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INSTITUTE FOR ADVANCED STUDY

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INHALTSVERZEICHNIS

11 VORWORT DES HERAUSGEBERS

ARBEITSBERICHTE

14 LIVING AND WORKING
AT THE WISSENSCHAFTSKOLLEG
NASR H. ABÛ ZAYD

18 OASE DER RUHE UND KONZENTRATION:
ARBEITEN AM WISSENSCHAFTSKOLLEG
HARTMUT BERGHOFF

22 LA MODERNITÉ DU ROMAN AFRICAIN
JUSTIN KALULU BISANSWA

28 ABOUT PEACE, WAR AND FREEDOM
MAARTEN C. BRANDS

33 « PROPOS DE TABLE »
ÉRIC BRIAN

45 ALL OF THE ABOVE
MARK R. COHEN

49 EVOLUTIONS
BARBARA L. FINLAY

54 TOASTY MEMORIES OF A COLD WINTER
TECUMSEH W. FITCH

- 59 PAST AND PRESENT
LYDIA GOEHR
- 63 ENTSCHEIDEN IN KRITISCHEN SITUATIONEN:
KOMPLEXITÄT UND RISIKO,
FEHLER UND SICHERHEIT
GESINE HOFINGER
- 69 A LONG BOUT OF SOME PAINFUL ILLNESS
JOHN HYMAN
- 72 A SECOND HELPING OF WIKO
ALEX KACELNIK
- 76 „WENN MAN NUR WEISS, WIE WENIG MAN WEISS,
KANN ES NOCH GUT KOMMEN“
CLAUDIA KAUFMANN
- 81 HEUREKAJAHР
IMRE KERTÉSZ
- 83 ONCE UPON A TIME
KÁZMÉR TAMÁS KOVÁCS
- 88 DREI UNGELÖSTE FRAGEN
REINHARD G. KRATZ
- 94 GRUNEWALD ENJOYED AND REMEMBERED
WALTER LAQUEUR
- 98 RETURNING TO BERLIN, RETURNING TO EUROPE
WALTER MATTLI

- 102 UMWEGE
HERBERT MOLDERINGS
- 107 WO IST BERLIN?
ISABEL MUNDRY
- 110 KAPITEL GRUNEWALD: EIN BERICHT
PÉTER NÁDAS
- 121 EMBODIED IN THE WISSENSCHAFTSKOLLEG
STEFANO NOLFI
- 124 WHAT DID I DO IN BERLIN?
LUIS PUELLES
- 129 REFLECTIONS ON A REMARKABLE YEAR
DAVID RAUBENHEIMER
- 133 OF BEES AND BIRDS, AND OF THE FLOWERS THEY
POLLINATE
MIGUEL RODRÍGUEZ-GIRONÉS
- 138 LOS TRABAJOS Y LOS DÍAS
HILDA SABATO
- 142 A BORGESIAN LIBRARY IN GRUNEWALD'S
LOCUS AMOENUS
BEATRIZ SARLO
- 146 ERFOLGREICHES SCHEITERN?
RAINER SCHMALZ-BRUNS
- 152 UN MICROCLIMAT NOMMÉ WIKO
ABDELAHAD SEBTI

156 THE ANTHROPOLOGY OF MEMORY
CARLO SEVERI

159 THE *LONGUE DURÉE* IN THE WESTERN INDIAN
OCEAN: TRANS-OCEANIC SOCIO-CULTURAL
INTEGRATION. A PROGRESS REPORT
ABDUL SHERIFF

164 OF BARNACLES AND CLIFFS
STEPHEN SIMPSON

168 TRADITION OF RIGHTS
MAHENDRA PAL SINGH

174 BETWEEN PAST AND FUTURE
GRAŻYNA SKAPSKA

179 THE PYGMALION EFFECT
VICTOR I. STOICHIȚA

183 TIME TO THINK THINGS THROUGH
GEORG STRIEDTER

189 IN HERACLEITOS' FOOTSTEPS
EÖRS SZATHMÁRY

191 BERLIN, AGAIN, FOR THE FIRST TIME
KATHLEEN THELEN

196 FAMILIAR DISTANCES AND UNEXPECTED
PROXIMITIES
BALÁZS TRENCSÉNYI

202 ENTANGLEMENTS
STEVEN VERTOVEC

205 KURZE CHRONIK ZUR UNZEIT
CORNELIA VISMANN

210 ORIGINS OF THE HISTORY OF SCIENCE
LEONID ZHMUD

215 WENN WEST UND OST, SÜD UND NORD
SICH TREFFEN: IN BERLIN
SUSAN ZIMMERMANN

VORTRÄGE UND SCHWERPUNKTE

222 TOWARD A HERMENEUTICS OF THE QUR'ÂN
NASR ABÛ ZAYD

233 THE EVOLUTION OF LANGUAGE
TECUMSEH W. FITCH

244 WAS HAT AUS PRIMATEN EINEN MENSCHEN
GEMACHT?
DIE MOTORISCHE INTELLIGENZ
GERHARD NEUWEILER

275 UNRAVELLING THE TANGLE OF NUTRITIONAL
COMPLEXITY
DAVID RAUBENHEIMER
STEPHEN SIMPSON

295 THE GEOMETRY OF HUMAN NUTRITION
STEPHEN SIMPSON
DAVID RAUBENHEIMER

SEMINARBERICHTE

318 VERTEBRATE VOCAL PRODUCTION *IN VIVO*
AND *IN SILICO*
TECUMSEH W. FITCH

323 THE LIMITS OF RATIONALITY
ALEX KACELNIK

327 MEMORY BETWEEN IMAGE AND NARRATIVE:
AN INTERDISCIPLINARY APPROACH
CARLO SEVERI

331 HUMAN RIGHTS AND BASIC NEEDS:
THEORY AND PRACTICE IN INDIA
MAHENDRA PAL SINGH

340 THE EUROPEAN CONSTITUTION FROM THE
INTERDISCIPLINARY PERSPECTIVE: PROMOTION
OF UNITY AND PROTECTION OF DIVERSITY
GRAŻYNA SKĄPSKA

345 THEORIZING GLOBAL MIGRATION:
HOW DOES TRANSNATIONALISM MATTER?
STEVEN VERTOVEC

VORWORT DES HERAUSGEBERS

In den Berichten der Fellows des Jahrgangs 2002/2003 fällt häufig das Wort „Paradies“. Es bezieht sich auf die Lebens- und Arbeitsbedingungen im Wissenschaftskolleg, die sich, was die Möglichkeit konzentrierten Forschens und intensiven Austauschs angeht, so vorteilhaft von den Normalbedingungen wissenschaftlichen Arbeitens abheben, dass der Rückgriff auf das biblische Bild nicht unangemessen erscheint.

Es fällt aber auch häufig das Wort „Irak“, und daran wird deutlich, dass dieses „Paradies“ nicht weltentzückt und weltvergessen ist, nicht jener gern mit der Wissenschaft in Verbindung gebrachte Turm, in dem man sich die reale Welt vom Leibe hält und eine wirklichkeitsferne konstruiert, sondern ein Aussichtsturm, der nur deswegen zum Paradies erklärt werden kann, weil er seinen Bewohnern besonders gute Beobachtungsbedingungen bietet.

Das Beobachtete muss freilich an die Welt zurückgegeben werden, und deswegen spielt das Buch, das man sich vorgenommen hat, in allen Berichten eine große Rolle. Hat der Plan sich als tragfähig erwiesen im Diskurs mit den anderen Fellows und im Vergleich mit den Erkenntnissen anderer Disziplinen? Und natürlich: Ist es fertig geworden oder nicht? Während der eine eingestehen muss: „Alas, still unfinished“, kann der andere verkünden: „I came to write a book and I wrote it“.

Das heißt freilich nicht, dass in den Augen des Wissenschaftskollegs nur der zweite seine Einladung gerechtfertigt hätte. Manchen hat der Irak-Krieg zeitweilig aus dem Paradies getrieben, zu Kommunikationen und Demonstrationen, und manchem sind im Para-

dies Erkenntnisse zugewachsen, die nicht in einem Jahr zu verarbeiten waren. Im Ausichtsturm hat sich der Horizont erweitert. Das bekommt dem Buch, aber es kommt dann eben etwas später.

Dieter Grimm

Arbeitsberichte



LIVING AND WORKING AT THE
WISSENSCHAFTSKOLLEG
NASR H. ABÛ ZAYD

Born in 1943 in Tantâ, Egypt. 1981, Ph.D. in Arabic and Islamic Studies, Department of Arabic Language and Literature, Cairo University. 1982–95, Assistant Professor, Associate Professor and Professor in the same department. 1995–, Visiting Professor at the University of Leiden, The Netherlands. Major publications: *Mafhûm an-nas: Dirasa fi ūlām al-Qur'ân*. Cairo, 1410/1990. *Ein Leben mit dem Islam* (Life with Islam). Autobiography edited by Navid Kermani, translated by Sharifa Magdi. Freiburg, 2002. *Politik und Islam: Kritik des religiösen Diskurses*, translated by Cherifa Magdi. Frankfurt/Main, 1996. – Address: INIS, Leiden University, Nonnensteeg 1–3, 2311 VJ Leiden, Netherlands.

During the period from October 2002 to February 2003, while a Fellow at the Wissenschaftskolleg zu Berlin, I was involved in so many academic activities. First and most of all, I made some progress on my initial research project “Towards Qur'anic Hermeneutics”. This progress is expressed in two papers.

The first paper is “The Dilemma of the Literary Approach to the Qur'ân”, now published in the *Journal of Comparative Rhetoric*, the American University at Cairo, last issue 2003. The major intention of this paper is to discuss some of the difficulties challenging the literary approach to the Qur'ân, the approach that focuses on the Qur'ân as basically a literary text. This approach was invoked by Amîn al-Khûlî (1895–1966) as the only approach capable of explaining the inimitability, *i'jâz*, of the Qur'ân. His point is that the Arabs' acceptance of Qur'ân, and accordingly the acceptance of Islam, was based on recognizing its absolute supremacy over any human text. In other words, the Arabs accepted Islam on the

basis of evaluating the Qur’ân as a literary text. The literary method should, therefore, supersede any other religio-theological, philosophical, ethical, mystical or judicial approach. The data analyzed in this paper is the discussion that took place in the late forties in Egypt around Muhammad Ahmad Khalafallah’s (1916–98) Ph.D. thesis, presented to the Department of Arabic Language and Literature, Faculty of Letters, Fu’âd al-Awwal University (Cairo University now) in 1947 about “Al-fann al-qasâsî fi l-Qur’ân” (The Art of Narration in the Qur’ân). The first section of the paper traces the literary approach to the Qur’ân back to the classical discussion of the doctrine of inimitability, *i’jâz*, in order to analyze the impact of the traditional elements on the modern dispute about the literary approach. The modern Islamic reformation movement, which, as is commonly known, started in the middle of the time of European military and political domination of the Muslim world, is the focus of the second section. Because modernity was imposed from above, either by the colonial power or by the post-colonial political regimes, some of the European cultural and philosophical elements touched upon religious matters, and thus provoked polemical as well as apologetic reaction from Muslim scholars. The major issue raised in “Al-fann al-qasâsî”, for example, is the historical authenticity of the events mentioned in the Qur’ân. This issue is present in a great many articles in the first edition of the *Encyclopaedia of Islam*, whose Arabic translation appeared in the early thirties in Cairo. The last section presents the basic presupposition and conclusions of Khalafallah’s thesis in the light of the context analyzed in both the first and the second sections.

I initially delivered my second paper in the form of a public lecture in the context of the Wissenschaftskolleg colloquium on January 15, 2003. Afterward, it was elaborated and updated in the form published in this volume.

Besides concentrating on my own research project, I was not only eager to broaden my knowledge and to expand my horizons by communicating with my Co-Fellows during meals and by participating in the weekly colloquium, I also tried to be part of the German academic community in general and that of Berlin in particular. Below is a list of some of my activities:

October 29, 2002 – November 1, 2003, Hagen

Participated in the “International Conference: Restless Culture – Potentials of Utopian Thought” by delivering a lecture “Utopian Thought in Classical Islamic Culture”

November 21, 2003, Berlin

Delivered a lecture and chaired a seminar at the European College of Liberal Arts (ECLA) on “Modern Islamic Thought”

- November 24, 2003, Berlin, Schaubühne am Lehniner Platz
Participated in a Panel Discussion with Navid Kermani on “Islam in the New Post-Modern Context”
- December 5–7, 2003, House of World Cultures, Berlin in co-operation with the Free University
Participated in a panel discussion in the context of the conference “Religious Authorities in Middle Eastern Islam”
- December 12–15, 2003, Wissenschaftskolleg zu Berlin
The Second Workshop in the “Modernity and Islam Working Group’s Project: Jewish/Islamic Hermeneutics ‘Mysterium Tremendum: Horror and the Aesthetics of Religious Experience’”
- January 15, 2003
Delivered a public lecture within the Fellow Program at the Wissenschaftskolleg zu Berlin, “Towards Hermeneutics of the Qur’ân”. This lecture appears, updated and elaborated, in this volume.
- January 29–30, 2004, Tübingen
Delivered a lecture and organized a seminar at the Faculty of Jewish Studies, Tübingen University
- February 4, 2003, Wissenschaftskolleg zu Berlin
Delivered a presentation about “Islamic Human Rights and Globalization” within the Fellows’ project “Globalization and Economic Politics”
- February 7, 2004, The Arab Cultural Organization in Berlin
Delivered a lecture in Arabic followed by public discussion about “Islam in Europe”
- February 11, 2004, Musical Qur’ân Recitation at the Wissenschaftskolleg zu Berlin
A farewell presentation of “The Artistic and Poetic Dimension of the Qur’ân”: musical recitation of the Qur’ân’s chapter 55 (The Compassionate, Al-Rahmân)

In addition, I regularly participated in the two AKMI (Arbeitskreis Moderne und Islam) Berlin Seminars, Cultural Mobility and Jewish and Islamic Hermeneutics, sometimes as a presenter and most of the time as a discussant.

It is obvious how fruitful the experience of living and working in an academic context like the Wissenschaftskolleg zu Berlin always is. It goes without mentioning that, without the great and the enthusiastic help provided by all the working staff in every corner of the institute, the richness of every Fellow experience could not be maintained.

I wish I could spend the whole period of ten months instead of only the five months I was able to stay. Certain practical circumstances did not permit me to stay longer. But now I have become a permanent friend of the institute and am very proud of this friendship.



OASE DER RUHE UND KONZENTRATION: ARBEITEN AM WISSENSCHAFTSKOLLEG HARTMUT BERGHOFF

Direktor des Instituts für Wirtschafts- und Sozialgeschichte der Georg-August-Universität Göttingen. Geboren 1960 in Herford, Westfalen. Studium der Geschichtswissenschaft, Wirtschaftsgeschichte, Germanistik und Anglistik an den Universitäten Bielefeld, Cambridge, London School of Economics sowie an der TU und FU Berlin. Promotion an der Universität Bielefeld 1989, Habilitation an der Eberhardt-Karls-Universität Tübingen 1996. Nach Lehrstuhlvertretungen in Tübingen und an der Humboldt-Universität zu Berlin 2001 Berufung auf den Lehrstuhl für Wirtschafts- und Sozialgeschichte in Göttingen. Lehrbeauftragter an der Wissenschaftlichen Hochschule für Unternehmensführung Koblenz. Wichtigste Publikationen: *Englische Unternehmer 1870–1914: Eine Kollektivbiographie führender Wirtschaftsbürger in Birmingham, Bristol und Manchester*. Göttingen, 1991. *Zwischen Kleinstadt und Weltmarkt. Hohner und die Harmonika 1857–1961: Unternehmensgeschichte als Gesellschaftsgeschichte*. Paderborn u. a., 1997. Hrsg. *Konsumpolitik: Die Regulierung des privaten Verbrauchs im 20. Jahrhundert*. Göttingen, 1999. *Fritz K.: Ein deutsches Leben im 20. Jahrhundert*, mit Cornelia Rauh-Kühne. Stuttgart, 2000. – Adresse: Georg-August-Universität Göttingen, Institut für Wirtschafts- und Sozialgeschichte, Platz der Göttinger Sieben 5, 37073 Göttingen. E-Mail: Berghoff@uni-goettingen.de.

Nach aufreibenden Semestern, die mit dem Neuaufbau eines Universitätsinstituts ausgefüllt und wissenschaftlich nur begrenzt kreativ waren, bot mir das Wissenschaftskolleg ein Refugium für konzentriertes, weitgehend ungestörtes Arbeiten. Auch wenn mich viele Göttinger Verpflichtungen bis in den Grunewald hinein verfolgten und das Telefon an

manchen Tagen keine Ruhe geben wollte, blieben die zehn Monate ein Geschenk relativer Ruhe und Konzentration.

In meinem Kollegjahr war es mir möglich, ein lang geplantes und in einigen Vorskizzzen bereits begonnenes Buch fertigzustellen, das die wichtigsten Ansätze und Ergebnisse der Unternehmensgeschichtsschreibung der letzten Jahrzehnte zusammenfasst. Unternehmen sind zentrale Bausteine der modernen Welt, denen Historiker aber oftmals viel zu wenig Bedeutung beimessen. Daher habe ich in diesem Buch Unternehmen in den Mittelpunkt gestellt, die Vielschichtigkeit ihrer Geschichte und die Vielzahl der Anknüpfungspunkte zu zentralen Themen der Geschichts- und Wirtschaftswissenschaften herausgearbeitet.

Unternehmen im Grunewald? Auf den ersten Blick kann man sich kaum einen Ort in dieser Welt vorstellen, der ferner von der industriellen Produktion und den Mechanismen kapitalistischer Märkte entfernt ist. Jedoch trügt dieser Eindruck. Der im Kaiserreich aus dem Boden geschossene Stadtteil wäre ohne die Industrialisierung anderer Teile Berlins und Deutschlands nicht denkbar. „Rus in urbe“ lautete der bewusste Gegenentwurf zur industriellen Welt, so dass beides eng miteinander verkoppelt ist. Oft kam ich auf dem Weg von meiner Wohnung in der Heydenstraße zum Kolleg an Villen vorbei, die einst wichtigen Unternehmern gehört hatten, die z. T. auch in meinem Buch vorkommen.

Das Manuskript war im Juni 2003 fertig – später und umfangreicher, als ich es geplant hatte. Da blieb nur begrenzt Zeit für mein neues Projekt, das ich gerne in diesem Jahr weiter vorangetrieben hätte, nämlich die deutsche Konsumgeschichte des 20. Jahrhunderts. Immerhin gelang es mir, einige wichtige Fachzeitschriften zu sichten und konzeptionelle Vorarbeiten zu verrichten.

Daneben befasste ich mich in diesem Jahr mit Fragen der Vertrauensgenese und des Risikomanagements in der Industrialisierung. Aus diesem Komplex erwuchsen zwei Aufsätze, deren Hauptthesen ich im Dienstagskolloquium des Wissenschaftskollegs zur Diskussion stellen durfte. Es war eine verblüffende und inspirierende Erfahrung, mit Biologen, Kunsthistorikern, Politologen und Vertretern anderer Disziplinen über Wirtschaftsgeschichte zu debattieren. Das Wissenschaftskolleg bietet die seltene Chance, die an den Universitäten immer stärker auseinander driftenden Fächer zusammenzuführen und die verschütteten oder auch nur übersehnen Synergiepotentiale zu bergen. Aus unzähligen Gesprächen bei Tisch, während der Kolloquien und in diversen Treffen mit Kollegen am Wissenschaftszentrum Berlin und an den Berliner Hochschulen nehme ich viele Anregungen mit, die möglicherweise zu einem späteren Zeitpunkt in neue Projekte und Kooperationen einmünden werden.

Schließlich nutzte ich die Zeit, um zusammen mit meinem Berliner Kollegen und Freund Jakob Vogel von der Technischen Universität eine Tagung zum Thema „Wirtschaftsgeschichte als Kulturgeschichte“ vorzubereiten und im Februar 2003 durchzuführen. Auch dieses Vorhaben war in gewisser Weise vom Geist des Wissenschaftskollegs geprägt, denn wir haben Kultur- und Wirtschaftshistoriker, Ökonomen, Theologen, Ethnologen, Soziologen und Technikhistoriker an einen Tisch gebracht und über Gemeinsamkeiten und Unterschiede unserer Forschungen diskutiert.

