms and media of representation to reformulate these transformations in terms of motion.

Recommended Reading

Wellmann, Janina, ed. *Cinematography, Seriality, and the Sciences*. Cambridge: Cambridge University Press, 2011. (Science in Context 23–24.)

Wellmann, Janina. *Die Form des Werdens: Eine Kulturgeschichte der Embryologie, 1760–1830*. Göttingen: Wallstein, 2010.

—. “Die Metamorphose der Bilder: Die Verwandlung der Insekten und ihre Darstellung vom Ende des 17. bis zum Anfang des 19. Jahrhunderts.” *NTM: Zeitschrift für Geschichte der Wissenschaften, Technik und Medizin* 2 (2008): 183–211.

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EFFECTS OF SEX CHROMOSOMES AND GENE
DUPLICATIONS ON THE EVOLUTION OF
ELABORATE TRAITS IN FLIES

Focus Group *Origin and Evolution of Exaggerated Traits* (see p. 132)

Sexual selection is a powerful evolutionary force that is widely recognized as causing dramatic morphological diversity among species. Extraordinary traits, such as elaborate plumage, dramatic coloration, or extreme modifications to the head, typically exhibit sexual dimorphism and are frequently associated with either male conflict or female preferences. These structures often differ conspicuously among males, but not females, of closely related species, suggesting that they can evolve rapidly. However, how such traits arise and subsequently become exaggerated is largely unknown.

Sexual dimorphism in head morphology is common in adult flies. Modification of the male head into elaborate and exaggerated structures, such as eye-stalks, has evolved independently multiple times. Stalk-eyed flies in the family *Diopsidae* provide one of the most dramatic examples of this phenomenon. In males of some species, the elongation is so extreme that the length of the eye-stalks exceeds the length of the body. Eyestalks play a critical role in the mating system by helping males win fights and by helping females select mates. Thus, these flies provide a model system for determining how elaborate traits evolve by sexual selection. Over the past few years colleagues and I have generated a large amount of genomic data on stalk-eyed flies that can now be used to locate

genes and genomic regions that influence the development and evolution of this trait. During this fellowship I will work with colleagues to complete and annotate the genome assembly for one of these flies and then use the genomic data to determine the role of gene duplications and sex chromosomes in the evolution of this extraordinary morphological trait. In addition, I will evaluate the theoretical possibility that a genomic process, such as a duplication in a gene that influences sensory perception, could favor concordant duplications in genes that influence morphology. In addition to producing several papers on the genetics and development of these unusual flies, I also intend to write a review of how genomic factors, such as transposable elements and sex chromosome reversals, influence the evolution of exaggerated traits.

Recommended Reading

Baker, R. H., A. Narechania, P. Johns, and G. S. Wilkinson (2012). "Gene duplication, tissue-specific expression and sexual conflict in stalk-eyed flies (*Diopsidae*)." *Philosophical Transactions of the Royal Society B* 367: 2357–2375 doi:10.1098/rstb.2011.0287

Wilkinson, G. S. and P. R. Reillo (1994). "Female choice response to artificial selection on an exaggerated male trait in a stalk-eyed fly." *Proceedings of the Royal Society of London B* 255: 1–6.

Wilkinson, G. S. (1984). "Reciprocal food sharing in the vampire bat." *Nature* 308: 181–184.

SCHWERPUNKTGRUPPE *KREBSEVOLUTION*

1971 startete der amerikanische Präsident Richard Nixon seine inzwischen berühmt gewordene Initiative „Krieg gegen den Krebs“ – mit der Vorhersage, die Krankheit könne innerhalb von fünf Jahren besiegt werden. Nach über 40 Jahren ist Krebs noch immer für etwa ein Viertel aller Todesfälle in den reichen Ländern und etwa für ein Achtel aller Todesfälle weltweit verantwortlich. Trotz erheblicher Fortschritte konnten die Behandlungsmethoden nicht alle Erwartungen erfüllen. Die Krebsforschung steht jetzt am Scheideweg und braucht neue Ideen, grundlegende Innovationen und vollkommen neuartige interdisziplinäre Teams von Wissenschaftlerinnen und Wissenschaftlern. Ein entscheidender konzeptioneller Durchbruch für das Verstehen von Krebs liegt in der darwinschen Evolutionstheorie und in ökologischen Ansätzen: Krebs ist eine Krankheit, die eine Gelegenheit braucht, um sich zu entwickeln; sie ist mit der Evolution, der Expansion und dem Wettbewerb klonaler Zellpopulationen im Körper verbunden. Wenn wir alles berücksichtigen, was wir über die Populationsökologie und die genetischen, molekularen und demographischen Charakteristika von Zellen und ihren Mikroumwelten wissen – wie groß ist die Vorhersagbarkeit der Krebsdynamik auf der Ebene der Population und des einzelnen Organismus?