Publikationen des akademischen Jahres 2002/03

- Zusammen mit Barbara Korte u. a., Hrsg. *The Making of Modern Tourism: The Cultural History of the British Experience, 1600–2000*. Houndsills und New York, 2002.
- Zusammen mit Barbara Korte. „Britain and the Making of Modern Tourism.“ In ebd., 1–20.
- „From Privilege to Commodity: Modern Tourism and the Rise of the Consumer Society.“ In ebd., 159–179.
- Zusammen mit Hans-Jürgen Gerhard. Artikel „Kurt Birrenbach“. In *Biographisches Handbuch der Mitglieder des Deutschen Bundestages 1949–2001*, herausgegeben von Ludolf Herbst und Rudolf Vierhaus, 69. Band 1. München, 2002.
- „Unternehmensgeschichte als Gesellschaftsgeschichte: Konzeptionelle Grundsatzüberlegungen am Beispiel des Aufstiegs Hohners vom dörflichen Geheimgewerbe zum kleinstädtischen Großunternehmen.“ In *Kulturalismus, Neue Institutionenökonomik oder Theorienvielfalt: Eine Zwischenbilanz der Unternehmensgeschichte*, herausgegeben von Jan-Otmar Hesse, Christian Kleinschmidt und Karl Lauschke, 243–251. Essen, 2002.
- „Der Berliner Kapitalmarkt im Aufbruch (1830–1870).“ In *Geschichte des Finanzplatzes Berlin*, herausgegeben von Hans Pohl, 53–102. Frankfurt/Main, 2002.
- „Wozu Geschichte? Vom Sinn und Nutzen der Unternehmensgeschichte.“ In *Signale. WHU Quarterly* 17, 2 (2002): 3–6.
- “‘Times Change and We Change with Them.’ The German Advertising Industry in the ‘Third Reich’: Between Professional Self-Interest and Political Repression.” *Business History* 46, 1 (2003): 128–147.
- Moderne Unternehmensgeschichte. Eine themen- und theorieorientierte Einführung*. Paderborn, 2004.

„Vertrauen als ökonomische Schlüsselvariable: Zur Theorie des Vertrauens und der marktwirtschaftlichen Produktion von Sozialkapital.“ In *Die Wirtschaftsgeschichte vor der Herausforderung durch die Neue Institutionenökonomie*, herausgegeben von Clemens Wischermann und Karl-Peter Ellerbrock. Dortmund, 2004 (im Druck).

Zusammen mit Jakob Vogel, Hrsg. *Wirtschaftsgeschichte als Kulturgeschichte*. Frankfurt/Main, 2004 (im Druck).

„Die Zähmung des entfesselten Prometheus? Die Generierung von Vertrauenskapital und die Konstruktion des Marktes im Industrialisierungs- und Globalisierungsprozeß des 19. Jahrhunderts.“ In ebd. (im Druck).

Und sonst? Auch privat war es ein intensives Jahr. Gut tat es mir, wieder in Berlin leben zu können, in der für mich faszinierendsten Stadt Europas. Besonders nach langen Jahren in den akademisch-provinziellen Monokulturen Tübingens und Göttingens empfand ich die bunte Vielfalt der Metropole an der Schnittstelle von West- und Osteuropa als Wohltat.

Mein aufrichtiger Dank geht an Dieter Grimm als den Rektor dieser wunderbaren Institution und an alle seine Mitarbeiter. Es gehört zu den großen Privilegien der Fellows, freundliche und zugleich effiziente Unterstützung zu erfahren, ohne dafür in einen Konkurrenzkampf eintreten zu müssen. Dieses Gefühl des entspannten Arbeitens hat mich in besonderer Weise beflügelt. Das Wissenschaftskolleg war nicht ein Austragungsort von Status- und Mittelverteilungskämpfen, sondern ein Ort wissenschaftlichen Arbeitens, eine Oase der Ruhe und Konzentration. Institutionen werden von Menschen zum Leben erweckt und geprägt. Daher empfand ich die Menschen am Wissenschaftskolleg, die Mitarbeiter und die anderen Fellows, als den größten Reichtum. Zu einigen sind Freundschaften entstanden, die aufrechtzuerhalten ich mir sehr wünsche, auch wenn die Gefahr absehbar ist, bei unseren Zusammentreffen im Rückblick auf unser Fellowjahr in nostalgischen Gefühlen zu versinken.



LA MODERNITÉ DU ROMAN AFRICAIN

JUSTIN KALULU BISANSWA

Justin Kalulu Bisanswa est né le 3 avril 1959 à Kasongo, au Kivu, à l'est du Zaïre, redevenu République démocratique du Congo. Il enseigne à l'Université Laval, au Québec (Canada), où il est titulaire de la Chaire de recherche du Canada en Littératures africaines et Francophonie. Justin Bisanswa est docteur en Philosophie et Lettres de l'Université de Liège (Belgique), section de Philologie romane. Il est chercheur au CELAT, fellow de la Fondation Alexander von Humboldt, fellow de Stellenbosch Institute for Advanced Study. Il a été professeur-chercheur à l'École des Hautes Études en Sciences Sociales à Paris, à l'Université de Liège, à l'Université Catholique de Louvain, à l'Université de Bayreuth. Il est invité dans plusieurs universités pour y tenir des conférences et y animer des séminaires. Justin Bisanswa a fait ses études universitaires à l'Institut Supérieur Pédagogique de Bukavu (au Kivu), où il a enseigné pendant de nombreuses années. — Adresse : Département des Littératures, Faculté des Lettres, Université Laval, Sainte-Foy, Québec G1K 7P4, Canada.

« Pergite, Piérides ... » Ces mots légers commencent la sixième églogue de Virgile, donnant son élan au poème. Et le poète raconte comment de jeunes gens enchaînent le Vieux Silène et l'obligent à chanter. Allez, Piérides ... A ces mots, toujours il me semble voir, comme de jeunes danseuses sur un théâtre, accourir toutes ensemble les grâces et les muses pour rendre à l'univers sa vie et sa beauté ...

Chaque fois que je prenais un taxi du petit aéroport de Berlin-Tegel au 19 de la rue Wallot, le chauffeur, perplexe, était obligé de consulter son plan de la ville, et découvrait une petite rue, dans un des quartiers très chics de Berlin, paisible, qui débouchait à

Rathenauplatz où deux jeunes officiers, membres du mouvement d'extrême droite « Organisation Consul », avaient assassiné, le 24 juin 1922, le ministre des Affaires étrangères, Walter Rathenau, juif, industriel, homme politique et écrivain, ami du Prix Nobel Gerhart Hauptmann, artisan de la République de Weimar et de l'Allemagne de l'après-Versailles. Son père avait fondé la fameuse entreprise allemande d'électricité AEG ...

La maison a l'air un peu lugubre en hiver (aurait-elle conservé certains traits de l'ancienne caserne militaire qu'elle fut à l'époque de l'occupation de la ville par les troupes occidentales ?), mais le va-et-vient des occupants lui donne une vitalité singulière dans cette rue d'immeubles cossus où l'on aperçoit à peine un résident. Et puis, dès qu'on y pénètre, cette maison vous accueille d'un sourire dès la réception ; chaque agent de cette institution vous met à l'aise, vous rend le séjour agréable afin que vous accomplissiez votre travail de recherche dans les meilleures conditions possibles. Je n'oublierai jamais le pragmatisme et l'efficacité de cette bibliothèque, liés à l'amabilité de ses agents. En partant pour Berlin, je me demandais si j'y trouverais des livres écrits en français. En y arrivant, j'ai compris qu'il suffisait de remplir un bon de commande, et la bibliothèque, en très peu de temps, vous procurait le livre, quelle que soit sa provenance !

Et puis j'ai rencontré, dès mon arrivée dans cette maison, le responsable des activités académiques, Reinhart Meyer-Kalkus, avec qui j'ai partagé, sept mois durant, un vice qui nous est commun à l'un et à l'autre, à savoir l'amour des avant-gardes littéraires. Nous avons à plusieurs reprises parlé de Barthes, de Bakhtine, de Todorov, de Zumthor. Avec cet homme assez timide, comme moi-même, mais galant et toujours très élégant, dandy à l'occasion, j'ai discuté de l'avenir de l'Afrique, des rapports entre les nations, à l'occasion de la guerre d'Irak, de la guerre en République démocratique du Congo, etc. J'ai eu également l'occasion de rencontrer fréquemment Martin Garstecki qui s'occupait des questions administratives des fellows. Dans cette « maison » où chaque chose est à sa place et où chaque agent traite des questions relatives à ses fonctions sans se référer à quelqu'un d'autre, une ombre règne partout, celle de l'Administrateur de cette institution, Joachim Nettelbeck, que l'on croise rarement dans l'immeuble, homme toujours pressé, modeste et très discret, qui déclare ne rien savoir des questions scientifiques, mais esprit ouvert, suivant attentivement toutes les conférences des fellows, les commentant occasionnellement ...

On n'a d'autre activité dans cette maison que de se consacrer à la recherche et de la rêver tout haut. Les responsables de l'institution font preuve de beaucoup d'ouverture et de tolérance dans la communication entre les cultures, naviguant, chaque année, entre au moins trois langues et diverses cultures. A leur manière, ils œuvrent au monde de demain, que

chacun d'entre nous appelle de tous ses vœux, mais qui, profondément, fait peur à chacun à cause du repli et de la méfiance entre les cultures : le monde du multiculturalisme. Les 40 fellows du Wiko métaphorisent cette diversité culturelle et constituent un microcosme qui, tout en travaillant à la promotion de l'esprit et de la science, devrait également témoigner de la promotion de l'homme.

Il y aurait une autre manière de réfléchir au sujet de ce microcosme : examiner, à travers les fellows, les rapports entre les nations et les peuples, les relations entre les universités. Il est curieux que, dans ce petit monde d'hommes de science, le chercheur n'existe que par le nom de son université, par le prestige qui s'y rattache, si ce n'est par la puissance de son pays. Chaque chercheur est demeuré, malgré tout, la chair de la chair de son pays. L'identité, ici, est donc essentiellement essentialiste ... chacun se prenant pour le centre du monde ... au lieu de retrouver cette liberté de pensée et de l'expression de la pensée. J'ai appris de Nietzsche que les vraies pensées coûtaient toujours. Et dans le second tome de *La Volonté de Puissance* de Nietzsche, je lis : « Ne pas confondre : les comédiens périssent faute d'être loués, les hommes vrais faute d'être aimés » (p. 350). Confidence d'autant plus tragique qu'elle est plus discrète. Mais l'essentiel est ailleurs ... Passons !

Mon séjour au Wissenschaftskolleg m'a permis de faire avancer nombre de projets, dont deux livres, l'un sur la modernité de la littérature africaine, l'autre sur l'historiographie du Kivu depuis les guerres dites de libération en République démocratique du Congo.

Je me suis efforcé de retracer l'aventure critique du roman africain et j'ai été amené à approfondir le concept de « modernité » qui implique une relecture et une réévaluation de ce parcours critique. En « re-prenant » ce concept, on s'expose d'abord aux impressions douloureuses que causa durant de longues années une formule souvent martelée de toutes parts sur un ton qui, chez certains, rappelle celui des brigades rouges : « notre modernité », formule qui consiste à se considérer comme le nombril du monde, et qui revient à revendiquer pour une certaine culture (si elle existe) l'idée même de Progrès, une avancée théorique par rapport à toutes les autres, lui permettant de juger et trancher de l'ensemble des cultures et des littératures avec une autorité inquisitoriale et sans appel. Il m'a paru que, dans le slogan « notre modernité », il y avait une forte dose de narcissisme juvénile, de peur de l'Autre, de la merveilleuse variété vivante de l'humanité qui s'est manifestée dans le temps autant que dans l'espace. La peur, en somme, du « voyage », voire de la quête dans le temps dont la connaissance des littératures étrangères est le plus fécond vecteur. L'utopie d'un « savoir absolu », en fermant cette porte, ferait du centre et des modernes les prisonniers de leur propre désert.

Le livre examine la trajectoire de cette aventure critique, de Jacques Chevrier et Liliane Kesteloot aux analyses actuelles. Reprendre directement ces critiques anciennes est ainsi une manière de décaper une histoire, de retrouver un discours initial et de l'établir en une nouvelle relation à notre présent. L'Afrique apparaît toujours comme une notion politique. Les points d'articulation de la critique africaine, après avoir tourné autour des concepts creux, très savants, tels que la tradition, la parenté, l'ethnie (ou l'ethnicité), l'oralité, la religion traditionnelle, le rythme africain, se cristallisent sur les notions controversées suivantes :

1^{er} élément d'articulation : des monographies de la littérature qui suivent l'ordre chronologique et interprètent la littérature en fonction des temps historiques linéaires (avant l'indépendance, après l'indépendance). Ou des études thématiques répartissant la littérature selon un critère racial, géographique, national.

2^{ème} élément d'articulation : les notions de centre et de périphérie, les littératures africaines étant périphériques et gravitant autour du Centre parisien qui les légitime grâce à la langue et à l'institution.

3^{ème} élément d'articulation : postcolonialisme et francophonie.

4^{ème} élément d'articulation : une intertextualité conçue comme étude des sources et des influences et dont la finalité est d'étaler l'illusion de l'érudition de l'analyste, étant donné que cette érudition se réduit à la connaissance de la littérature et de la culture de l'Empire.

5^{ème} élément d'articulation : le champ littéraire, c'est-à-dire une reprise et un plaquage des théories de Bourdieu et leur application aux littératures africaines, sans se donner la peine d'être attentif au contexte d'émergence qui montre déjà l'inefficacité de la théorie de Bourdieu.

6^{ème} élément d'articulation : les genres. On insiste sur l'influence de l'oralité et de la tradition qui explique le mélange des genres qu'on découvre dans le roman.

La critique lit généralement le texte africain à la lumière du contexte sociopolitique et économique africain, la déréliction générale du continent expliquant le chaos et l'absurdité de la narration. En somme, le texte africain apparaît comme un prétexte à partir duquel le critique explique l'homologie avec les cultures africaines violées par l'incursion coloniale. La tâche est donc de repérer l'oralité, de « faire ressortir la continuité relative du discours traditionnel au discours écrit » (Mohamadou Kane, 1982 : 340). L'ancêtre qu'on donne au roman africain est l'oralité, le roman étant une métonymie de l'écriture, voire de l'Occident, de sa supériorité. Mais ce concept de l'oralité, autour duquel se concentre la critique

littéraire africaine depuis de nombreuses années, est chargé idéologiquement. L'oralité est l'espace de l'autre, elle est ethnologique : elle est la communication propre à la société sauvage ou primitive ou traditionnelle. Sa spatialité est le tableau synchronique d'un système sans histoire. L'altérité est la différence que pose une coupure culturelle. On suppose une parole qui circule sans savoir à quelles règles silencieuses elle obéit. Il appartient au roman, « produit occidental », d'articuler ces lois dans une écriture et d'organiser en tableau de l'oralité cet espace de l'autre. Le langage oral attend, pour parler, qu'une écriture le parcourt et sache ce qu'il dit. Même si elle en inverse une fois de plus le sens et la morale, la « Leçon d'écriture », dans *Tristes tropiques* (Lévi-Strauss, 1955 : 337–349), répète le schème qui organise la littérature ethnologique et qui engendre, de loin en loin, une théâtralisation des actants en jeu. Les chemins de l'écriture combinent le pluriel des itinéraires et le singulier d'un lieu de production. Signifiée par une conception de l'écriture, cette critique reconduit la pluralité des parcours à l'unicité du foyer producteur. Tout montre que l'autre revient au même. La « voix africaine » devient la « parole insensée » qui ravit le discours occidental, mais qui, à cause de cela même, fait écrire indéfiniment la science productrice de sens et d'objets. Un dire arrête le dit – il est rature et biffure de l'écrit – et contraint à en étendre la production : il fait écrire.

J'ai, d'autre part, examiné comment s'esquisSENT concrètement les formes de pareils discours et, dans le discours lui-même, les rapports du « modèle » et ses autres au niveau de l'institution académique. Nous connaissons les expressions – et leur fortune – telles que « Études culturelles », « Études subalternes », « Théories postcoloniales »... Où donc situer ces études dans la géographie des sciences sociales et des humanités ? Au lendemain de mai 1968, elles constituent un espace mixte où des disciplines diverses entrent en dialogue. Elles se distinguent des pratiques traditionnelles par leur allure prétendument transdisciplinaire et, surtout par l'illusion de leur engagement politique. Celui-ci s'ancre dans les conditions de la cité moderne et entend prendre en relais les contradictions et variations des rapports sociaux de production où la trinité conceptuelle de « classe », « genre », « race » opérerait en paradigmes majeurs et comme points de référence normatifs. Pareille option étonne, quelles que soient les raisons qu'elle offrait de revoir et de reformuler les balises ayant fait leurs preuves dans les sciences humaines. En effet, les courants canalisés sont trop variés pour que le champ ne se disloque pas, et ce, dès le départ.

Le marxisme semble un point de ralliement en cette configuration. A ce titre, il indique peut-être un futur potentiel. Les théories postcoloniales, après en avoir subi l'influence, semblent avoir adouci leurs voix marxistes face à l'attaque et surtout aux stratégies mises

au point par des universitaires convaincus de ramener les grandes institutions scientifiques aux principes d'une neutralité idéologique. De toutes façons, ces géographies disciplinaires aux contours difficiles à nommer avec précision ouvrent l'essentialisation de quelques concepts utiles (classe, genre, race) comme opérateurs absous en des classifications définitives. C'est peut-être tout le domaine des « Études culturelles », « Théories postcoloniales » et « Études subalternes » qu'il faudrait reprendre, en étant libre de tous dogmes culturels et de leurs capitaux intellectuels et autres.

Cependant, ce que ce signe indique en son nom est d'une clarté banale et navrante. Ces études caractérisent un statut de subordination, ou plutôt le sujet employé est défini comme inférieur, second, sous-fifre. Une question s'ensuit, presque automatiquement : que signifie donc pour un champ d'études de porter le postcolonialisme comme emblème ? Pareil choix peut, certes, en son symbolisme, attiser la curiosité, et donc éveiller et soutenir l'attention. Mais, en s'instaurant expressément comme espace « inférieur » ou « infériorisé », n'articule-t-il pas, fondamentalement, un argument politique et, de ce fait, ne plaide-t-il pas pour une déconstruction des domaines classiques ?

Quelles normes concevoir par conséquent afin de repenser un vrai dialogue des cultures ? Plus exactement, à quelles conditions et avec quels outils conceptuels mettre en contact les legs de l'humanisme des Lumières avec les invocations contemporaines (celle de la contre-mémoire d'un Foucault ; de la déconstruction positive d'un Derrida) et les vœux insistants venant du Tiers-Monde ? Les manipulations sémantiques sont susceptibles de perturber et une logique et un dialogue. Le simple usage d'un adjectif comme postcolonial pour qualifier une théorie ou une démarche scientifique peut se vouloir cathartique, mais à quel prix et que de malentendus n'entraîne-t-il ! Nous devons donc nous opposer à la raison néo-coloniale, même si nous sommes héritiers de cette « raison coloniale ».

Pendant que j'achève d'écrire ces lignes, réinventant mon agréable séjour au Wissenschaftskolleg à Berlin, plus de trois mois après, le soleil s'est couché derrière Sainte-Foy, et le ciel devant moi, du côté du Vieux Québec, fait une dernière fête. Comme je m'émerveillais, les gens autour de moi m'ont dit : « C'est le chemin de Saint Jacques. Il fera beau demain. » Savez-vous ce qu'est le chemin de Saint Jacques ? C'est, au-dessus de la campagne qui s'assombrit, du côté de l'Orient, tout près de l'horizon, de grandes écharpes grises qui, en montant vers le zénith, deviennent plus légères, s'effrangent, se brisent, se font nuages et tracent à travers le ciel un beau chemin doré, vers l'Occident où vient de tomber le soleil.

Que vive à jamais le Wissenschaftskolleg de Berlin !



ABOUT PEACE, WAR AND FREEDOM MAARTEN C. BRANDS

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Somehow – was it a historian's luck? – I happened to visit several places at very critical moments: in 1961 I was in Berlin a couple of months before the Wall was built, and again shortly after traffic and communication between West and East Berlin had become very difficult; Berkeley, Calif. at the heyday of the student revolution, Prague in August 1968 a few days before the communist brethren invaded, Warsaw just before the Polish president declared martial law. But the most awesome and impressive was being in Manhattan in September 2001. Most Europeans only witnessed the “events” from afar, and for them it's difficult to understand what they meant and still mean to many Americans.

When we arrived in Berlin in October 2002 I expected that the German government would not disappoint us in organizing excitement and fascination. And certainly it was

fascinating to watch how the year at the Wissenschaftskolleg became a period in which many new orientations have been tested in the laboratory of German *Außenpolitik*; above all it was intriguing to see how the transatlanticism of the last fifty years was being remodeled. Not all the tests or experiments were, as far as I could observe them, completely successful, but that is after all characteristic of most experiments.

The Wissenschaftskolleg is an excellent institution, with a very good staff; especially the library service has been a great help to me. (But why did so many new books have to come from Bavarian or other southern libraries? I hope the Berlin libraries will again receive funds to buy those books as well.)

I have found the contacts with our Asian, African and Eastern European colleagues in particular quite rewarding and a help in overcoming the well-known EU inward-looking provincialism.

For us, Berlin in general is now a comfortable place to live in. But it took us some time to get emotionally adapted to this city, overloaded as it is with countless symbols that refer to extremes: from the highest human achievements in the arts and science to the worst type of 20th-century suppression of human freedom.

In the quiet, unpolitical Wiko environment, I tried during this hectic year to deal with three problem fields of international politics:

1) General aspects of the opaque European integration process, 2) The present transatlantic crisis, and 3) Recent changes in German foreign policy.

1. The Manifold Paradoxes, Inconsistencies, Self-Contradictions, and Absurdities of European Integration

What makes it so hard to get a grip on “Europe”, why are there so many misperceptions of the EU? So many misunderstandings, even among so-called experts? It is because of the many inconsistencies, paradoxes, and even absurdities that have characterized the EU until now. These not only make it hard to understand what exactly is going on, they also interfere with selling the project to the citizens.

The EU is “an unidentified political object”, as Commission President Jacques Delors once called it. Everything in Europe is trial and error, in a permanent state of “being in the make”. The EU is less an institution than a process: Always moving on, redrawing the map, never finished, totally hybrid, yet providing a kind of unity of aim in strong diversity. Balancing acts are the EU’s specialty, just as in-betweenness is its main characteristic.

The EU is performing a juggler's act to keep three or even four balls in the air: region – nation – Europe – world. After many years, it is still a fragile construction.

Some elements are changing so rapidly that further theorizing would be presumptuous. The EU resisted most theories and generalizations; it is a rule-breaker of the theory game. Integration is a sort of post-everything development, as Robert Kagan and Robert Cooper stated (unfortunately the latter gave it – in an otherwise brilliant paper – the totally misleading qualification “postmodern”).

The project EU can be accomplished only *without* a well-defined ultimate goal or limits: by avoiding clear answers to questions like how far integration should go and what the final political boundaries should be.

However, the program as such is goal-oriented, evolutionary in character: for tomorrow, the promise is more integration than we have today. From its beginning, the EU has been the top-down work of a political upper layer, with little democracy, though it was meant as a coalition of free democratic countries. The choice was: integration or a strong voice of the people in the member states.

After the Cold War, complex historical ballast is playing its stronger role in the foreign affiliations of the different countries. After 1990, we can see a general return of historical patterns. It's not that history is repeating itself; there is just a notably stronger impact of the “dead hand of history”, which started with the revolutions of 1989–91. Integration is also an attempt to exorcise that history, an attempt at modernization, to remove the skeletons from the closets. And in that respect, integration has played its role quite successfully. Europe used to be a warring continent, but now, for nearly fifty years, it has known peace. Alas, the Balkans destroyed this postwar image of Arcadia.

Some of the paradoxes I have dealt with are: The concept of “Europe” may originally have been mainly cultural; but from the beginning, culture has been left out of the integration programs. The founding fathers had good reasons to leave culture out as a means of integration. How to integrate a polyglot Europe remains a crucial problem in the EU.

The security issue is particularly urgent because of the present transatlantic crisis, since Europe is surrounded by zones of instability, to put it mildly. The EU ideal of a civil society is: law above power as the main principle of the EU. The EU has a “common – based on common interests of the member states – but not a unified (*einheitliche*) foreign policy” (Chris Patten).

“Borders go down, walls go up.” When the EU is enlarged to the east next year, lots of borders will be removed (e.g. between Poland and Germany), but other borders – those to the east of the new member states – will become more sealed off.

2. The Present Transatlantic Crisis

In an essay titled “How the US and the EU lost common ground, and how the EU lost much of its cohesion”, I discussed several theses, including: “A new era in world politics”. 9/11 underscored the fact that the unreal nineties had definitely come to an end. The End of the Cold War has weakened the glue of the old alliance. Europe is no longer geopolitically contested and thus has ceased to be a principal cockpit of international relations. America’s interests lie elsewhere now. From now on, Europeans are relevant only to the extent that they support common endeavors in the Middle East and beyond.

The so-called Neoconservatives tend to believe that we live in a special moment of history, one characterized above all by America’s unparalleled military power and the opportunity to expand the boundaries of democracy around the world. They believe that expansion would make the world safer and that this is the time for a grand strategy to assert a Pax Americana. In their view this is the decisive decade for human liberty.

So, in world politics we now encounter a growing American hegemony – of a US that, however, turned out to be very vulnerable – while on the other hand the influence of international law and all its matching institutions seems to be increasing – but still cannot cope with a real crisis. As the German political scientist Herfried Münkler said: “Die entfesselte amerikanische Macht muss normativ wieder eingefangen werden.” (which approximately translates as: the unbound American power should be bound again with norms).

Is the EU really going to strengthen its military power? That would, however, be a very costly business. And in the present period of serious cutbacks, political support for such a huge extra expenditure is very weak indeed.

Europe is still and will remain far removed from an “eigener weltpolitischer Gestaltungswillen” or strategy (H. Münkler).

Its lack of power divides Europe: some states try to strengthen their ties with the US, others – like France – keep hoping for a powerful European role in a multipolar system.

3. Recent Changes in German Foreign Policy

Another essay dealt with the questions: “How reliable does the Federal Republic remain as a partner in international politics after the recent *Alleingang? Wohin treibt die Bundesrepublik? Oder besser: Wohin wird die Bundesrepublik jetzt getrieben?*”

These questions lead to the broader *Frage*: How successful in general has the foreign policy of the Schröder government been? Has there been a shift in the relationship between *innere und äußere Staatsräson*? To what extent do the budgetary crisis and the *Reformstau* affect Germany’s foreign policy? What did the chancellor mean when he spoke of an “independent Europe”? How can the “detached cordiality” that used to exist between Berlin and Paris, – in spite of all their diverging interests, be restored? Did Germany’s influence in the EU-networks – especially with regard to East-West relations – diminish due to the present transatlantic crisis? To what extent are there changes in the emphasis on “peace” and “freedom” in political and ethical discussions in present-day Germany? How can German discussions be steered away from the interpretation of “historical lessons” of the Second World War as leading to a moral emphasis on Germany as an exclusively civilian power?



« PROPOS DE TABLE »
ÉRIC BRIAN

Directeur d'études : École des Hautes Études en Sciences Sociales, Paris (Centre Alexandre-Koyré. Histoire des sciences et des techniques). Professeur invité: Technische Universität Berlin (Frankreich-Zentrum/DAAD ; octobre 2003–mars 2004). Université de Vienne (Institut de philosophie ; printemps 2002). Hebrew University, Jérusalem (Department for Humanities ; mai 2002). Université de Vienne (Institut pour la théorie et l'étude sociale des sciences ; printemps 1997, hiver 1997/98, hiver 1998/99, hiver 1999/2000). Université d'État Lomonossov, Moscou (Faculté d'histoire ; janvier 1995). Fellow Wissenschaftskolleg zu Berlin (année 2002/03), du SCASSS, Uppsala (automne 1994), de Columbia University, New York (Harriman Institute ; automne 1984, automne 1985, automne 1986, automne 1987). Directeur de la *Revue de synthèse*, Paris. Co-responsable de l'unité 'Histoire et populations (histoire des sciences – histoire économique et sociale)' à l'INED, Paris. Domaines de recherche et d'enseignement: Histoire des sciences mathématiques, économiques et sociales (XVIIe–XXe siècle) – Historiographie et histoire des sciences – Sciences et État – Histoire et sociologie de la division sociale du travail scientifique – Épistémologie. Publications : *Actes de la recherche en sciences sociales: Science*, 141/142. March 2002. *Réglement, usages et science dans la France de l'Absolutisme*. Paris, 2002. *Revue de synthèse : Objets d'échelles*, 1, Jan./Mar. 2001. *La Mesure de l'État. Administrateurs et géomètres au XVIIIe siècle*. Paris, 1994. – Adresse: Centre Alexandre Koyré, EHESS, 10, rue Monsieur le Prince, 75006 Paris. E-mail : brian@ehess.fr. Web: www.ehess.fr/acta/brian.

1. « So, Eric, what are you up to here? »
(- Son qui per mia disgrazia; e voi?)



Mittagessen am Anfang des Jahres. On se connaît à peine, à part quelques-uns, pour avoir souffert pendant les cours de langue en septembre ou pour s'être croisés ces derniers jours entre la Villa Jaffé et la Villa Walther. On sait plus ou moins d'où vient tel ou tel. Chacun aux yeux des autres porte avec lui le nom d'un pays ou d'une langue, celui d'une discipline, le titre d'un projet et parfois la réputation d'un ouvrage ou d'un itinéraire, bref sa part d'un capital symbolique à valeur plus ou moins locale dont le bilan s'écrit en forme de curriculum vitae. La collégialité est une égide heureuse, comme une égalité de principe et les tables du restaurant lui offrent un cadre favorable à de multiples transactions philosophiques. Ce serait un marché tel qu'on le lit chez Smith si tous ces capitaux bigarrés étaient mutuellement convertibles. Ce n'est heureusement pas le cas¹. Accrochée au mur, l'image d'un goudronneur à la besogne rappelle aux savants qu'ils se doivent d'être des travailleurs de la preuve (Turgot, Ricardo et Bachelard auraient apprécié cette métaphore du fondement de la valeur scientifique). Apparaissent donc ici déplacées,² les opérations de contrebande qui font les simagrées courantes du conflit des facultés.

Pourtant, la question la plus élémentaire me décourage. Certes, je sais ce que je fais. Mes travaux relèvent d'une sociologie générale des sciences qui prend pour objet les calculs dans les temps longs ou courts de leurs conceptions, de leurs procédés, de leurs pratiques et de leurs usages ; ils articulent de ce fait des questions vives en sciences sociales, en historiographie, en philosophie et dans les sciences étudiées. Non pas une carte de visite mais un épouvantail à moineaux ! Je pourrais prendre une formule à la mode (par exemple « *science studies* ») et produire l'illusion d'une identité simple. Mais par tempérament comme par conformité avec le savoir-faire qui est le mien, je répugne à recourir à ces petits arrange-

¹ Sur l'invention de la forme institutionnelle du congrès scientifique qui depuis le milieu du XIXe siècle offre un cadre légitime pour la régulation de telles conversions entre des capitaux symboliques locaux et transnationaux, voir (2) dans la liste des publications ci-après. Comme dans (3), ce texte-ci consiste à faire des nécessités d'une expérience humaine un objet d'expérience sociologique.

² Sur les débats l'année précédente pendant les séminaires, voir notamment les textes de J. Henrich et F. Ringer dans le *Jahrbuch 2001/2002* du Wissenschaftskolleg, pages 94–96 et 155–157.

ments³. La chose m'apparaîtrait d'autant plus indécente que je me trouve face à des pairs. Or, pour mon malheur – comme le chante Leporello⁴ – je ne peux ignorer les préjugés les plus fréquents parmi les spécialistes homologues de mes nouveaux amis qui me questionnent à table. Je me souviens par exemple de cet oral, il y a près de quinze ans, devant une commission de l'INSERM⁵. J'y défendais le bien-fondé d'une enquête sur l'histoire du calcul en médecine aux XVIIe et XVIIIe siècles en le justifiant à partir d'un examen méthodique des opérations rendues nécessaires au cours des enquêtes actuelles ; j'observais les visages d'une demi-douzaine de mes évaluateurs, formés dans les années 1960–1970 par les pères fondateurs de l'épidémiologie moderne, convaincus qu'avant la Seconde Guerre Mondiale il n'y avait point de mathématique médicale, et à qui j'expliquais que les controverses sur l'application du calcul à la médecine tenaient une part importante dans les renouvellements du calcul intégral – c'est-à-dire des mathématiques pures – à la fin du siècle des Lumières ; me revient l'impression de ces visages défaits par l'incompréhension et l'angoisse et cette aimable patronne de labo me demandant à la fin, au prix de précautions toutes maternelles, « Et plus tard, Monsieur, qu'est-ce que vous voulez faire ? ». Je me réjouis aussitôt d'avoir pour voisin de bureau, ici au Wiko, un familier de l'œuvre ethnopsy-

³ Plusieurs sites Web offrent à ce sujet une copieuse information (sociétés savantes, revues, conférences) qui fédère les travaux plus anciens d'histoire et de philosophie des sciences et les recherches renouvelées depuis les années 1970 en sciences sociales des sciences et des techniques, cela aussi bien à propos des sciences mathématiques, physiques et biologiques qu'à celui des sciences humaines. Deux ouvrages de référence sont U. Felt, H. Nowotny, K. Taschwer. *Wissenschaftsforschung. Eine Einführung*. Frankfurt, New York: Campus Verlag, 1995 et M. Biagioli (ed.). *The Science Studies Reader*. New York/London : Routledge, 1999. L'ampleur de ces travaux mérite l'attention depuis longtemps. Au début des années 1980 au moment de ma formation doctorale, leur réception en France fut encouragée par le programme STS du ministère de la recherche. Pendant la seconde moitié des années 1990, les milieux concernés dans divers pays furent affectés par les effets de l'« affaire Sokal » et les formes prises par la *Science War*. Fédération de travaux pas-sablement hétérogènes, ce domaine s'est alors replié défensivement en tentant de s'affirmer comme une discipline nouvelle. Mais l'agrégation de multiples secteurs très hétéronymes ne suffit pas à constituer une discipline. Pour le dire à la manière de P. Bourdieu dans *Les Règles de l'art* (1992), les principaux protagonistes de ce champ ont alors fait de mauvaise fortune bon cœur et se sont mis à gérer collectivement son anomie. Quelques mois avant mon arrivée à Berlin, je préparais avec P. Bourdieu et Y. Gingras la publication du numéro *Science* de la revue *Actes de la recherche en sciences sociales*, n° 141–142, mars 2002, qui vise précisément à répondre à cette conjoncture et à contribuer à structurer ce champ international de recherches autour d'enjeux à proprement parler de sciences sociales. De là l'intensité de mes scrupules. Les discussions que j'ai pu avoir tout au long de l'année au Wiko, ailleurs à Berlin ou bien encore au ZIF à Bielefeld m'ont conforté dans cette ligne de conduite alors même que le système des références philosophiques, historiographiques et sociologiques diffère notablement en langue allemande et en langue française. En janvier 2003, le congrès de l'AISLF fut une nouvelle occasion de discuter tout cela, voir (12).

chiatrique de Devereux, l'auteur de *From Anxiety to Method in the Behavioral Sciences* (1968). Tout cela fuse dans mon esprit alors que, résolu à employer une langue dans laquelle j'imagine m'exprimer avec facilité depuis longtemps, mais où je sens bien que me manquent les ressources d'un fellow du Queen's College d'Oxford, tel celui-ci dont le regard gourmand croise à l'instant le mien, je réponds hardiment « *I am studying history of probabilities* ». C'est pas mal comme entrée en matière. Selon mon interlocuteur, je peux évoquer des travaux en principe assez connus (Hacking en anglais, Krüger en allemand, Coumet en français) ; je peux suggérer en trois phrases que la question est à la fois de philosophie, de mathématique et d'histoire ; je peux encore indiquer, selon que je parle à un érudit, à un biologiste, à un théologien ou à un *social scientist*, deux ou trois exemples qui facilitent la conversation. Bien. Mon interlocuteur à la gentillesse de prendre au sérieux ce que je dis. A l'évidence, il met cordialement sur le compte de l'insatisfaction que me procurerait la nécessité de m'exprimer en anglais certaines des précautions oratoires que je prends et dont, faute de le connaître bien, je ne devinais pas qu'elles ne servaient à rien. Elles ne sont pas perdues pour tout le monde car nous ne sommes pas seuls à la table. Il m'interroge sur Pascal non sans anachronisme (peu importe) et il m'invite, toujours curieux et poli, à esquisser l'histoire des probabilités, là, entre deux verres d'eau minérale gazeuse. Il me faut donc promptement anticiper sur ce livre auquel j'imagine consacrer les dernières années de ma vie savante. Faute d'être certain d'en finir un jour avec un tel projet, je m'exécute : « *Telling something ‘is probable’ as opposed to computing a probability are two different issues [...] If we deal with the calculus of probability as a matter of a science – of geometry and of philosophy – we are speaking of the 17th century – here comes Pascal [...] Before that time period it is relevant to follow the uses of the words ‘chance’, ‘compute’, ‘conjecture’, ‘contingent’, ‘estimate’, ‘expectation’, ‘fortune’, ‘hazard’ in various cultural and intellectual contexts such as rhetoric, theology, commerce and jurisprudence [...] For the 17th and 18th centuries time period the mathematical understanding of probabilities presupposed an analogy with*

⁴ Les répliques de Leporello aux intertitres entendus à l'occasion de *Mittagessen*, et ici stylisés, proviennent de *Don Giovanni* selon l'édition de Prague (octobre 1787) et la partition de Mozart à la même date. Je m'appuie sur l'édition critique de G. Gronda *Il Don Giovanni: dramma giocoso in due atti. Poesia di Lorenzo Da Ponte. Musica di Mozart*, Torino, Einaudi, 1995 (respectivement ligne 50, lignes 107–108 et ligne 1256 variante M). Les extraits de la partition sont tirés de l'ancienne édition américaine, libre de droits de reproduction, *Don Giovanni. An Opera in Two Acts. Libretto by Lorenzo Da Ponte. Music by W. A. Mozart*. New York, Schirmer, ca 1900. On peut la consulter sur le site de l'Indiana University School of Music.

⁵ En France, c'est l'Institut national pour la recherche médicale.

games [...] The formation of Laplace's analytical theory has been a new rupture⁶ [...] The boom of Statistics during the 19th century [...] Later on: inference here, axiomatic there [...] And the list of relevant keywords is extending and moving, their dictionary is changing both as rationally constructed concepts and as widely circulating notions [...] At any point of this long history there are different configurations of specialized elaborations and practices [...] This is about classification and measurement ; about logic, language and mathematics ; about social and epistemological conditions. »

2. « And what's your opinion on ...? »

(– Giurate di non andar in collera!)



Mais la question légitime qui préoccupe mon interlocuteur est autre. Il veut un avis sur le recours aux statistiques aujourd’hui, sur la confiance et les doutes qu’on peut avoir à ce sujet. Que faire ? Prendre un exemple récent, tiens : les élections présidentielles de 2000 aux Etats-Unis⁷ ... Ce n'est pas le moment avec toute cette histoire irakienne, il suffit d'avoir l'accent français et de parler de Washington pour que toute la tablée se fasse des idées⁸. Alors quoi ? Un exemple tiré du XVIIIe siècle. Bon, j'y vais. Les conditions d'une conversation décente sont assurées et de fil en aiguille on passe à autre chose.