Das zentrale Ziel der Schwerpunktgruppe Krebs evolution am Wissenschaftskolleg liegt darin, durch die Anwendung von Prinzipien der Evolutionstheorie Fortschritte bei der Erklärung des Krankheitsverlaufs und der therapeutischen Ergebnisse zu machen sowie neue Ansätze zur Krebsprävention und Krebstherapie zu entwickeln. Die Mitglieder der Schwerpunktgruppe wollen untersuchen, wie die verschiedenen Krebsarten durch die Evolution beeinflusst wurden – dabei geht es um die Unterschiede zwischen den Arten (Frédéric Thomas), zwischen Individuen derselben Population (Michael Hochberg), zwischen Individuen, deren Krebs bereits Metastasen gebildet hat (Athena C. Aktipis), bis hin zu Unterschieden innerhalb der Tumore (Hanna Kokko, Urszula Hibner). Die Forschung der Schwerpunktgruppe befasst sich auch mit der Frage, inwieweit sich Krankheitserreger und die Resistenz, die die Wirte gegen sie entwickelt haben, auf die Wirtspopulationen ausgewirkt haben (Paul W. Ewald). Überdies wird die Schwerpunktgruppe auch einen eher an-

wendungsorientierten Ansatz verfolgen und der Frage nachgehen, wie die Evolutionsmedizin optimiert werden kann, um Krebs noch vor seiner Entstehung oder im sehr frühen Stadium zu behandeln (Michael Hochberg). Die Ergebnisse sollen als wissenschaftliche Aufsätze für das Fachpublikum veröffentlicht werden; zudem ist eine Monographie geplant (Carlo C. Maley).

FOCUS GROUP *CANCER EVOLUTION*

In 1971, US president Richard Nixon declared the now-famous “war on cancer”, predicting victory within five years. More than 40 years later, cancer still accounts for about one-quarter of all human deaths in wealthy countries and about one-eighth worldwide. Despite significant progress, treatments have not lived up to expectations and cancer research is now at a crossroads, needing new ideas, major innovation, and new and unprecedented interdisciplinary teams of scientists. An important conceptual breakthrough in understanding cancer lies in Darwinian and ecological theories: cancer is a disease of opportunity, associated with clonal evolution, expansion, and competition within the body. What is the level of predictability of cancer dynamics at population and individual organism levels, given our knowledge of population ecology and the genetic, molecular, and demographic characteristics of cells and their microenvironments?

The central objective of the Cancer Evolution Focus Group at the Wissenschaftskolleg is to make progress in explaining cancer progression and therapeutic outcomes, as well as to develop novel approaches to cancer prevention and therapy, using evolutionary principles. Members of the Focus Group will be examining how Darwinian evolution has influenced cancers all the way from differences between species (Frédéric Thomas) and between individuals in the same population (Michael Hochberg) to differences within individuals in whom cancers have metastasized (Athena C. Aktipis) and within tumours themselves (Hanna Kokko, Urszula Hibner). Focus Group research will also examine the extent to which pathogens and evolved host resistance to them have impacted host populations (Paul W. Ewald). Finally, there will also be a more applied approach to the Focus Group, to see how Darwinian Medicine can be optimized to treat cancers prior to or at early stages of emergence (Michael

Hochberg). The planned products will be scientific articles for specialized audiences and a monograph (Carlo C. Maley).

Michael Hochberg

SCHWERPUNKTGRUPPE *URSPRUNG UND EVOLUTION*
AUFFÄLLIGER (GESCHLECHTS-)MERKMALE

Einige Gruppen von Organismen weisen eine bemerkenswerte Formenvielfalt auf. Die konventionelle Evolutionstheorie versucht, diese Vielfalt als eine Akkumulation kleiner Veränderungen über einen langen Zeitraum hinweg zu erklären. Wir wissen jedoch von einigen Merkmalen, dass sie einer sehr schnellen Evolution unterliegen und zwischen den Spezies extrem variieren, was oft das Ergebnis sexueller Selektion ist. Dabei paart sich nur eine bestimmte Gruppe von Männchen mit den Weibchen, und zwar aufgrund der besonderen Merkmale der Männchen. Solche auffällige Merkmale machen es möglich, die genetischen und ökologischen Faktoren zu bestimmen, die mit einer schnellen und extremen Veränderung des Phänotyps einhergehen. Auf diese Weise kann man grundsätzlich Erkenntnisse darüber gewinnen, wie neue Merkmale entstehen und sich im Verlauf der Evolution diversifizieren.