Les micro-périls de la conversation, leurs enjeux philosophiques pérennes, sont aussi vieux que les banquets et leurs recensions. Et Plutarque prudent a préféré donner à ses *Propos de table*, le tour d'une réflexion d'après-coup. Mais les proches de Luther savaient bien qu'on pouvait y traiter avec force de ce qui ailleurs appartiendrait au Concile. Il faut donc s'arrêter sur ces moments suspendus entre doute et compréhension à demi-mots,

⁶ J'évoque en deux mots mon *Staatsvermessungen. Condorcet, Laplace, Turgot und das Denken der Verwaltung*. Wien: Springer, 2001.

⁷ Ne devrais-je pas mentionner alors mon « Citoyens américains, encore un effort si vous voulez être républicains ! », *Actes de la recherche en sciences sociales*, n° 138, juin 2001, p. 47–55 ? Faut-il alors préciser que le titre provocateur couvre une stricte analyse sociologique du crédit accordé aux dénombrements électoraux pendant la période d'incertitude qui a ponctué ces élections ?

⁸ Quant à la question irakienne, les discussions de table au Wiko m'ont conduit à publier dans la presse les articles (5) et (6) dans la liste ci-après. Je remercie S. Zimmermann et A. Sebti pour la part qu'ils ont pris dans ces publications.

quand tournent autour d'une tablée de six, deux ou trois langues sans cesse croisées et les fantômes d'identités culturelles ou disciplinaires plus ou moins imaginaires, que se heurtent parfois crûment les acquis et les expériences de chacun : ce sont de véritables moments de transaction entre ces capitaux symboliques si hétérogènes. La réflexion sociologique⁹ me conduit ainsi à constater qu'en pareil cas, alors que tout autour des fellows concourt à atténuer les effets les plus nocifs des tensions entre les disciplines et entre les cultures, ces tensions – indices de non-convertibilité – demeurent et sont éprouvées par tous. Elles structurent les interactions autour de la table et se prêteraient à des analyses à la Goffman. Sous l'égide de la collégialité, les fellows les mieux disposés du monde seront sans cesse travaillés par ces jeux de structures sociales et cognitives, transdisciplinaires et transnationales. La formidable fécondité d'échanges à la fois banals et exceptionnels vient à mon sens de là. Comme la réserve des uns et l'ivresse des autres, ils proviennent des vrais périls que chacun peut ressentir, à peine, le plus souvent, tant le cuir académique est solide, mais parfois à la manière d'un coup brutal (*a striking argument*). Le monde de la connaissance, tout orienté qu'il est vers les enjeux qui lui sont propres, demeure ainsi un monde social comme les autres, si ce n'est que la violence physique y est en principe exclue – de là un rapport singulier à l'Etat – au profit exclusif d'une violence symbolique sans cesse présente¹⁰. Une institution *authentiquement scientifique* a ainsi pour caractéristique de procurer à ses membres (1) une protection efficace contre la violence physique du reste du monde, c'est-à-dire aussi des médiations subtiles vis-à-vis d'elle ; (2) des conditions acceptables pour la manifestation de ces luttes symboliques particulières ; (3) une régulation des luttes le plus souvent implicite qui renforce l'autonomie *relative* des enjeux de stricte connaissance¹¹. Le Wiko, indiscutablement, remplit cet agenda par le seul jeu réfléchi de la mise en présence d'une cohorte internationale à Berlin, transformant un séjour dans un lieu si puissant – si troublant – de l'histoire du XXe siècle en « *Ein Jahr im Paradies* » comme l'a écrit l'un de mes prédecesseurs.

⁹ Pendant cette année, la question de la réflexivité telle que la concevait P. Bourdieu est revenue plusieurs fois dans mes contributions ; voir (3), (4), (7), (9), (11) et (18). L'article (4) est un pur produit des occasions favorisées par le Wiko. Que B. Sarlo en soit remerciée.

¹⁰ Ce fait même est un acquis historique malheureusement réversible comme l'illustrent tous les règlements de comptes fondés sur la violence physique dans les champs scientifiques en période de crise.

3. « But does morality really apply here? »
(- Questa poi la conosco pur troppo.)



Or l'année a été terrible pour qui a la passion de la vérité et dès lors pourra craindre de vivre dans « un monde où seul le mensonge [serait] pris au sérieux¹² » ! Les guerres, on le sait, ne sont pas propices aux Lumières, tout au moins dans l'immédiateté de l'action : elles ont *systématiquement* pour effet, en tous lieux, et par delà les mobilisations militaires que connurent nos aïeux et qui nous ont été épargnées cette fois, une perte d'autonomie relative de tous les champs sociaux de production de biens symboliques. Les savants comme les autres. On se doit donc d'être vigilants sauf à perdre sa raison d'être ... Mais les journalistes et les gens de média ! Depuis cet hiver, quel spectacle ... Laissons à la profession le temps et le soin de trouver sa voie entre ces deux modèles : « *truth telling* » et « *story telling* » ...

¹¹ Thème familier chez Bourdieu. Formant ces phrases, j'ai aussi à l'esprit d'autres institutions, voir (1), (2), (10) et (13). Le caractère fonctionnaliste de ce constat quasi mertonien me sera reproché par les uns quand les autres s'indigneront de l'apparente crudité du propos. Il importe toutefois de l'esquisser ne serait-ce que pour contredire la demi-sociologie qui court dans toute les langues dans le commentaire des sciences, qu'elle parte d'une négation des rapports de forces entre les disciplines (et par extension entre les langues savantes) comme chez B. Latour, *Irréductions* à la suite de *Les Microbes. Guerre et paix* (1984) ou bien qu'elles généralisent abusivement l'une des formes particulières de ce principe de régulation comme l'ont fait successivement R. Merton et T. Parsons il y a cinquante ans et, de toute autre manière au cours des vingt dernières années, S. Shapin et S. Shaffer à propos de la *Royal Society* de Londres ou M. Biagioli à celui de la cour des Médicis à Florence. Cette critique ne m'empêche pas de penser toutefois que chacune de ces enquêtes apporte son lot d'études de cas à une sociologie générale des sciences, je veux dire à une sociologie qui prendrait pour objet les sciences et qui s'imposerait de ne recourir qu'à des élaborations conceptuelles validées ou susceptibles d'être validées en sociologie générale.

¹² Imre Kertész à propos d'il y a cinquante ou trente ans. Imre Kertész. « Eurêka ! », *Conférence Nobel* © La Fondation Nobel, 2002.

Aussi le jour où l'un de mes interlocuteurs à déjeuner me dit à un tout autre propos et en guise de consolation épistémologique générale « *Okay, what we're talking about here is story telling, right?* », j'ai eu du mal à conserver mon sang froid ... S'agissait-il d'invoquer Ricoeur ou White ? Mais non, on parlait à bâtons rompus. Le trait n'était pas une revendication théorique. Il appelait seulement une adhésion au bon sens scientifique et relevait de l'épistémologie spontanée des savants d'aujourd'hui. C'est l'effet d'une vulgate gouvernée par les nécessités de la communication scientifique contemporaine. Se faire entendre, c'est aujourd'hui réussir sa *demo*¹³ : « *striking the audience showing a fine story* ». La première tâche de la sociologie générale étant de conquérir son objet contre les prénotions, y compris celles des savants, on mesure sur cet incident qu'une priorité de l'enquête actuelle sur les sciences est d'analyser les rapports entre les conceptions savantes vives et les formes routinisées de la pensée des choses de sciences telles qu'elles s'imposent aux savants eux-mêmes. Un examen d'insconscience collective en somme. On conçoit aussi dans le même mouvement d'esprit, que les rapports de force actuels entre les savants et les médias sont tels aujourd'hui que la posture la plus défavorable pour entreprendre cette tâche sera d'envisager le commentaire des sciences comme une intermédiation entre les scientifiques et leurs publics. Au contraire, l'enjeu est la science même.

Mais d'autres de mes interlocuteurs furent plus noirs encore. « *But, Eric, after Auschwitz and the Gulag – is reason trustworthy ?* ». C'est, je l'admets, la question que nous lègue le XXe siècle, tant il est vrai que l'organisation rationnelle du travail fut la marque des plus grandes atrocités de ce temps. Mais faut-il pour cela confondre la terrible efficacité des vastes bureaucraties politiques et techniques contemporaines et l'espoir de disposer d'un moyen d'y voir plus clair ? Je ne le pense pas et je suis convaincu que, pour le comprendre, il importe de conduire des investissements passablement ingrats qui consistent à se donner les moyens empiriques et théoriques de saisir l'histoire longue des formes de division du travail de production des instruments symboliques, ceux-là même qui circulent entre

¹³ Voir C. Rosental, « De la *demo*-cratie en Amérique. Formes actuelles de la démonstration en intelligence artificielle », *Actes de la recherche en sciences sociales*, n° 141–142, mars 2002, pages 110–120. Cette année au Wiko les séminaires des représentants des sciences naturelles étaient fondés sur des présentations PowerPoint™ qui donnaient à voir des résultats et laissaient peu de place à un examen critique de la recherche alors que les séminaires des fellows issus des sciences humaines étaient fondés sur des textes critiques à l'occasion illustrés. Pendant cette année j'ai donc appris à rédiger en PowerPoint™ et j'ai essayé une formule de séminaire fondé sur un *texte* PowerPoint™ de sorte que chacun puisse contrôler et le résultat et la construction (14).

science et politique au péril du pire, on le sait d'expérience collective. De là ma propension d'une part à l'enquête historique méthodique sur des chantiers où il est facile de disposer d'idées toutes faites issues des affres d'hier (Science et Etat, genèses des organisations scientifiques et techniques, enquêtes sur le calcul et la prévisibilité) et d'autre part à la mise à l'épreuve des dispositifs conceptuels qui permettent d'étudier les sciences. Dès lors, peu importent les effets de modes qui ne sont que la traduction d'un changement de rapports de forces dans le champ international du commentaire des sciences, tout comme n'est d'aucun secours, par exemple, ce commentaire particulier qui consiste chez Latour à substituer au discours enchanté sur les sciences une métaphysique providentialiste sous un voile de référence littéraire à Tolstoï¹⁴.

Devant ces difficultés véritables qu'il convient de traiter rationnellement et sur lesquelles il n'est pas possible aujourd'hui de tracer de formule simple, on conçoit que les spécialistes du commentaire des sciences soient dans l'embarras, qu'ils choisissent de s'en tenir à une prudente accumulation d'études de cas ou bien qu'ils s'abandonnent à des vues sur le thème « sciences et politique ». On mesure alors le réconfort que peut procurer l'illusion d'une « discipline nouvelle ». De là aussi chez mes collègues les plus vains un esprit mondain, un néo-machiavélisme, qui m'apparaissent outrageants. Je sais qu'en écrivant cela je risque de déplaire à bon nombre de mes pairs, mais il me faut bien assumer la difficulté caractéristique de la science de la science : les conséquences de la réflexivité¹⁵. Pas de formule simple ... Mais une métaphore : un homme entraîné par la passion de connaître arrive au point où il n'a plus pour règle de conduite que l'accumulation méthodique de son curriculum de conquêtes (au XVIII^e siècle, cela prend forme d'un catalogue raisonné à la manière de la statistique camérale allemande) ; sa raison vacille comme vacillent ses proches autour de lui ; au bord de l'abîme qui le sépare du fétiche de sa culpabilité, il rêve d'une table où il triomphera, aveugle qu'il est devenu à tout ce que Durkheim a qualifié de fait social, les normes de conduites et leurs symboles (et la sociologie générale a beaucoup développé cette ligne d'analyse). Il disparaît aux yeux de ceux qu'il croyait connaître, emporté par l'illusion d'avoir le dernier mot et, au moment de chuter, découvre sous le voile du fétiche, le temps lui-même, la seule historicité de sa condition : « Spectre, fantôme ou diable, je veux voir ce que c'est. (Le Spectre change de figure, et représente le Temps avec sa faux à la main.) ...

¹⁴ C'est le principe de *Les Microbes. Guerre et paix* (1984) déjà cité.

¹⁵ Je songe bien sûr au travaux de P. Bourdieu, en priorité aux *Méditations pascalienes* (1997) puis à *Science de la science et réflexivité* (2001).

O Ciel, que sens-je ? Un feu invisible me brûle, je n'en puis plus, et tout mon corps devient un brasier ardent. Ah!¹⁶. »



Mais la chute du dissolu n'est pas celle du livret. Ici aussi « tout finit par des chansons » : il faut donner au public le temps de reprendre ses esprits et d'entendre la morale commune de la terrible histoire : « *Questo è il fin di chi fa mal: e de' perfidi la morte alla vita è sempre ugual* »... *Exodos* ... Une manière de *Farewell party* en somme. Pour ma part, j'ai passé presque toute l'année – outre les repas et tant de rencontres vives¹⁷ – à avancer sur trois chantiers ouverts depuis déjà trop longtemps : l'édition critique d'un manuscrit d'une centaine de feuillets de Condorcet sur la langue universelle (1793–1794) qui devrait paraître l'année prochaine¹⁸, une série de travaux sur la formation internationale des critères de dénombrements statistiques au XIXe siècle en Europe qui m'occuperont encore en 2004¹⁹, et

¹⁶ Dans la langue de Molière, répliques de Dom Juan, extraites des scènes 5 et 6 de l'acte V de *Dom Juan ou le Festin de pierre* (1665). Les éléments sur la pièce et sur l'opéra proviennent d'une recherche en cours, « Probabilité, prévision et conduite morale de Dom Juan à Don Giovanni », menée avec le *Da Ponte Institut für Librettologie, Don Juan Forschung und Sammlungsgeschichte* (Vienne). De *Don Giovanni* on a aussi parlé autour d'une table, un soir de *Familientag* après l'exécution du *Komische Oper Berlin* en mars 2003, sa dernière mise en scène dans le style du XXe siècle tardif, j'ose le croire.

¹⁷ A la manière d'un exercice de mémoire – et j'en oublie certainement – j'ai à l'esprit au moment où j'écris plus d'une cinquantaine de temps forts connus lors de discussions avec N. H. Abu Zayd, G. Airenti, A. Beydoun, M. R. Cohen, W. T. Fitch, J. K. Bisanswa, J. Hyman, R. Gadagkar, D. Grimm, M. Jaisson, A. Kacelnik, C. Kaufmann, G. Kerenyi, I. Kertész, T. K. Kovács, R. Kratz, W. Lepenies, R. Meyer-Kalkus, H. Molderings, W. Mattli, I. Mundry, P. Nádas, B. Pauset, A. Pleșu, D. Raubenheimer, H. Sabato, B. Sarlo, R. Schmalz-Bruns, A. Sebti, C. Severi, A. Sheriff, S. Simpson, M. P. Singh, E. Szathmáry, B. Trenčsényi, C. Vismann, L. Zhmud, S. Zimmermann et à plusieurs membres des équipes de soutien (bibliothèque, cuisine ou *Fellowdienst*). Mais le moment le plus inattendu et l'un des plus forts cette année fut pour moi une rencontre de hasard avec J. Bollack, lui-même ancien fellow de passage au Wiko, qui nous a donné l'occasion de parler d'un ami commun récemment disparu, nous qui l'avions connu à vingt ans d'intervalle et n'avions jamais eu l'occasion de nous rencontrer.

¹⁸ J'ai présenté lors d'un séminaire du Wiko un aperçu des recherches sur la question de l'universalité des droits de l'homme au temps de Condorcet (17).

¹⁹ (2), (13) et (19). Il est probable que la rencontre au Wiko de cette enquête avec celles conduites par S. Zimmermann sur d'autres formes de mouvements internationaux aboutisse à un projet commun dans nos institutions respectives : *Comparing Internationalisms/19th–20th Centuries*.

le manuscrit d'un livre provisoirement intitulé *Choses abstraites* qui développera les thèmes méthodologiques évoqués dans ce compte-rendu²⁰.

Publications et interventions au cours de l'année universitaire 2002–2003

Ouvrage

- (1) C. Demeulenaere-Douyère et É. Brian, eds. *Règlement, usages et science dans la France de l'Absolutisme*. Paris, Ed. Technique et Documentation, 2002, 550 pages.

Articles scientifiques

- (2) É. Brian. « Transactions statistiques au XIXe siècle. Mouvements internationaux de capitaux symboliques. » *Actes de la recherche en sciences sociales*, Paris, n° 145, décembre 2002, 34–46.
- (3) É. Brian, M. Jaisson. « L'Education structurale. » dans R.-M. Lagrave et P. Encrevé (dir.), *Travailler avec Bourdieu*. Paris, Flammarion, 2003, 119–128.
- (4) É. Brian, M. Jaisson. « Bourdieu : un retrato de cerca. » *Punto de vista*, Buenos Aires XXVI, 76, Agosto de 2003, 38–44 (entretien avec B. Sarlo).

Articles de presse

- (5) É. Brian. « Isten hozta a globalizált ‘Vén Európában’! » *Népszabadság*, Budapest, 15 février 2003.
- (6) É. Brian. « Bienvenue dans la ‘vieille Europe’ mondialisée ! » *Le Journal hebdomadaire*, Rabat, 8–14 mars 2003.

Co-organisations

- (7) Journée « Travailler avec Bourdieu ». EHESS, Paris, novembre 2002.
- (8) « Soirée 150th anniversary of the publication of Herman Melville's short story *Bartleby, the Scrivener*. » Wissenschaftskolleg, Berlin, mai 2003 (avec C. Vismann et la participation de J. Hyman).
- (9) Colloque « Pierre Bourdieu. » Collège de France. Paris, juin 2003.

²⁰ Une étape était faite des exposés (14) et (15).

Interventions

- (10) « On the Integration of Future New Comers in Research Professions Through Temporary Post-Doctoral Colleges. » *Journées Euroscience New science and technology based professions in Europe*. Bischenberg, novembre 2002.
- (11) « Réflexivité et temps historique. » Colloque international *Sciences sociales et réflexivité. Hommage à Pierre Bourdieu* (Centre de Sociologie Européenne). Université de Paris-Jussieu, janvier 2003.
- (12) « Sociologie des sciences et science des sociologues. » Exposé d'ouverture au congrès de l'Association Internationale des Sociologues de Langue Française (AISLF) *Science, innovation technologique et société*. Université de Dijon, janvier 2003.
- (13) « Zahlen, Ziffern und Globalisierung am 19. Jahrhundert. » Gruppe *Globalisierung*. Wissenschaftskolleg, Berlin, février 2003
- (14) « Le temps de l'abstraction, leçon de chose. Zeit der Abstraktion, Sachkunde. Time for Abstraction, Object-Lesson. » *Dienstagskolloquium*. Wissenschaftskolleg, Berlin, mars 2003.
- (15) « Zeit der Abstraktion. Sachkunde. » *Graduiertenkolleg*, Institut für Wissenschafts- und Technikforschung, Universität Bielefeld, mai 2003.
- (16) « Histoire des sciences et archives des sciences. Trois expériences. » Journée d'étude *Archives des sciences sociales – Sciences sociales de l'archive*. EHESS, Paris, juin 2003.
- (17) « Constitution, Human Rights and Public Instruction. A Reflection Based on Constitutional Issues in 18th Century France. » *The European Constitution from the Interdisciplinary Perspective: Promotion of Unity and Protection of Diversity*. Wissenschaftskolleg, Berlin, juin 2003.
- (18) « En français, en allemand et dans le champ international des sciences sociales. » Colloque *Bourdieu français – Bourdieu allemand. Deutsch-französische Perspektiven*. Wissenschaftszentrum für Sozialforschung, Berlin, juin 2003.
- (19) « How to Realize a Worldwide Survey Research on Population in 1865. » Colloque *Milestones for a cross-national survey research on population*. Istituto di Ricerche sulla Popolazione e le Politiche Sociali, Rome, juin 2003.



ALL OF THE ABOVE
MARK R. COHEN

Mark R. Cohen was born in 1943 in Boston, Massachusetts. He was educated at Brandeis University (B.A.), Columbia University (M.A.) and the Jewish Theological Seminary (M.H.L, Rabbi, Ph.D.). Since 1973 he has been on the faculty of the Department of Near Eastern Studies at Princeton University. His research field is the history of the Jews in the medieval Islamic world. His publications include, in addition to numerous articles, the following books: *Jewish Self-Government in Medieval Egypt 1126*. Princeton University Press, 1980. *Jewish Life in Medieval Egypt 641–1382*. Translated into Arabic. Tel Aviv University and The Jewish-Arab Institute at Beit Berl, 1987. *The Autobiography of a Seventeenth-Century Venetian Rabbi: Leon Modena's "Life of Judah"*. Princeton University Press, 1988. *Jews Among Arabs: Contacts and Boundaries*, with Abraham L. Udovitch. Darwin Press, 1989. *Under Crescent and Cross: The Jews in the Middle Ages*. Princeton University Press, 1994. *Toward the Millennium: Messianic Expectations from the Bible to Waco*, with Peter Schäfer. E. J. Brill, 1998. *The Majlis: Interreligious Encounters in Medieval Islam*, with Hava Lazarus-Yafeh, Sasson Somekh, and Sidney H. Griffith. Otto Harrassowitz Verlag, 1999. – Address: Department of Near Eastern Studies, Princeton University, 110 Jones Hall, Princeton, NJ 08544-1008, USA.

What was so special about this year? Shall I say it was that I finished the two books I came here to work on? Was it the wonderful community of scholars and their families, whose friendship I will take away with me? Should I point to the gracious and friendly staff of the Kolleg, not least, the fantastic librarians and their faithful service, “the jewel in the crown”, as our colleague Abdul Sheriff so aptly put it? Is it my memorable sixtieth birthday

dinner, surrounded by Wiko colleagues, other German friends, and my family? Should I mention Christine von Arnim, whose support (and that of the Kolleg) made it possible for me to bring the filmmaker Samir to Wiko to screen and discuss his fascinating documentary, “Forget Baghdad?” Shall I pay tribute to my wonderful language teachers? What about my friendships in the Berlin Jewish community? And what about my participation in Wiko’s Arbeitskreis Moderne und Islam and the inspiration I received at Wiko leading to ties with other institutions in Europe?

It is of course “all of the above” and more. I came to Wiko with two partially-finished books, both of them concerning poverty and charity in the Jewish community of medieval Egypt. I had completed virtually all of the research beforehand, transcribing and interpreting hundreds of letters, legal documents, wills, alms lists, and donor lists from the Cairo Geniza into my computer – indexed, with the information retrievable by search engine. So this was primarily a writing year, and I was able to bring the writing to a conclusion. My colleagues – none of whom were familiar with my field – reacted positively to my work, and I was tickled that the Hebrew word “geniza” (it means burial place for discarded Jewish writings) floated around the Kolleg for the entire year, as my documents and the detective work necessary to interpret them seemed to have caught people’s imagination (everyone likes a detective story). Also, my work in general, touching importantly on Jewish-Muslim relations in the Middle Ages, had more than a little relevance this year, when Jewish-Arab relations in the Middle East had sunk to such a low and tragic ebb and discussions around the lunch or dinner table often revolved around my special interests. I had the opportunity, too, to share my research with others outside Wiko – at the FU and at the Humboldt – and those occasions contributed to my work. While finishing the books I managed also to complete several articles, including one that appeared in German translation in the catalogue for an exhibition in Aachen about Christian-Jewish-Muslim relations in the Middle Ages.

As I departed, I left behind an article called “Jews and Muslims and the Myth of the Interfaith Utopia” that would appear in the *Frankfurter Allgemeine Zeitung* after I left (it appeared in October), as well as proposals for future collaboration with European colleagues and institutions (including Permanent Wiko Fellow Yehuda Elkana’s Central European University in Budapest) on projects related to my field.

Language. I arrived six weeks early for the intensive German course and continued studying German during the year. Eva and Marita and Doreen helped me leap forward from a passive, reading-knowledge of the language to a solid, functional, speaking ability.

I even, finally, developed a rudimentary facility to speak another language I knew only passively – French – thanks to the excellent teacher I found through Wiko’s connections. I don’t know how I will keep from losing my (out-Twaining Twain) *Ganzvielbesseralsvor-ausgehendesprochenesprachfähigkeit* in German in coming years, but I now read what I need to read much faster, and that improved skill will stick.

Happy is the unaccompanied Fellow who has a “zu Besuch”, Wiko’s official category for spouses and partners who commute in and out. Together, Sharon and I explored and came to love this city and the friends we made in it together. Alas, she could not be here for the grand finale, the Wiko Fellows’ Farewell Party for staff in July, but she was here to hostess my sixtieth. Having my two grown children visit for the party (Hanan from the States and Tamar from Israel) was also a real treat. They loved Wiko and Berlin too. We were all surprised to hear that Germans sing the American “happy birthday” song!

I did not know much about Jewish life in Berlin before I came. I had been told I would find mainly Russian Jews, recent immigrants benefiting from the German government’s liberal immigration policy, who have little knowledge of Judaism or Jewish culture. To my surprise, I found much more. Jews, German Jews, indeed, young German Jews (as well as American Jewish expatriates working in Germany for years) are here. They are small in numbers, but large in enthusiasm, building a new Jewish life in Berlin, including synagogue life. I joined the recently constituted egalitarian congregation meeting in the historic Neue Synagoge in Oranienburger Straße in East Berlin and lectured to other Jewish groups. These optimistic pockets of organized Jewish life in Berlin will continue to grow and prosper.

Another surprise was AKMI, Wiko’s Arbeitskreis Moderne und Islam, the brainchild of former Rektor Wolf Lepenies and colleagues in Berlin. I learned much from participating in its seminar on “Jewish and Islamic Hermeneutics as Cultural Critique”, where I met Jewish, Muslim, and Christian scholars grappling with common issues of text and meaning. Their enterprise is symbolically reminiscent of the interfaith intellectual gatherings of Muslims, Jews, and Christians in medieval Baghdad (poignantly, during the year of the American and British war against Iraq). The many hours of intense conversation I had with AKMI director Georges Khalil about Israel and Palestine, about Jews and Arabs, and about the role European, American, Israeli, and Arab intellectuals can play in setting the stage for post-conflict peace-building in the Middle East will not fade from my consciousness.

Wiko is more than a ten-month “paradise” for scholarly work. It is a community that nurtures and endures. One leaves with a feeling of gratitude for this community as well as of connection that will last a long time, whenever and wherever one meets Wiko colleagues from all over the globe.



EVOLUTIONS BARBARA L. FINLAY

Born in 1950 in Pittsburgh, Pennsylvania. B.A. Oberlin College, 1972. Ph.D. Massachusetts Institute of Technology, 1976; Assistant Professor, Department of Psychology, Cornell University, 1976–82; Associate Professor, 1982–88; Professor, 1988– ; Chair, Department of Psychology, 1996–2001; Visiting Scientist, Oxford University, 1984; Honorary Visiting Fellow, School of Anatomy, University, of New South Wales, Australia, 1986; Visiting Scientist, “Cerveau et Vision”, INSERM, Lyon, France, 1995; Visiting Scientist, University of Pará, Belém, Brazil, 1996– ; Distinguished Visitor, University of Western Australia, 2002. Editor, *Behavioral and Brain Sciences* 2002–; Editorial Boards: *Brain, Behavior and Evolution*, 1995–2002; *Visual Neuroscience*, 1995–98. Publications: “Developmental Structure in Brain Evolution”, with R. B. Darlington and N. Nicastro. *Behav. Brain Sci.* 24 (2001). “The Cortex in Multidimensional Space: Where Do Cortical Areas Come from?” with M. A. Kingsbury. *Dev. Sci.* 4 (2001). “Linked Regularities in the Development and Evolution of Mammalian Brains”, with R. B. Darlington. *Science* 268 (1995). – Address: Uris Hall – Department of Psychology, Cornell University, Ithaca, NY 14853-7601, USA.

My fall stay at the Wissenschaftskolleg coincided with the beginning of my new position as editor of the journal *Behavioral and Brain Sciences* (BBS) as well as being a time for synthesis of some general ideas about the nature of brain evolution that I have been developing. The undisturbed time at Wiko was an excellent environment for both, as well as for the intellectual interaction afforded by the brain evolution focus group. I will discuss these topics separately.

Journals

It is a challenging time to take over a prominent journal. The type of evidence I will present that BBS is in fact a “prominent journal” is one source of the challenge. For the year 2002, BBS’s “impact factor”, a measure of the citation frequency of the journal computed by the Institute for Scientific Information, placed it first of 39 behavioral science journals and ninth of 197 neurosciences journals. BBS publishes particularly significant and controversial pieces of work from researchers in any area of cognitive science, which can be anthropology, economics, computer science, behavioral biology, psychology, neuroscience, or philosophy. Published together with the article are 20–30 commentaries on each article from specialists within and across these disciplines, plus the author’s response to them. Within these wide-ranging disciplines, the content of articles is very eclectic. Some sample titles of manuscripts I dealt with from the time I was at Wiko give an idea of this range:

- The evolutionary origin of the mammalian isocortex: Towards an integrated developmental and functional approach
- Three stages in the evolution of cruelty: Predation, hunting, and power
- Self-experimentation as a source of new ideas: Ten examples about sleep, mood, health, and weight
- Separate visual representations in the planning and control of action
- What to say to a sceptical metaphysician
- *Foundations of language* (multiple book review)

Widespread attention to impact factors is a relatively new phenomenon that has changed the nature of scientific publishing. For academic tenure, promotion, and grants, publication- and citation-counting have been commonplace for years, but a substantial qualitative component existed in the interpretation of these data in the estimation of the quality of the journals published in. While a qualitative judgment should certainly remain, in fact, in many venues, judgment has been all but replaced by the impact factor, often used as a simple multiplicative factor on the citation itself; this is the specified procedure for tenure and grant assessment in a number of countries and granting agencies. For example, by this metric, an article in *Science* would be valued about 6 times as much as an article in any of the 150+ neuroscience journals of record. The effect has been immediate and direct: submissions to high-impact journals are up, submissions to the others are down; anxiety and

efficiency are up; whimsy and many aspects of gentility are gone; eclecticism is challenged. This new cauldron makes a different stew; it also changes the cooks who stir it.

Most important for BBS's purpose as a journal of controversy and consideration, the time frame in which authors expect action is markedly changed. BBS's impact factor benefits from the use of citation indices in that our review and commentary process virtually guarantees that any article gets closely read by at least 40 readers, all of whom are potential citers (the median number of citations of scientific papers generally is, unfortunately, 1!). A journal like BBS does not benefit at all from mind-blinding speed, but such speed is all but required from the ambitious scientist, particularly those who receive funding from biomedical sources. The challenge for an editor in this environment is to make explicit for herself the consequences of what might seem to be minor decisions of the type of how long a reviewer is given to review for the submissions and readership of a journal – not to blindly follow pressure and exigency.

BBS was one of the very first all-electronic journals (for submission and review), and Stevan Harnad, the first editor and inventor of BBS, developed the Open Peer Commentary format together with the electronic medium that uniquely suits it. Technology now makes it possible for us to considerably elaborate and extend the commentary format, which we choose to do. This would seem highly desirable, to have the opportunity to participate in a mediated forum of the highest quality. While this forum might have impact, it has no impact factor. This is a problem.

I suspect that discussions of the problems of contemporary journals appear infrequently in the Wissenschaftskolleg's yearbook. It should be obvious, I hope, that consideration of the properties of the scientific publishing environment is critical to the progress of science, and Wiko did provide the congenial atmosphere for this type of consideration.

Science

Brain development and evolution is my field of interest and was also the interest of the group convened by Georg Striedter. I continued work on a number of papers, most of which are still in progress. Collectively, the papers all concern a clash of interpretation about “levels of analysis” in describing evolutionary phenomena. The motor of biological change is successful adaptation; only those who survive pass on their genes. But to describe the structure of change, history matters – adaptation must be described in the context of the prior state of the species and the constraints and possibilities of the developmental

mechanisms available to resculpt an organism. Much has also been written about just what counts as an “adaptation”, especially in the context of development. One example in brain evolution:

The classic picture of the human brain shown in talks and printed media depicts the cerebral cortex in side view, often with description added: a number of cortical areas, each with a function given. It’s not unfair to say that the Holy Grail of work on the neural basis of human cognition has been to understand the “cortical area” – what each area does, how each area got there, considering both development and evolution. But what if cortical areas don’t really matter for understanding the structure of cognition and we have simply been overimpressed with a superficial feature of organization? Consider a beehive (this example taken from Jeffrey L. Elman. *Rethinking Innateness: a Connectionist Perspective on Development*. MIT Press, 1996). Each cell of a honeycomb is hexagonally shaped, but there are no explicit instructions for the production of hexagonal structure in the bee’s construction of a cell. Hexagonal shapes emerge through the simultaneous construction of several cells packed into a small area. While hexagons have nice features for efficiency of packing (as cortical areas probably do), we have no reason to believe that construction rules that produced little cubes or slightly more amorphous blobs instead would render a beehive non-functional. The scientist who devoted his life to the understanding of hexagonal structure, if that scientist was truly concerned about describing functional adaptations, may have devoted his life to the explanation of an attractive-looking artifact. I argue that an understanding of both function and development is required to discriminate an adaptation. The information that links special functional status to cortical areas is weaker than formerly thought, and “areas” are a manifestation of a very powerful ordering-and-segregating developmental process that produces local-to-global order from neighboring synapses on up. These types of arguments form a theme through a set of five papers presently in various stages of completion, all of which were touched on during my stay at Wiko (listed below).

Overall, I have been given the opportunity to consider both the content of science and the means of its communication, an interesting enterprise indeed.

Titles of Publications in the Works

Finlay, B. L., B. E. Clancy, and M. A. Kingsbury. “The Developmental Neurobiology of Early Vision.” In *Advances in Infancy Research*, edited by S. P. Johnson and B. Hopkins, 1–42. Ablex Press, 2003.

- Finlay, B. L. "The Calvinist Cortex: Penetrating Evolutionary Predestination." Comment on B. Merker. "Cortex, Countercurrent Context, and Dimensional Integration of Lifetime Memory." *Cortex* 40 (2004).
- Finlay, B. L. "Cortical Brain and Behavioral Development." In *Cambridge Encyclopedia of Child Development*, edited by B. Hopkins. In press.
- Finlay, B. L. "Rethinking Developmental Neurobiology." In *Beyond Nature-Nurture: Essays in Honor of Elizabeth Bates*, edited by M. Tomasello and S. Slobin. Lawrence Earlbauim Publishers. In press.



TOASTY MEMORIES OF A COLD WINTER TECUMSEH W. FITCH

Lecturer, University of St. Andrews, 2003–present. Lecturer, Biology and Psychology, Harvard University, 1999–2002. Postdoctoral Fellow, Harvard/MIT, 1996–99. Ph.D., Cognitive and Linguistic Sciences, Brown University, 1989–94. B.A. Biology, Brown University, 1981–86. Research Interests: Bioacoustics, vertebrate communication, the evolution of language and music. Selected publications (of 40): “The Descended Larynx Is Not Uniquely Human”, with D. Reby. *Proc. Royal Society* 268, 1477 (2001). “The Language Faculty: What Is It, Who Has It, and How Did It Evolve?”, with M. Hauser and N. Chomsky. *Science* 298 (2002). “Calls Out of Chaos: The Adaptive Significance of Nonlinear Phenomena in Mammalian Vocal Production”, with J. Neubauer and H. Herzl. *Animal Behaviour* 63 (2002). – Address: School of Psychology, University of St. Andrews, St. Andrews Fife, KY16 9JU, United Kingdom.

As I look out my window upon a cold and windy Scottish day, Berlin feels far off indeed, in both time and space. I'm reminded of cold days back in January, the long chain of lakes traversing Grunewald all frozen over, and biking down this white icy highway all the way from Koenigssee, over Hundekuhlesee to the Schlachtensee, almost to Potsdam. At the end, the glow of the setting sun lit ice skaters twirling and families walking on the ice, pulling their children on sleds. A *Glühwein* salesman doled out his flame-warmed elixir. Less idyllically, the cold reminds me of the “Filibuster for Peace” organized by Americans living in Berlin, a protest against the imminent Iraq War: 48 hours straight through of reading, talking, singing and dancing for peace in the still bitterly cold March night, and playing my protest song “Gulf War Syndrome” with nearly frozen fingers. But as the

memories start to flow of their own accord, warm ones begin to dominate. Memories of our impromptu dance party round Carnival time – cold outside but hot indeed in the crazily redecorated dining room. The inner warmth grows as I remember our first April meals outside the villa, or on the terrace at *La Forchetta*. My first swim, in early May, in the Halensee, when I heard my first nightingale singing. Finally, as summer commenced, sipping a fine rioja on the terrace above the library, in the summer heat, looking out on the new leaves of that magnificent beech tree. Indeed, despite it having been the coldest winter in Berlin for many years, my memories of the Wiko are suffused with a pervasive warmth.

Of course, despite the comfortable glow that characterized my time at the Wiko, work was the dominant preoccupation. My main project, a comprehensive book on vertebrate vocal production (alas still unfinished) went from a fantasy to a quite substantial five chapters. The luxury of uninterrupted work time allowed me to confront the rising panic of realizing just how big a job I'd set myself with the calm reassurance that I had plenty of time to accomplish it. In any other context, I probably would have quickly retreated to a much more manageable topic. As things stand, I have a clear idea of what remains to be done, a complete bibliography, have read most of the necessary literature (infinite thanks to the wonderful library staff!). I also have gained a clear sense of mission that will carry the project through to the finish. Frequent meetings with my collaborators at the Humboldt University theoretical biology group, led by Hanspeter Herz, provided a priceless opportunity for further learning, and for testing new ideas, about bioacoustics. The further opportunity to lead a small conference on vertebrate vocal production with many of the world's experts on vocal production (funded by the Wiko and elegantly organized by Britta Cusack) came at the perfect time. This workshop reinforced my sense of the importance of my project and reassured me that I hadn't missed too much, while teaching me plenty that was (and still is) not available in the literature. I feel incredibly lucky to have had the opportunity to further this project, thanks to the intellectual nurturance that is the Wiko's forte.

I was able to finish five papers on other topics, as well, (including one project that had been hanging over my head for five long years). My paper on language evolution with Noam Chomsky and Marc Hauser came out in December, in the journal *Science*, and generated significant controversy and interest (including so many requests to give talks that I often had to decline, rather selfishly, to guard my writing time). Two papers on monkey auditory perception, also long in the works, are now submitted, along with two book chapters on language evolution and primate communication (in press). I also had the welcome

opportunity to share my work and ideas with the wider public, both through my Wiko evening colloquium and via the popular media: a television interview with Alexander Kluge (recently aired on Sat1), a radio special on vocal imitation aired on Süddeutsche Rundfunk, and a magazine article in the Vienna Science magazine *Heureka* about scientists who “moonlight” as visual artists. I also gave some eight talks in academic venues during my Wiko tenure, and started two very exciting and promising collaborations with German scientists I met in Berlin. Looking back on all this, it’s amazing that I accomplished any work at all on my book, and more amazing still that I felt so relaxed and unhurried during those halcyon ten months.

But, as I’m sure is true of many other Fellows, the real pleasures of the Wiko were unexpected: the host of new ideas and exciting intellectual exchanges from the staff and other Fellows. The everyday personal contact and relaxed atmosphere of the Wiko opened up a broad new set of interests and ideas for me. I explored the rich parallels between biological and social evolution with political scientists Kathy Thelen and Susan Zimmerman. In frequent discussions, both planned and fortuitous, with anthropologist Carlo Severi and cognitive scientist Gabriela Airenti-Severi, we began to sketch out a taxonomy of cognition that includes both animal and humans and attempts to “carve nature at the joints” by breaking cognition into culturally, biologically and evolutionarily meaningful subdivisions: a project that will continue long post-Wiko. Within my own field of neuroscience and evolutionary biology, the somewhat irregular but always enjoyable Brain and Behavior meetings with the other biologists in the group were stimulating and informative. Conversations on computation and cognition with neuroscientist David Raubenheimer were especially helpful and enlightening. The most unexpected outcome was initially hard-hitting conversations on the philosophy of mind and language with philosopher John Hyman, which evolved into a very pleasant opportunity to exchange and sharpen our viewpoints, often enhanced by a fine bottle of wine or a good meal at *La Forchetta*.