Mit der Entwicklung neuer Sequenzierungstechniken ist es jetzt möglich, in kurzer Zeit auf das Genom von fast jedem Organismus zuzugreifen. Durch den Vergleich mit verwandten Modellorganismen ist es auch möglich, jene Veränderungen im Genom zu ermitteln, die die Entwicklung neuer Merkmale zulassen oder beeinflussen könnten. Das Ziel dieser Schwerpunktgruppe besteht darin, Techniken der Bioinformatik zum Einsatz zu bringen und diese vergleichende Methode auf verschiedene Gruppen von Organismen anzuwenden, etwa bestimmte Fische, Vögel und Fliegen. Bei diesen gibt es annotierte Genome sowie neue Genomdaten von einer oder mehreren Spezies, die nicht als Modell fungieren und die eine neue Formenvielfalt zeigen – etwa leuchtende Farben, extreme Modifikationen der Kopfform oder ungewöhnlich lange Spermien. Von besonderem Interesse sind Fragen nach der Rolle der Genduplikation in der potenziellen Expression und in der Wahrnehmung von auffälligen Merk-

malen, nach der Rolle der Geschlechtschromosomen bei der Beeinflussung der Expression und Evolution solcher Merkmale und danach, inwiefern Genomkonflikte, die von sich selbst replizierenden Elementen – z. B. Transposonen – verursacht werden, an der Evolution der Formenvielfalt beteiligt sein können, indem sie die Veränderungen des Genoms und neue Genfunktionen erleichtern.

FOCUS GROUP: ORIGIN AND EVOLUTION OF EXAGGERATED TRAITS

Some groups of organisms exhibit a remarkable diversity of forms. Conventional evolutionary theory attempts to explain this diversity through the accumulation of small changes over long periods of time. However, some traits are known to undergo rapid evolutionary change and exhibit extreme variation among species, often as a result of sexual selection, in which only a subset of males mate with females as a consequence of traits they possess. Such exaggerated traits provide an opportunity to determine the genetic and ecological factors that accompany rapid and extreme phenotypic evolution, and therefore to gain fundamental insights into how novel traits arise and diversify over evolutionary time.

With the advent of new sequencing technology, it has become possible to obtain the genomic sequence of almost any organism in a short amount of time. Through comparison with related model organisms, it is also possible to identify changes in the genome that could permit or influence the development of novel traits. The aim of this focus group is to use bioinformatic techniques and apply the comparative method to several groups of organisms, including species of fish, birds, and flies, in which there are annotated genomes as well as new genomic data from one or more non-model species that exhibit novel morphological diversity, such as bright coloration, extreme modifications of the head, or unusually long sperm. Questions of particular interest will focus on the role of gene duplication in the potential expression and perception of exaggerated traits, the role of sex chromosomes in influencing the expression and evolution of such traits, and the degree to which genomic conflicts created by self-replicating

elements, such as transposable elements, may contribute to the evolution of morphological diversity by facilitating genomic change and novel gene function.

Gerald S. Wilkinson

SCHWERPUNKTGRUPPE *QUANTIFIZIERUNG*

In der Schwerpunktgruppe Quantifizierung geht es um die Analyse der Erstellung und Kommunikation von Zahlen. Die Gruppe setzt sich aus Historikern, Soziologen, Betriebswissenschaftlern und Anthropologen zusammen und untersucht die Macht der Zahlen in der Darstellung, Veränderung und Schaffung sozialer Welten. Mit Quantifizierung verbinden wir Objektivität, Präzision, Rationalität und zunehmend auch Verantwortlichkeit und Effizienz. Wie sind diese Assoziationen entstanden? Was führt zur Verbreitung von Quantifizierung? Welches Fachwissen und welche Ressourcen braucht man, um glaubwürdige Zahlen zu schaffen? Welche Macht sprechen wir den Zahlen zu und wie interagieren sie mit anderen Formen der Autorität? Auf welche Weise haben Zahlen die Art und Weise verändert, wie wir die Welt denken, wie wir Probleme lösen und uns politisch engagieren? Dies sind einige Fragen, mit denen sich unsere Mitglieder mit Blick auf unterschiedliche institutionelle Kontexte befassen wollen – angefangen von Nervenheilstätten in Europa, Bonitätsbewertungen in den USA bis zum Amt für Statistik in Indien und der Infrastrukturentwicklung im Qing-Reich.