Besides wide-ranging interdisciplinary conversations like these, a second unexpected pleasure was a renewed plunge into music. My research on the evolution of language has led me to find ever more plausible Darwin’s hypothesis (shared by Rousseau) that fully-evolved human language was preceded by a musical proto-language (which I call the “prosodic protolanguage” hypothesis). This provided the incentive to deepen both my intellectual understanding of music (helped with conversations with Reinhart Meyer-Kalkus and composer Isabel Mundry, both of the Wiko, and Berlin linguist Manfred Bierwisch, with the warm and welcome encouragement of Joachim Nettelbeck) and to refresh my

performance abilities (which had become more than a bit stale since my last regular performances, during graduate school). I made Friday night my music night (apologies to my neighbors!), devoted to playing the gorgeous grand piano in the main building and writing a number of new songs. With the help of Wiko's own expert producer/engineer Christian Schmitz, I even burned a CD of one of these songs, based on Dryden's famous poem "Song for St Cecilia's Day". I now have enough songs to record an entire CD, hopefully again with Christian in Berlin in the near future. I performed several times out in the city, as well as attending many great performances. I also danced more than I have in years. Combined with a renewed practice of visual art (aided by the weekly opportunity to draw my colleagues, afforded by the Tuesday colloquia – not to mention valuable critical feedback from Christine Klöhn), I was able to considerably broaden and deepen my artistic side while in Berlin.

Of course, no stay is perfect, and the fly in this particular ointment was the US invasion of Iraq. The frustration, as an anti-war American, of watching the gathering storm and the travesty of justice that ensued, and feeling powerless to do anything, was acute. However, I felt particularly grateful to have the opportunity to discuss the developing issues with my Arabic-speaking colleagues, especially Abdul Sheriff, who kept me apprised of the latest news from Al-Jazeera, and Nasr Abu Zayd, who provided a solid (and brave) example of non-fundamentalist Islam at its best. Long and educational conversations with Dieter Grimm, Wolf Lepenies, and euromaven Maarten Brands helped me gain a more subtle understanding of European politics (though Maarten's euro-skepticism has not succeeded in dampening my enthusiasm for a powerful unified Europe with a coherent foreign policy as a necessary balance to the US). A protest against the war organized by various non-Wiko Americans living in Berlin and myself was firmly supported by many staff members and Fellows of the Wiko (thanks to you all). So despite the ultimate ineffectiveness of our protest and the ongoing disastrous outcome of the Bush administration's policy, even this dark cloud had an unexpected silver lining, driving me to a much deeper appreciation of European politics and the complexities of the Islamic world and renewing a long-dormant commitment to political action.

But, alas, the future calls, and retrospectives must come to an end. Berlin fades once again to a wintry Brueghesque memory, the figures on the icy lake beautiful but distant. Back at my desk (with a welcome bit of sun occasionally peaking out from behind the Scottish clouds), I continue to be amazed that a community like the Wiko exists. Amazed both by the temporary community of lucky 02/03 Fellows, which I am forever grateful to have

joined, and by the more permanent community of intelligent, kind, competent staff who are the golden threads running through the years, making it all possible. My gratitude of course extends also to the agencies that fund this unique and productive institution – may their wisdom continue! With the long cold nights of the Scottish winter on the horizon, I know I'll derive considerable solace and strength from both the accomplishments and the warm memories of my stay at the Wiko in Berlin. And in my better moments, I can even feel pleasure (rather than unmitigated jealousy) for the next round of Fellows, just settling into their year in paradise. May they profit as much, and in as many ways, as we did!



Upper: Steven Vertovec, Carlo Severi
Middle: Imre Kertész, Leonid Zhmud, Dieter Grimm
Lower: Éric Brian, Abdelahad Sebti



PAST AND PRESENT
LYDIA GOEHR

Lydia Goehr was born in London but now lives in New York. She is Professor of Philosophy at Columbia University. She has been a recipient of Mellon, Getty, and Guggenheim Fellowships and in 1997 was the Visiting Ernest Bloch Professor in the Music Department at the University of California at Berkeley, where she gave a series of lectures on Richard Wagner. She is the author of *The Imaginary Museum of Musical Works: An Essay in the Philosophy of Music*. Oxford, 1992 and *The Quest for Voice: Music, Politics, and the Limits of Philosophy*. Oxford, 1998. In 2002/03, she was the visiting Aby Warburg Professor in Hamburg and a Fellow at the Wissenschaftskolleg zu Berlin. She is currently writing a book on the relationship between Philosophy and Music in the work of Theodor W. Adorno. Her long-term project is a book entitled "Lonely Composers and Solitary Thinkers: A History of the Philosophy of Music as Told Through the Quarrels Between Philosophers and Composers". She is currently completing with Daniel Herwitz an edited book, entitled *The Don Giovanni Moment: A Collection of Essays on the Moral and Aesthetic Legacy of Don Giovanni*. – Address: Department of Philosophy, Columbia University, Mail code 49 86, New York, NY 10027, USA.

I am writing this report – rather, these reflections – sitting in my Wiko study for the last time on the last day. It is August 3, 2003. Most of the other Fellows have left. I am the last to leave in the Villa Jaffé. I have just read a report in the *Tagespiegel* about the Astoria Restaurant on Halensee Bridge, the restaurant in which a group of us spent a wonderful final evening dancing alongside a party of Russian Jews to Ukrainian and Jewish songs. They were eating smoked salmon, herring, and a large leg of pork! We were being denied

nearly everything we ordered from the menu, including that great Russian specialty, the stuffed elephant trunk. “We don’t cook that tonight,” said the Russian waiter as if he were still living in a city where one cannot buy what one wants.

„Wenn ich auf jene Jahre des Exils zurückschau‘, schrieb Vladimir Nabokov 1951, „sehe ich mich und Tausende anderer Russen ein seltsames, aber keineswegs unangenehmes Leben unter völlig belanglosen Fremden führen, in deren mehr oder minder unwirklichen Städten wir, die Emigranten, zufällig unser Domizil genommen hatten.“ In ähnlicher kultureller Selbstgenügsamkeit leben auch heute viele der Charlottenburger Russen. Am deutlichsten lässt sich das im ‚Astoria‘ erleben, einem Restaurant gewordenen Goldrausch am westlichen Ende des Ku’damms: Goldene Kandelaber zieren golddurchwebte Tapeten, goldenes Geschmeide prangt an heillos überschminkten Damen, goldene Armbanduhren an bärtigen Kavalieren. Bis in die Nacht spielen Live-Bands russische Versionen westlicher Klassiker, und das Astoria verwandelt sich in einen skurrilen Ballsaal. Des Russischen unkundige Gäste sind willkommen, aber nicht unbedingt vorgesehen: Erst nach einigen Minuten gelingt es dem Kellner, eine deutsche Speisekarte aufzutreiben. Darauf finden sich Köstlichkeiten wie Borschtsch: Rote-Rüben-Suppe mit wohlriechenden Brötchen, die Gogols Hauptfiguren des Romans *Abende auf dem Vorwerk bei Dikanka* gekostet haben. Wer ins Astoria kommt, will vergessen, dass Russland weit weg ist und dass Russland nicht mehr Russland ist.“ (Jens Mühling. „Wladiwostok liegt gleich hinter Charlottenburg.“ *Der Tagesspiegel* August 3, 2003)

I stare at the beautiful tree outside my window and think of Péter Nádas’s photographs that probably still hang on the wall in the Colloquium room. It was so nice that this was the year for the Hungarians. Yes, the tree tells us that time passes and things change. I have left so many places so many times, but in Berlin I found something to which I can and always will return. My family once left and they did not all return. Some did, and because of the ones that did, I was able to find and discover my family history. An incredible story of a finding, but in the end the story was too good to write down. I tried. I did not just find the facts, but the photos, the birth certificates, the letters, and the graves. I discovered the meaning of putting a stone on a grave. A person working at the Centrum Judaicum Archive in Oranienburger Straße said to me: “Most Jewish families never get anything back; they don’t find their photos. You found the treasure chest.” I really did. A history that was for so long lost and unknown now belongs to my family’s present. Personally, it will always be connected to my year at Wiko.

I came to Wiko with some advance knowledge of what it had to offer. I was not disappointed. I began my year with an intensive German course. I found the experience completely difficult but absolutely marvelous. I had to unlearn all my mistakes. I continued to take German lessons throughout the year with Eva von Kügelgen. She is an excellent teacher. In some ways, working with the German language, with the sufferings and joys of translation, was my greatest pleasure this year. I discovered a new passion, a passion for translation. I would have liked more of Wiko's activities to have taken place in German. I was disappointed by the dominance of the English language in an unhappy year when the USA and the UK were trying to dominate the world. The German course is an indispensable part of a foreign Fellow's life.

I spent most of the year working on the philosophical and musical writings of Theodor W. Adorno, this year being the centenary year of his birth. Translating one language into another, moving between music and philosophy was Adorno's theme; understanding and translating Adorno was mine. I wrote a number of essays, all of which are being published this year in English and in German, following upon their presentation as lectures at the many, many Adorno conferences I will continue to attend in the next few months. I gave 20 public lectures during my year in Berlin. Soon I will put these essays together to produce a small book: it will represent the work I did in Berlin. It will be a book about the less well-known and often unexplored concepts of Adorno's philosophy, which nonetheless are indispensable for understanding why he took philosophy so seriously in his enquiries into music, and music so seriously in his philosophy. I had not planned to write this particular book, but I have no regrets about having done so. I learnt an enormous amount about the relation between philosophy and music in a city where philosophy and music have long been two of the primary cultural ways in which and through which its people live (at least the more fortunate ones). Being in Berlin gave me an experience I had never before had: when I told people that I worked on philosophy and music, they responded: „natürlich“. I am more used to the rejoinder: “Is that really a subject?!”

I took full advantage of the cultural life of Berlin, attending concerts, operas, and theaters and visiting galleries whenever I could. I spent much time in the rehearsals of the Berliner Philharmoniker and at the opera. I will write something soon about the concept of a rehearsal.

Life at Wiko was intellectually rich, always provocative. I found the colloquia interesting, even if they confirmed my prejudice that conversation in large groups is well-nigh impossible. Many Fellows, by arrangement or interest, formed small groups. I regretted

that I did not attempt to do this, too. On the other hand, the Fellows sharing my interests were rather limited and I was under immense pressure to meet all sorts of conference and publication deadlines.

Most exciting were the public evening lectures, the political discussions, and the musical events. I enjoyed being given so many opportunities to meet the academics and intellectuals of Berlin.

Do I have complaints? There's an old joke: An old Polish Jew is asked why he wants to leave Poland and move to Israel. The Polish government official asks him: "Why do you want to leave when we gave you so much, a fur coat, a job, a car, an apartment?" The old Jew says: "Yes, thank you. I can't complain." The official asks: "Why, then, do you want to leave and go to Israel?" The old Jew says: "Because there I can complain!"

Yes, I can complain about this and that. But really Wiko's library service alone or just the generosity of its staff cancels out any complaint. With a smile on my face, I wonder why my only real complaint is that somehow Wiko cannot seem to make any of its rules for the Fellows' lives comprehensible. I don't know why it is. It does not seem to be a matter of language or expression. Perhaps it's just a reflection of an institution that regrets so deeply that it has to be rule-bound.

Many thanks.



ENTSCHEIDEN IN KRITISCHEN
SITUATIONEN:
KOMPLEXITÄT UND RISIKO,
FEHLER UND SICHERHEIT
GESINE HOFINGER

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Ende August, in Remseck. Die Kisten sind ausgepackt, jetzt setzt das ganz normale Nachumzugs-Chaos ein. Den Schreibtisch einräumen, eine Mülltonne organisieren, den Schulanfang vorbereiten, Tagesmutter finden, Vorlesungen vorbereiten, den Projektantrag fertig schreiben, Zugang zur Unibibliothek beantragen, den Rasen mähen. Liebe Frau Hofinger, bitte denken Sie an den Abschlussbericht? – Ach ja, der Bericht. „Durchgerutscht“, wie ein Kollege mir auf meine letzte drängende E-Mail schrieb, was denn mit der Überarbeitung eines gemeinsamen Artikels sei.

Ein kleiner menschlicher Fehler, im Forschungsjargon Human Error, nicht der Rede wert, es ist ja mit einigen Abenden am Rechner und einer Entschuldigungsmail getan. Keine Folgen, weder kurz- noch langfristige. Kein Sicherheitsthema also. Lustig nur, weil ich mich mit solchen und anderen menschlichen Fehlhandlungen und ihrer Entstehung in

meiner Arbeit befasse. Allerdings mit menschlichen Fehlern, die über den Bereich der individuellen Überlastung durch Neuordnung des Lebens hinausgehen: *Menschliches Entscheiden und Handeln in Hochrisikobranchen* (die ich selber gerne *high reliability organisations* nenne) wie Luftfahrt, Medizin, Chemieindustrie. In den letzten Jahren habe ich mich zunehmend auf das Thema *Entscheiden in kritischen Situationen* im Bereich der *operativen Medizin* (Anästhesie und Chirurgie) konzentriert.

Die Komplexität menschlicher Entscheidung unter den Bedingungen der Komplexität und Unsicherheit nicht auf einfache Wahlen zwischen bekannten Alternativen zu reduzieren, sondern auf Basis einer Handlungstheorie ganzheitlich zu erklären, das ist das Programm des Instituts für Theoretische Psychologie in Bamberg, an dem ich bei Dietrich Dörner gelernt und gearbeitet hatte. Wir wollen erklären, wie eine Absicht oder Motivation entsteht, ein Ziel ausgewählt wird, ein Plan gefasst wird, wie Handlungen ausgeführt und kontrolliert werden und wie Lernen über Reflexion stattfindet. Die Erklärung muss Emotion, Motivation, Denken und Gedächtnis verbinden. Den sozialen Kontext einzubeziehen ist v. a. bei der Analyse von Daten aus dem „Feld“ wichtig, also z. B. bei der Analyse von Episoden aus einem OP. Zusammen mit Kollegen hatte ich in den Jahren vor dem Wiko-Jahr angefangen, bestehende Ansätze, das Wissen um die menschlichen Schwächen zur Veränderung durch Training und organisationale Maßnahmen nutzbar zu machen, zu systematisieren und zu evaluieren.

Dann kam die Einladung, an der Gruppe „Sciences of Risk“ am Wiko mitzuarbeiten. Als ich mir ein Projekt für das Jahr aussuchte, tat ich dies voll Überschwang – ein großes Projekt für ein großes Jahr. Die Human-Error/Human Factors-Forschung, die Risikoforschung und die Forschung zum Umgang mit Komplexität verbinden, unsere Arbeit auf theoretisch sichere Füße stellen. Ein praxisorientiertes Buch sollte es werden noch dazu.

Zugleich trafen wir als Familie die riskante Entscheidung, mit Baby in das Wiko-Jahr zu starten. (Die Risikoforschung definiert eine riskante Entscheidung als eine, bei der man die Folgen des Handelns nicht sicher – also nur als Wahrscheinlichkeit – kennt, wobei es erwünschte und unerwünschte Folgen geben kann. Die klassische Risikoforschung untersucht, wie und warum Menschen zwischen zwei Alternativen mit bekannter Wahrscheinlichkeit wählen. Komplexitätsforschung befasst sich mit Problemlagen wie der einer Familienerweiterung, einer Managemententscheidung etc.: Man kennt die möglichen Folgen der Handlung gar nicht alle, kann Wahrscheinlichkeiten nur subjektiv aufgrund der eigenen Einschätzung der Lage oder von Experten angeben, kennt nicht alle Einflussfaktoren in der gegebenen Situation.) Mit einem Vater im Erziehungsurlaub, einem begeisterten

großen Bruder, gesunden Kind und Mutter hatten wir das Risiko des Scheiterns für gering erklärt, d. h. wir hatten mögliche negative Konsequenzen als nicht so schlimm und als nicht sehr wahrscheinlich bewertet (im Gegensatz zu Unternehmen trafen wir diese Analyse nur zum Teil systematisch). Wir haben die Entscheidung nicht bereut! Julius, jetzt ein kleiner Kletterkünstler, hat uns mit seiner Entwicklung das Fortschreiten des Wiko-Jahrs angezeigt – er steht, es ist Halbzeit; er läuft, der Endspurt beginnt. Arbeiten mit Säugling heißt oft übermüdet arbeiten. Die Effekte dieses Performance Shaping Factors, aus der Human Factors-Forschung sattsam bekannt, konnte ich über Wochen spüren. Ich war froh, nicht im OP zu stehen.

Für mich war eine der wichtigsten Möglichkeiten, die das Wiko bietet, die, Arbeit und Familie gut verbinden zu können: Kurze Wege vom Büro nach Hause, kein Stundenplan (auch kein impliziter). Dazu gehörte für mich das Kulturangebot im Haus, das ermöglichte es mir, auch in der Stillzeit Konzerte und Vorträge zu hören. Der Flügel im Saal, stets zugänglich, inspirierte einige Gesangsabende mit Luis Puelles, Lydia Goehr, Reinhard Kratz und einer Berliner Freundin, später wagte ich mich an Bossa Nova mit Tecumseh Fitch. Das Leben in der Villa Walther mit anderen Fellows und ihren Familien zu teilen, hat uns gut gefallen. Ein Haufen Kinder, die schnell lernten, sich zu verständern, eine rücksichtsvolle und nette Hausgemeinschaft. Mitzuerleben, wie andere Fellows, vor allem die Frauen, Wissenschaft und Familie vereinbaren, den Alltag organisieren.

Als wir in Berlin ankamen, hatte ich einen Stapel Literatur im Gepäck, zu dem sich bald weitere Stapel aus der unvergleichlichen Bibliothek gesellten. In die Euphorie des Anfangs mischte sich bald die Erkenntnis, dass dieses Buch nicht in einem Jahr zu schaffen sei. Ein Buch anzufangen, das lange braucht, wenn man ein Baby im Gepäck hat und noch nicht weiß, was nach dem Wiko kommt, war mehr, als ich mir zutrauen und zumuten wollte. Also stand eine Umlanung an (Komplexitätsmanagement verlangt als eine Schlüsselkompetenz Flexibilität und die Fähigkeit zur Umlanung – wie diese zu lehren seien, haben wir noch nicht herausgefunden). Der Anfrage eines befreundeten Anästhesisten, mit ihm und meinem Berliner Kollegen Cornelius Buerschaper ein Buch über „Human Factors in der Akut-Medizin“ zu schreiben, das die *essentials* der Problemlöseforschung und Human Factors-Forschung sowie Veränderungsdeen praxisnah darstellt, sagte ich gerne zu. Dieses Buch ist im Wiko-Jahr weit gediehen. Es ist nicht fertig geworden, aber es wird zum vereinbarten Datum beim Verlag sein. In der Literatur zu wühlen, welche Wonne! Artikel sammeln zu allen behandelten Gebieten, endlich lesen dürfen ohne Produktionsdruck (ein

Wort, das ich von Anästhesisten gelernt habe: Loslegen, wenn man noch nicht bereit dafür ist, weil jemand – der Chirurg, das Forschungsprojekt – drängt).

Im Rückblick teilt sich das Jahr für mich in drei Abschnitte, bis Weihnachten, bis Ostern, danach. Allen gemeinsam waren die wöchentlichen Kolloquien, die ich bis zum Schluss genossen habe. So viele Themen, mit denen ich mich niemals ausführlicher beschäftigt hätte, so viele Vortragsstile und Wissenschaftskulturen, Anmerkungen anderer beim folgenden Mittagessen – der Dienstagnachmittag war oft noch dem Nachlesen und Nach-Denken gewidmet. Die ausführliche Beschäftigung mit der Theoretischen Biologie gehörte für mich zu den Extras im Wiko-Jahr. Durchgängig in diesem Jahr auch die Frage des Clash of Cultures – Geisteswissenschaften versus Biologie. Die Diskussionen fand ich zum Teil akademisch ritualhaft, aber Fragen wie die der Übertragung der Evolutionsmetapher in die Sozialwissenschaft und vor allem die beiden eigenen Diskussionsveranstaltungen, von Georg Striedter, Raghavendra Gadagkar und Kathleen Thelen veranstaltet, sehr nützlich. In diesen „Kulturgeggnungen“ konnte ich ein Stück meiner Arbeit wiederfinden: Die Wichtigkeit gemeinsamer „mentaler Modelle“ beim Problemlösen in Gruppen (worum geht es gerade, was ist das Problem, was wissen wir darüber, welche Lösungen kennen wir?). In Arbeitsteams sind solche gemeinsamen mentalen Modelle Grundlage kooperativen Handelns, sie in einer Gruppe herstellen zu lernen ein wichtiges SicherheitstHEMA, ihr Fehlen eine häufige Unfallursache. In den Diskussionen nach den Kolloquien war zu spüren, wie man sich erst nicht versteht, dann über das Diskutieren anfängt, eine gemeinsame Sprache zu finden, sich intuitiv einzudenken – ob es richtig verstanden ist (im Sinne der Intention des Sprechers) konnte man am Mittagstisch manchmal erfahren, manchmal nicht.

Bis Weihnachten arbeitete ich noch unregelmäßig und nicht so viel, wie ich gerne gewollt hätte. In der wertvollen Zeit saß ich dann aber wie festgeklebt in meinem Büro, fasste den eigens angeschafften Tischtennisschläger nicht an und auch der Clubraum sah mich kaum. Auf diese Art schaffte ich dann mehr, als in der Uni mit mehr Arbeitszeit möglich gewesen wäre. Mitgebrachte Verpflichtungen verschwanden eine nach der anderen von meiner Agenda, der Projektbericht, Buchkapitel, zwei Artikel über unser Anästhesieprojekt. Und trotzdem fand sich Zeit zum Lesen! Und die Ideen zum Human Factors-Buch wurden konkreter.

Nach Weihnachten nahm ich wöchentliche Arbeitstreffen mit meinem Berliner Kollegen auf, so dass die Konzeption des gemeinsamen Buchs schnell gedieh. Ich hatte zwei Vorträge für Berliner Institute zu schreiben, und das Kolloquium wollte gehalten sein.

Dazu trat nun die Vorbereitung der Jahrestagung der Plattform „Menschen in komplexen Arbeitswelten“; diese Plattform ist ein interdisziplinärer Zusammenschluss von Human Factors-Experten aus verschiedenen Branchen und Universitäten. Insgesamt ein ruhigerer Abschnitt. Durch das Wegfallen der Mittagsstillzeiten nahm ich auch mehr am Wiko-Leben teil. Tischtennis als Wintersport, angeregte Tischgespräche. Familiär trafen wir in dieser Zeit die Entscheidung, nicht nach Bamberg zurückzukehren, sondern in die Stuttgarter Region zu ziehen; der Angelpunkt sollte für die nächsten Jahre die Praxis meines Partners sein, ich würde mich in der Region nach Forschungsmöglichkeiten umsehen. Diese Entscheidung war das Ende eines komplexen Problemlösungsprozesses, den ich selber amüsiert beobachtete. Zielfindung, Informationssammeln, Planen, Entscheiden, Reflektieren: die „Stationen“ der Handlungsorganisation, die wir Arbeitsteams vermitteln, waren auch für uns hilfreich. Wohin die riskante Entscheidung, die in der Wissenschaft geforderte Mobilität für die nächsten Jahre zugunsten der Familie zu verweigern, mich führen wird, kann ich noch nicht absehen.

Geprägt war dieser zweite Abschnitt auch stark durch den drohenden Irakkrieg. Der Rückzug von der „Welt da draußen“ wollte uns nicht mehr gelingen. Ich glaube, wir haben mehrere Monate fast kein anderes Thema gehabt in ratlosen, emotionalen Mittagsgesprächen. „Diskussionen“ waren das kaum – die Fellows aus aller Welt und aus vielen politischen Systemen und Religionen waren sich verblüffend einig. In diesen Gesprächen lernte ich auch zunehmend Erfahrungen von Fellows, die in Diktaturen gelebt hatten, kennen. Für diese Gespräche bin ich dankbar.

Nach Ostern kam ungewollt und unvermeidbar die Orientierung auf das drohende Ende in die Arbeit hinein, ich streckte meine Fühler wieder mehr in die Welt aus. Der familiäre und berufliche Neustart, aber auch die Wiederaufnahme der selbständigen Arbeit, die ich ein Jahr hatte ruhen lassen, wollte organisiert sein. Die Tagung der „Plattform“ fand erfolgreich statt, ein Seminar an der Hochschule für Technik in Stuttgart und eines mit Anästhesisten im Simulator. Ein Verbundprojekt zu Strategien des „Krisenmanagements in der Anästhesie“ mit mehreren Anästhesiesimulatorzentren nahm Gestalt an und wurde in die Mühlen der Ministerien eingeschleust. In Kooperation mit Chirurgen zweier Krankenhäuser begann ich ein Projekt zum „Fehlermanagement im OP“. Beide Projekte sollen wieder Forschung und Anwendung verbinden. In der Sorglosigkeit des Wiko-Lebens begann ich mit der Konzeption von Erfassungsinstrumenten, der Datenerhebung und -auswertung für das OP-Projekt, noch bevor eine Finanzierung durch Drittmittel gesichert war. Hier zeigte sich der einzige Mangel, den die Arbeitsbedingungen am

Wiko für mich hatten: Daten eingeben und auswerten ohne Hilfskräfte ist mühsam. Zum Glück wollte mein Sohn Daniel sein Taschengeld aufbessern und übernahm, was neunjährige Finger tippen können. Zugleich war der letzte Abschnitt der intensivste in der Auseinandersetzung mit den andern Fellows und Gästen. Die erwähnten Wissenschaftskultur-Seminare, die von Alex Kacelnik organisierte Tagung zu „Irrationalität bei Tieren“. In den letzten Wochen ergaben sich für mich trotz der allgemeinen Aufbruchsstimmung die fruchtbarsten Mittagstischdiskussionen mit neuen Ideen und das Gefühl: Jetzt müsste man weitermachen! Und noch so ein Jahr haben ... (aber welches Fellow hat sich das nicht gewünscht?).

Die letzten Wochen haben wir dann auch endlich das Berliner Umland genossen, Fahrradausflüge gemacht, das Eisstadion zum Skaten entdeckt und Partys in der Villa Walther gefeiert.

Als ich das Wiko im Juli verließ, war der Schreibtisch voll mit neuen Ideen und angefangenen Projekten, der Computer mit angefangenen Publikationen, der Kalender mit Adressen. Dabei das Gefühl, viel gelernt zu haben und einiges geschafft, und vielleicht war das Lernen noch wichtiger als das Schaffen. Ein Fazit zu ziehen ist mir so kurz danch nicht möglich – ich will auch dieses wunderbare, reiche Jahr nicht auf ein Ergebnis festlegen. Stattdessen möchte ich mich noch einmal bei den Wiko-Leuten bedanken, die dieses Jahr ermöglicht haben und so unvergesslich haben werden lassen.



A LONG BOUT OF SOME PAINFUL ILLNESS

JOHN HYMAN

I am currently Fellow and Praelector in Philosophy at The Queen's College, Oxford and Chairman of the Faculty of Philosophy at Oxford University. I have held visiting appointments at Swarthmore College, Pennsylvania; at The Hebrew University, Jerusalem; and at the University of Tel-Aviv. I spent 2001/02 as a Scholar at the Getty Research Institute, Los Angeles. My main publications are on topics in aesthetics, metaphysics, epistemology, and the philosophy of mind. My main non-academic activity during the last ten years has been concerned with asylum and immigration. I served as a member of the Executive Committee of Asylum Welcome, the principal charity working with refugees in Oxfordshire, for four years and as Chair of the Committee for one year, 2000/01. – Address: The Queen's College, Oxford, OX1 4AW, United Kingdom.

My main task at Wiko was to complete a book about colour, form, and the theory of art. I arrived, with untidy drafts of six chapters out of ten and a pile of notes, intending to finish the book by Easter and to turn to a different topic in the remaining months. Instead, the last full stop appeared on my screen at two o'clock in the morning on 31 July – the day of our final farewell lunch and the day on which I returned to the UK.

This wasn't because of a hectic schedule. I travelled to other cities to give talks in philosophy departments or at conferences, but not more than half a dozen times during the year. It was the pace at which I was able to progress. So although this hadn't been the plan, my whole year was evenly filled with work on a single, wonderfully absorbing theme, punctuated by our weekly colloquium, by cycle rides around the city, by operas and

concerts and visits to museums, and by lunches or evenings with colleagues, whom I increasingly came to think of as my friends.

I suppose this sounds idyllic. I feel a little embarrassed to admit it, but it was. George Orwell said somewhere that writing a book is like a long bout of some painful illness. This one was long, and certainly not pain-free; but it couldn't have happened in a more congenial place.

The principal reason was the co-operative spirit in Wiko itself. I felt, almost as soon as I arrived, that I was in a place where the administrative staff, the kitchen staff, the librarians, language teachers, etc., all work together to make an institution flourish and take an equal share of pride and satisfaction in a place they all sustain. Coming from an averagely dysfunctional and more than averagely hierarchical Oxford college, this was a delight. And the co-operative spirit communicated itself very easily to the Fellows. Apart from a few moderately contentious discussions – just enough to keep us on our toes – there was an almost uncanny atmosphere of intellectual fellowship, for which my academic training had left me quite unprepared.

The other characteristic of the community at Wiko I shall miss was its exceptional diversity. The highlights of the year, as I remember them, involved mathematics and music, Borges and Boulez, Cairo and Zanzibar, and more. When I think about this now, I am reminded of Wittgenstein's remark that the strength of the thread is not due to one single fibre running through its whole length, but to the overlapping of many fibres.

Because of these characteristics of the place, being at Wiko affected my work profoundly, but mainly in a way that is very hard to measure. A couple of conversations with Barbara Finlay transformed one of the chapters of my book. Coinciding with her was a marvellous stroke of luck. But even more important than this, I suspect, was the constant reminder that communicating ideas is an easier and more sociable activity than philosophers generally believe. I very much hope this is visible in my book.

Now I must say a few words about Berlin. Two things in particular impressed me. First, it is wonderfully bike-friendly. The air is cleaner than in Oxford and there are more cycle lanes than in any other city I know. The ride from Grunewald through the Tiergarten and along Unter den Linden, which I probably did more than fifty times, was as exhilarating in my last week in the city as it had been when I first arrived.

Second, the city's history in the twentieth century seems – to a visitor at least – acutely visible. Many Berliners told me and showed me that much has been erased. But there is still so much to see and to absorb, even at our sedate end of the city: Gleis 17 at Grunewald

station; piles of old crockery from the Palast der Republik on sale in a tatty antique shop on the Ku'damm; and of course the Villa Jaffé itself, whose history Eva von Kügelgen recounted to my German class.

Finally, my work filled my mind for much of the last year; but it was also the year of the US/UK conquest of Iraq. Along with every other reason I have for feeling privileged to have been at Wiko, it was a valuable experience to have such knowledgeable, diverse and perceptive witnesses as colleagues during this year.



A SECOND HELPING OF WIKO ALEX KACELNIK

Alex Kacelnik investigates decision-making by “human and non-human animals” in Oxford, where he chairs the Behavioural Ecology Research Group. His approach combines evolutionary biology, experimental psychology and economics. Alex was born in Buenos Aires in 1946 and studied biological sciences at Buenos Aires University before moving to Oxford in 1974. He obtained his Ph.D. at Oxford in 1979. In addition to Oxford, he spent time at Groningen, Cambridge and Leiden. His recent publications address risk attitude, tool use, smiling and trust, the relation between evolutionary biology and psychoanalysis, the sense of time and several other areas of behavioural research. In addition to his research, Alex is also a member of the Academia Europaea and co-founder of Oxford Risk Research and Analysis, Ltd., a company dedicated to investigating decision-making in industrial contexts. His web page is <http://users.ox.ac.uk/~kgroup/>. – Address: Department of Zoology, Oxford OX1 3PS, United Kingdom.

And so my second round at Wiko has ended. I explained in last year’s report that I faced an unusual circumstance: rather than spending a single full year, I was here for two part-time years, as the organiser of a focus group on “The Sciences of Risk”. This arrangement was an experiment on the part of Wiko and one that I hope will be offered to others. There were two reasons for this arrangement, the first having to do with the planning of the work at Wiko and the second related to my personal circumstances.

First, the reasons for the long haul. My target was to work with a set of colleagues coming from a diverse set of disciplines (biology, psychology, economics, mathematics, anthropology) and I envisaged that we would form more efficient sub-groups if temporal overlap

was staggered and carefully orchestrated. Some participants came as full Fellows for the whole year, but others as guests of the Rector and spent only a few months in Berlin, so that several overlapped only partly in their stints. It was important that some came at the same time, if they shared interests and their simultaneous presence would be productive, but on the other hand the interests of some of the others were at the extreme end of the continuum and I felt that the discussions would suffer. The two-year program allowed for a degree of flexibility in planning that would not have been possible on a normal cycle.

The second reason for my part-time arrangement is perhaps the most interesting one from the point of view of repeating the experience in the future: my experimental laboratory in Oxford cannot be closed nor the graduate students abandoned for a full year. If I could not have spent 20% of my time in Oxford, I would have found it impossible to embark in this project. I arranged the time-sharing in a very flexible way: The first year, I spent most of Fridays and part of Saturdays in the Oxford lab and Mondays to Thursdays in Berlin, while the second year I switched to longer trips at greater intervals. I know that many experimental scientists face similar constraints and that because they cannot afford to leave their experimental bases they don't take full sabbaticals away. That's one reason why they are scarce among Wiko Fellows. The part-time arrangement worked. In fact, as my Oxford collaborators would say with glee, the lab had never been as productive as during the time I was mostly away... It was during this period that our beloved Betty achieved worldwide notoriety by an astonishing display of creativity. Betty is a crow whose most dramatic feat was to make a tool by bending a wire to obtain an otherwise unreachable morsel. This ability had previously been reserved to *Homo sapiens* and when a bird did it, the media went wild. While Betty carried out even more tricks in Oxford, I handled the press from my retreat in Wiko. It was also during this period that the lab produced the first experimental examples of Prospect Theory as applied to non-humans (this theory's core is the observation that people switch from aversion to appetite for risk if the same problem is framed in terms of expected gains rather than expected losses). Starlings, it turns out, do the same, and this observation demands a re-analysis of the explanations normally given for human behaviour. In summary, I can say with a degree of satisfaction and relief that yes, it is possible for an experimentalist to remove himself from the action arena and take time to think with the freedom and breadth that Wiko offers, without compromising the continuity of empirical work back at home. I do hope others consider and perhaps emulate this experience. But now I should return to Berlin.

The starting point for this multidisciplinary project was the realisation that, while uncertainty permeates all decision-making and has received a huge amount of attention from scholars from different angles, theoretical constructs of risk remain isolated from each other. Economists examine utilities and compute efficiency boundaries, biologists examine the shape of fitness functions, and psychologists dwell on distortions of perception, but few (until recently) saw the uniformity that lay behind the different findings and the benefit of cross-fertilisation. To help in bridging these gaps, we convened at Wiko for these two years, and, I hope, much was gained. All of the project's participants have become intellectually richer and broader, even if it would be exaggerated to say that we have found a common view. Differences in perspective persist, but we have learned a great deal, and I am grateful to my colleagues for all they taught me and to Wiko for the opportunity to bring them together.

I organised two workshops during my time at Wiko, the first with a highly interdisciplinary composition and the same title as the focus group (see last year's report) and the second, reflecting the intervening developments, on the broader topic of "The Limits of Rationality" (see report in *Wissenschaftskolleg Nachrichten* 13, 2003). While the first year's workshop gathered mostly fully established figures, the second year focused on the research coalface, so that mostly young and innovative experimental researchers exchanged their latest findings on when and how (and, if known: why) decision-makers do not behave the way they are expected to. Preference inconsistencies, context effects, the importance of simple rules, and bounded rationality were discussed and examined with obsessive enthusiasm and lively discussions, around examples including bees, birds, humans and even plants. While the 2002 workshop on "The Sciences of Risk" had allowed scholars from different fields to inform and educate each other, the 2003 workshop on "Limits of Rationality" allowed those who knew only too well the strengths and pitfalls of each other's work to explain, question or re-interpret each other's findings as they were presented hot from the experimental laboratory. We were all invigorated by this exercise and I am very grateful indeed to Wiko and to the Otto and Martha Fischbeck Foundation for the finances that made this possible. Workshop organisation was deceptively easy: back in the Wiko offices, Britta Cusak corresponded with the participants, made complex travel arrangements, compiled timetables, and, when the day came, received the visitors with hospitality and good humour. I am very grateful to her for her support. And life at Wiko was, as ever, made wonderfully pleasant by all the staff, from the kitchen to the library.

My final comments are an attempt to round up a question I raised in my previous report: would this year's assemblage of Fellows resemble the previous one? Would some people take recognisably similar roles as the humourist, the social facilitator, the prima donna, the colloquium inquisitor, and so on? Would the clash among natural scientists, social scientists and humanists take similar forms? Would the vagaries of postmodernists clash with the appetite for mathematical certainties of the more classically minded empirical scholars? Well, to some extent yes, we did have individuals taking some of these roles, but my full answer, I am afraid, is perhaps not surprising coming from the lips of a scientist: I think that more research is needed. I need a further two years to know. May be I'll come back.



„WENN MAN NUR WEISS, WIE WENIG
MAN WEISS, KANN ES NOCH GUT
KOMMEN“
CLAUDIA KAUFMANN

Dr. iur., geboren 1956 in Basel, Schweiz. Schulen und juristisches Studium in Basel. 1984 Promotion mit der Dissertation „Die Gleichstellung von Frau und Mann in der Familie gemäß Art. 4 Abs. 2 Bundesverfassung“. 1985 Umzug nach Bern. 1985–2003 in der Bundesverwaltung tätig, u. a. als erste Leiterin des neu geschaffenen Eidgenössischen Büros für die Gleichstellung von Frau und Mann (1988–93), Stellvertretende Generalsekretärin und Leiterin der Rechtsabteilung des Eidgenössischen Departements des Innern (EDI) (1993–95) sowie als Generalsekretärin des EDI (1996–Jan. 2003). Zahlreiche Publikationen und Vortragstätigkeit zu gleichstellungs-, sozial- und rechtspolitischen Themen. – Adresse: Kramgasse 30, 3011 Bern, Schweiz.

Der Satz des Schweizer Schriftstellers Robert Walser (hier im Titel zitiert), der einen Großteil seines Lebens von der Öffentlichkeit unbeachtet, verkannt und vereinsamt in einer psychiatrischen Klinik verbrachte und dessen 125. Geburtstag am 15. April 2003 zum Anlass für umso breiter gefeierte Ausstellungen und neue Publikationen seiner Schriften genommen wurde, sollte meinen viermonatigen Aufenthalt als Gast des Rektors am Wiko begleiten und prägen. Das Portrait des dreißigjährigen Robert Walsers ergänzt mit seinem Zitat „Wenn man nur weiss, wie wenig man weiss, kann es noch gut kommen“, begegnete mir gleich am Tag nach meiner Ankunft als Postkarte in der Buchhandlung beim Literaturhaus: Erkenntnis, Vorhersage und Bestätigung für all das, was mich in meiner Berliner Zeit erwartete. Dass Walsers Sprache untrüglich den Schweizer verrät, machte den Spruch für meine eigene Situation im internationalen Kreis der Fellows zusätzlich passend.

Jedenfalls verschickte ich in der Folge nicht nur die Postkarte vielfach meinen Bekannten, Freundinnen und Freunden quasi als vorweggenommenes Fazit meiner Wiko-Zeit, sondern stellte die Karte auch auf meinem Schreibtisch auf – weniger als Mahnfinger, denn vielmehr zur Ermunterung und Bestätigung, die ich nach dem einen oder andern Dienstagskolloquium, aber auch nach gewisser Lektüre dankbar annahm.

Unter dem Arbeitstitel „Förderungsmaßnahmen: Geeignete Instrumente zur Durchsetzung der Menschenrechte?“ versuchte ich, staatliche Förderungsmaßnahmen in den drei Bereichen Gleichstellung von Frau und Mann, Antirassismus sowie Rechte für Menschen mit Behinderungen zu beurteilen, einzuordnen und insbesondere auf ihre Eignung hin zu untersuchen. Ausgangspunkt meiner Arbeit bildeten die in ausgewählten europäischen Staaten und in den USA bestehenden Rahmenbedingungen, gesetzlichen Voraussetzungen sowie die jeweiligen staatlichen Durchsetzungsorgane. Besondere Bedeutung kam dabei den Instrumenten der EU und ihrer neuesten Entwicklung zu.