FOCUS GROUP *QUANTIFICATION*

The Quantification Focus Group will analyze the production and communication of numbers. Comprised of historians, sociologists, accountants and anthropologists, this group will examine the power of numbers to represent, alter and create social worlds. We associate quantification with objectivity, precision, rationality and, increasingly, with accountability and efficiency. How did these associations come about? What causes quantification to spread? Which kinds of expertise and resources are needed in order to make credible numbers? What powers do we attribute to numbers and how do they interact with other kinds of

authority? In what ways have numbers changed how we think about the world, solve problems, and engage in politics? These are some of the questions our members will address in institutional contexts ranging from statistical offices in India, insane asylums in Europe, credit ratings in the United States, and the development of infrastructure in the Qing Empire.

Wendy Espeland

COLLEGE FOR LIFE SCIENCES

Mit dem *College for Life Sciences* will das Wissenschaftskolleg jungen Forscherinnen und Forschern aus den Lebenswissenschaften Gelegenheit geben, in der anregenden Atmosphäre eines internationalen und multidisziplinären Institute for Advanced Study zu arbeiten. Je nach persönlicher Situation soll der Aufenthalt den ausgewählten Junior Fellows dazu dienen, sich neu zu orientieren, Ideen zu entwickeln, Forschungspläne zu entwerfen, frühere Arbeiten oder empirische Daten zu überdenken – jedenfalls für eine beschränkte Zeit aus der Routine der täglichen Arbeit, aus dem vorgegebenen Rhythmus des Labors auszusteigen, Umschau zu halten, und dabei je nach Umständen mit Wissenschaftlern und Intellektuellen verschiedenster Fachgebiete und Traditionen zu interagieren.

Die Fellows des *College for Life Sciences*, die nach Begutachtung durch ein Expertengremium für eine Dauer von drei bis sechs Monaten eingeladen werden, sind im Übrigen den Fellows des Wissenschaftskollegs gleichgestellt und haben dieselben Rechte und Pflichten. Das Institut erwartet, dass sie für die Dauer ihres Fellowships in Berlin arbeiten und an der Gemeinschaft der Fellows teilnehmen (am internen wöchentlichen Colloquium sowie an den Mahlzeiten). Das Wissenschaftskolleg stellt Stipendium, Unterkunft und Dienstleistungen zur Verfügung.

Den Fellows des *College for Life Sciences* ist es freigestellt, in ihrer Gruppe zusätzliche Aktivitäten zu betreiben. Ein Wissenschaftlicher Koordinator steht bereit, Hilfestellungen und Anregungen zu geben, gemeinsame Unternehmungen zu organisieren und Verbindungen zu Berliner Institutionen und Kollegen zu schaffen.

COLLEGE FOR LIFE SCIENCES

With the *College for Life Sciences*, the Wissenschaftskolleg wants to provide early-career researchers in the life sciences the opportunity to work in the stimulating atmosphere of an international and multidisciplinary Institute for Advanced Study. Depending on the personal situations of the selected Junior Fellows, the residency should serve to gain new orientation, develop ideas, project research plans, rethink earlier work or empirical data – at any rate, to drop out of the routine of daily work and the predetermined rhythm of the laboratory, to take a look around, and thereby, in accordance with circumstances, to interact with scientists and intellectuals from the widest possible spectrum of fields and traditions.

Selected by a group of experts, the Fellows of the *College for Life Sciences*, are invited to come for three to six months. They are on equal terms with and have the same rights and duties as the Fellows of the Wissenschaftskolleg.

The institute expects them to work in Berlin for the duration of their fellowships and to take part in the community of Fellows (at the weekly internal Colloquium and at meals). The Wissenschaftskolleg provides the stipend, accommodation, and services.

The Fellows of the *College for Life Sciences* are free to engage in additional activities in their group. A Research Coordinator is ready to provide assistance and suggestions for organizing common undertakings and for establishing connections with Berlin institutions and colleagues.

Scientific Committee des College for Life Sciences

Raghavendra Gadagkar	Biologie	Bangalore
Shakti Lamba	Anthropologie, Biologie	London
Roger Nitsch	Molekulare Psychiatrie	Zürich
Nikolaus Rajewsky	Systembiologie	Berlin
Constance Scharff	Verhaltensbiologie	Universität
Paul Schmid-Hempel	Biologie	Zürich

Wissenschaftlicher Koordinator: Giovanni Frazzetto