Neben einer Typologisierung der bereichsspezifischen Maßnahmen primär aus juristischer Sicht (nach den Kriterien rechtshistorische Entwicklung, Zeitachse ihrer Anwendung, Rechtsgrundlagen, normative Dichte und rechtliche Ausgestaltung, Verbindlichkeitscharakter, Durchsetzungsmöglichkeiten und -ansprüche, Akteurinnen und Akteure, Adressatenkreis, vorgesehene Berichterstattungs- bzw. Controllingpflicht und Evaluationsklauseln) stand die Frage im Zentrum, welche Konzeptionen hinter den einzelnen Maßnahmen stehen, welches Verständnis von Geschlechtergleichstellung, Rassismusbekämpfung und Förderung der Rechte von Menschen mit Behinderungen deutlich werden. Kohärenz bzw. Widersprüchlichkeit der Konzeptionen galt es zu untersuchen wie auch die Fragestellung des angewandten Menschenrechtsverständnisses generell. Wie haben sich die theoretischen Konzepte namentlich seit den 60er Jahren entwickelt, in welchen in den USA die staatliche Antidiskriminierungs- sowie aktive Förderungspolitik (*affirmative action*) zuerst für die tatsächliche Gleichstellung von ethnischen Minderheiten, dann auch bezüglich der Geschlechter konkretisiert wurde, und in den 80er Jahren in Deutschland und der Schweiz weitgehend als Vorbild für die eigene Geschlechtergleichstellungspolitik, in den 90er Jahren auch für die staatlichen Antirassismustätigkeiten diente? Behalten die damaligen Entwürfe auch für das heutige Staatsverständnis ihre innernationale wie auch internationale Gültigkeit? Ist ihre aktuelle Anwendung weiterhin effektivitätsversprechend? Welche Auswirkungen zeigt die Globalisierung auf die Umsetzung der Menschenrechte? Ist der heutige Föderalismus, wie er bspw. jeweils Kanada, Deutschland

oder die Schweiz kennzeichnet, für die Durchsetzung von Menschenrechten strukturell eher hinderlich oder förderlich? Welche Rahmenbedingungen und spezifischen Voraussetzungen müssen geschaffen werden, um einer einheitlichen, flächendeckenden Strategie in einem föderalistischen Staat zum Durchbruch zu verhelfen? Und schließlich: Ist die in den letzten vierzig Jahren häufig vorgenommene Bezugnahme vom einen thematischen Bereich auf die konkreten Förderungsmaßnahmen in einem jeweils anderen sinnvoll bzw. rechtspolitisch und inhaltlich opportun?

Auffällig wird bei der Vertiefung all dieser Aspekte eine wesentliche Verlagerung der Gewichtung bei der Begründung der konkreten Menschenrechtspolitiken. Standen früher Fragen der Gleichheit, Gerechtigkeit und institutionellen Ansprüche auf Verfassungsstufe oder gar völkerrechtlich garantierte Rechte im Vordergrund, wird in neuerster Zeit häufig ein anderer Ansatz betont. Die Durchsetzung von Menschenrechten wird oft aus einer utilitaristischen und ökonomischen Perspektive betrachtet und legitimiert. Chancengleichheit also nicht, weil es die Gerechtigkeit erfordert, sondern weil sie sich lohnt und rechnet. Diese auf Effizienz- und Nützlichkeitslogik konzentrierte Würdigung bedeutet gleichzeitig auch eine Einengung der Thematik auf eine individualistische, quasi ökonomisch orientierte Fragestellung. Die Umsetzung der Menschenrechte wird ökonomisiert und damit auch privatisiert. Die strukturelle Ebene wird vernachlässigt; der politische, grundrechtliche Gehalt droht verdrängt, teils ganz verloren zu gehen.

Besonders deutlich wird dies gegenwärtig an der Rezeption des *gender mainstreaming*, eines in der Entwicklungszusammenarbeit erprobten Konzepts, das von der EU im Zusammenhang mit dem Vertrag von Amsterdam für die gesamte Geschlechtergleichstellungspolitik weiterentwickelt und verabschiedet wurde. Als ehrgeizige Konzeption sieht die EU vor, dass die Sensibilität für den geschlechterspezifischen Blick und die daraus folgenden gleichstellungspolitischen Maßnahmen in den unterschiedlichen Sachbereichen von Anfang an mitgedacht und mitbedacht werden: die Gleichstellung von Frau und Mann also als Querschnittsaufgabe, als weiterhin politischer Auftrag, der an der Verbesserung heutiger struktureller Barrieren und Hindernisse für die Gleichstellung anzusetzen hat. Vieles aber, was derzeit beansprucht, Umsetzung dieser Konzeption zu sein, bestätigt den hier aufgezeigten Trend hin zum *gender mainstreaming* als ökonomischen, teils gar primär betriebswirtschaftlichen Ansatz, nicht mehr als politisches Konzept, sondern privatisierte Methode, nicht mehr strukturell ausgerichtet, sondern individualistisch ausgeprägt – und schließlich vor allem weit entfernt von menschenrechtlichen Grundsatzüberlegungen.

Eine ähnliche Entwicklung scheint sich auch im Antirassismusbereich abzuzeichnen. Die Notwendigkeit, den verschiedenen Ethnien und Minderheiten Chancengleichheit und Teilhaberechte in den verschiedenen Sach- und Lebensbereichen zu garantieren, wird in Europa – stark geprägt vom amerikanischen Vorbild – immer mehr mit der Berücksichtigung der gesellschaftlichen *diversity* begründet. Die in der Bevölkerung vertretene Breite an ethnischen, kulturellen und sozialen Gruppen soll – zumindest was die verschiedenen Ethnien anbelangt – auch im Bildungs- und Ausbildungsbereich sowie im beruflichen Kontext Berücksichtigung finden. Dies nicht mehr, wie anfänglich bei der Entwicklung erster Maßnahmen, aus Gerechtigkeitsgründen, sondern deutlich motiviert durch das Eigeninteresse der Gesellschaft, von dieser Vielfalt auf unterschiedliche, nicht zuletzt wiederum wirtschaftliche Weise profitieren und daher auf diese potentiellen Kräfte und dieses Wissen nicht verzichten zu können.

Es drängt sich auf, dass diese markante Veränderung der Legitimation von Förderungsmaßnahmen und der Konzeptionen zur Umsetzung der Menschenrechte schlechthin unmittelbare Auswirkungen auf die künftigen rechtlichen Regelungen, die Rahmenbedingungen, die Wahl der Instrumente sowie auf die Ausgestaltung der Durchsetzungsorgane haben werden. Es zeichnet sich hier in erster Linie ab eine formale Deregulierung und eine damit verbundene geringere Normendichte einerseits sowie die inhaltliche Lockerung bisher verbindlich ausgestalteter Bestimmungen und die Begrenzung der Durchsetzungskompetenzen der Umsetzungsorgane andererseits.

Neben dem großen fachlichen Erkenntnisgewinn bleibt für mich als Praktikerin, die sich in den letzten zwanzig Jahren beruflich neben politischer Arbeit in erster Linie mit der Umsetzung von Wissenschafts- und Forschungsergebnissen in unterschiedlichsten Themen und vor allem häufig in mehreren Bereichen gleichzeitig beschäftigt hat, eine wesentliche nachhaltige Erfahrung: die Gelegenheit, sich in Muße und ohne äußeren Druck auf eine Fragestellung einzulassen, die intellektuelle Neugierde voll und ganz zu befriedigen, sich auf das frei gewählte Thema zu konzentrieren und es ohne jeden Zwang oder fremdbestimmten Zeitplan zu vertiefen.

Für mich bedeutete dieser Prozess hervorragende Bereicherung und sinnlichen Genuss zugleich. Lesen, Denken, Lernen, interdisziplinärer Austausch mit Kolleginnen und Kollegen erlangen dank der einmaligen Rahmenbedingungen des Wiko eine neue Qualität. Dieses Erlebnis wie auch der geschärzte Blick für die aufmerksame und in jeder Beziehung unterstützende, im besten Sinn des Wortes fürsorgliche Betriebsführung des Wiko werden

mich bei meinen nächsten beruflichen Schritten begleiten und Vorbild sein. Wie selten zuvor wurde mir bewusst, welche Bedeutung Zeit, Sorgfalt und echtes Interesse für die optimale Gestaltung einer Institution haben und die in ihr gelebte Kultur vorgeben können. Das Wiko ist hierfür erste Referenz und in jedem Fall zur Nachahmung empfohlen – auch für nichtakademische Einrichtungen! Mir liegt daran, für die einzigartige Gelegenheit zu diesem Aufenthalt und die damit verbundene in jeder Hinsicht produktive Atmosphäre von Herzen zu danken.

Schließlich ermöglichte mir das Wiko aber nicht nur optimale Rahmenbedingungen rund um die Wallotstraße, sondern ebenso in Berlin generell. Die Unbeschwertheit des Wiko-Alltags und die umsichtige Betreuung schafften Freiräume, die ich gerne ausnützte. Mit meinen häufigen Theaterabenden, den regelmäßigen Museen- und Ausstellungsbesuchen sowie mit den ausgiebigen Spaziergängen in den verschiedenen Stadtteilen an den Wochenenden nährte ich mein kulturelles Interesse und tauchte mit größtem Vergnügen in das Großstadtleben ein.

Mein Bericht über den Aufenthalt am Wiko würde lückenhaft bleiben, erwähnte er nicht ein Ereignis, das in erster Linie als Faktum selbst, ebenso aber auch als Anlass für viele nachdenkliche und kontroverse Debatten unter den Fellows wie auch in der medialen Öffentlichkeit prägend war: der Krieg im Irak und die damit verbundenen verheerenden Folgen. Der politische und wirtschaftliche Konflikt, das menschliche Leid und die geführte Werte-Diskussion waren daher selbstredend ein weiteres zentrales Thema meines Aufenthalts.



HEUREKAJAHР IMRE KERTÉSZ

Imre Kertész wurde 1929 in Budapest geboren. Er ist jüdischer Herkunft. 1944 wurde er nach Auschwitz und von dort nach Buchenwald verschleppt, wo er 1945 befreit wurde. Seit 1953 lebt er als freier Schriftsteller und Übersetzer deutschsprachiger Autoren. 1975 publizierte Kertész seinen ersten Roman *Sorstalanság*, 1975 (*Mensch ohne Schicksal*, 1990; *Roman eines Schicksallosen*, 1996), der auf seinen Erfahrungen von Auschwitz und Buchenwald aufbaut. Diese Erfahrung hat Kertész in *A kudarc*, 1988 (*Fiasko*, 1999) geschildert. Dieser Roman ist der zweite Teil einer Trilogie, deren erster Teil *Sorstalanság* und deren dritter Teil *Kaddis a meg nem született gyermekért*, 1990 (*Kaddisch für ein nicht geborenes Kind*, 1992) ist. Andere Prosawerke sind: *Az angol lobogó*, 1991 (*Die englische Flagge*, 1999), *Gályanapló*, 1993 (*Galeerentagebuch*, 1993), *Valaki más: a változás krónikája*, 1997 (*Ich – ein anderer*, 1998) und *Felszámolás*, 2003 (*Liquidation*, 2003). Seine Vorlesungen und Essays sind in *A holocaust mint kultúra*, 1993 (*Der Holocaust als Kultur*, 1999), *A gondolatnyi csend, amíg a kivégzősztag újratölty*, 1998 (*Eine Gedankenlänge Stille, während das Erschießungskommando neu lädt*, 1999) und *A száműzött nyelv*, 2001 (*Die exilierte Sprache*, 2003) erschienen. Kertész hat 1995 den Brandenburgischen Literaturpreis, 1997 den Leipziger Buchpreis zur Europäischen Verständigung, 2000 den Herder-Preis und den WELT-Preis und 2002 den Hans-Sahl-Preis und den Nobelpreis für Literatur erhalten. – Adresse: Suhrkamp Verlag, Lindenstraße 29–35, 60325 Frankfurt/Main.

Ja, „Heurekajahr“: ich nehme einfach den Titel meiner Nobelpreis-Rede zu Hilfe, die ich in Stockholm am 10. Dezember 2002 unter dem Titel „Heureka“ hielt. Nur, während das Wort bei der Stockholmer Vorlesung ironisch gemeint war, soll das Wort hier etwas ganz

anderes bedeuten. Dadurch dass ich schon mehrere Male als Kandidat für den Nobelpreis nominiert gewesen sein soll, war ich schon seit längerem sozusagen „bedroht“. Nie habe ich aber diese Gerüchte ernst genommen, nie habe ich mich ernsthaft darauf eingestellt, dass ich ihn – den Nobelpreis – wirklich bekommen könnte.

Und dann kam er doch. Ich wurde gebeten, am 10. Oktober 2002 um 13.00 Uhr in der Nähe meines Telefonapparats zu sein. Meine Frau und ich gingen ins Wissenschaftskolleg und sperrten uns in meinem Arbeitszimmer ein. Das Haus wimmelte schon von Journalisten und Fotografen, die uns, während wir durch den Garten ins Haus eilten, von allen Seiten ansprachen. Wir waren zum ersten Mal wirklich verblüfft: Erst jetzt gestanden wir uns ein, dass all diese Vorzeichen anscheinend ernst genommen werden müssten.

Hier ist die Stelle, an der ich meine tiefe Dankbarkeit gegenüber dem Wiko ausdrücken möchte. Denn die Hilfe des Wissenschaftskollegs hat uns vor einem Chaos und einem unüberschaubaren Durcheinander gerettet. Ich bedanke mich für diese Hilfe, weil ich ohne diesen Schutzschild, unter dem ich mich bis heute, dem letzten Tage des akademischen Jahres, verstecken konnte, nicht die Arbeit hätte leisten können, die ich so, trotz allem, zu einem guten Ende gebracht habe.

Natürlich hat der Preis meine Pläne für den Aufenthalt am Wiko verändert. Ich hatte vor, lange Gespräche mit Kollegen zu führen, neue Freunde unter den Fellows zu gewinnen, lange Nachmittage in der Bibliothek zu verbringen. Teilweise – vor allem was die neuen Freundschaften betrifft – sind diese Pläne auch in Erfüllung gegangen. Andererseits konnte ich am gesellschaftlichen Leben des Kollegs viel weniger teilnehmen, als ich wollte. Glücklicherweise war meine Vorlesung für das Dienstagskolloquium im Oktober 2002 unter den ersten des akademischen Jahres platziert. Ich las meinen Essay: „Die exilierte Sprache“.

Ich kam ans Wissenschaftskolleg mit dem Plan, meinen neuen Roman mit dem Titel „Liquidation“ zu Ende zu schreiben. Das ist mir auch gelungen: Mein Roman wird Ende September 2003 beim Suhrkamp Verlag erscheinen (vorher noch in Ungarn), und er wird meine Dankesworte an das Wiko beinhalten. Außerdem habe ich noch meine schon erwähnte Rede für Stockholm geschrieben, ein Büchlein, das auf Ungarisch und auf Deutsch erschienen ist (Suhrkamp Verlag bzw. Magvető Kiadó).

Eigentlich habe ich so alles verwirklicht, was ich mir für das Wissenschaftskollegs vorgenommen hatte. Zum Schluss möchte ich neben meiner Dankbarkeit auch meine Bewunderung und Anerkennung für eine Institution zum Ausdruck bringen, die mir wieder einmal gezeigt hat, wie inspirierend ein multikulturelles geistiges Zentrum in der Mitte Europas sein kann.



ONCE UPON A TIME
KÁZMÉR TAMÁS KOVÁCS

Architect; Ph.D. at the Ion Mincu University of Architecture and Urban Planning in Bucharest. Visiting Professor: Ion Mincu University of Architecture and Urban Planning in Bucharest and Babeş-Bolyai University in Cluj. Architectural practice: restoration, architectural and urban planning. Current research interest: garden theory. Recent projects: 2003, Inn on the Balaban in Bran. Restoration of a Roman Catholic church in Sfântu Gheorghe. Library tower in Daia. Recent publications: *Timpul monumentului istoric*. Bucharest, 2003. “L’Église comme Organisation non gouvernementale.” In *Un regard critique sur la réhabilitation du patrimoine architectural*. Bucharest, 2003. “Measuring Plečnik.” In *Measure in Architecture*. Skopje, 2003. “Az útvesztő.” In *X International Conference on the Built Heritage Tusnad 2001*. Cluj, 2001. “Thresholds.” In *New Europe College Yearbook 1998–1999*. Bucharest, 2001. “Narkissosz tükre.” *Korunk* 5 (2000). – Address: Str. Vasile Goldiș 1/40, 520067 Sfântu Gheorghe, Rumania.

Alice opened the door and found that it led into a small passage, not much larger than a rat-hole: she knelt down and looked along the passage into the loveliest garden you ever saw. How she longed to get out of the dark hall, and wander about among those beds of bright flowers and those cool fountains ...¹

¹ Carroll, Lewis. *Alice's Adventures in Wonderland*. London: Everyman, 1993, 10.

Spring was just about setting in when I arrived at the Wissenschaftskolleg. The garden, although scented and humid, was but a mere promise of what was to come. The still surface of the lake, inert in appearance, reflected barren branches, faint shades of coloured greys remnant from last year. Everything was yet to happen – for someone who was to study gardens, I found the right time to begin. And the right place. Later, as the weeks went by, foliage filled the trees and bushes; shy early flowers started a seemingly endless succession of colourful and perfumed blossoms.

Studying gardens to know better about architecture had been my desire for some time. The idea I wanted to develop – and following this successful beginning, I now want more than ever – was to construct an idiosyncratic theory of architecture based on a theory of the spaces surrounding architectural objects proper. Receiving the Mellon fellowship was the eagerly-awaited opportunity to commence my research on gardens and landscape: it was only now that I could finally begin reading and thinking about them in a consistent and purposeful manner. To my delight, the matter proves not only worthwhile; its implications reach way beyond my most ambitious hopes and shall eventually provide ground for my theoretical preoccupations for years to come. Having had to prepare the Dienstagskolloquium gave a boost to my work by forcing me to tailor the yet rather raw mass of knowledge into a structured shape. In following my bookish enquiries, the help provided by the Wiko library cannot be praised enough. By bringing to hand every book I could think of, besides owning most of the necessary bibliographic reference and providing the friendliest milieu to consult it, to me the library is the embodiment of The Library. The more so because it allowed me to be a recluse at the Kolleg when I wanted to read and write. Those were times of quiet and happy work in room W4 to be remembered for their precious rarity.

However, I often left this peaceful harbour driven by restlessness, curiosity – and by my sense of duty. For besides learning about them, looking at gardens in their material, ever-changing presence is part of the enterprise I have in mind. I went out quite a lot, spending time and most of my ambulatory energies to walk many kilometres across parks, gardens and woodlands. In this sense too, Berlin was of immense importance. It is a green city. It has a great variety of public gardens – from castle parks to tiny urban squares, from *Laubenpieper* colonies to socialist leisure establishments for the working people. Amidst one of the latter, hidden in an extreme-oriental suburb of Berlin, there is even a splendid, recently created Japanese Zen garden. The city also has a dramatic recent history: on the vast areas formerly occupied by the infamous *Mauer* and its no-man's-land, there are

interesting examples of newly laid gardens. Besides all this, the Kolleg being situated in a proper “garden city” development, it seemed destined to be the auspicious setting for the debut of my project.

The voyage to the Erholungspark Marzahn, though endeavouring, was merely a fore-shadow of the longer study trips I undertook within Germany, Denmark and France with the intention of visiting several gardens and parks of different age, size and significance. Friends from Berlin took me to see the castle park in Bad Muskau on the Polish border (literally on it: the Neiße happens to be the park river, so the ominous Oder-Neiße frontier ridiculously cuts the castle park in two); Danish friends took me to see a newly “re-naturalised” river delta in Western Jutland, thus showing me a real – though artificial “by nature” – landscape restoration. Re-visiting the art-park of the Insel Hombroich Foundation in Neuss was as illuminating as it was delightful. On a very different scale and almost in a different cultural context, this experience is fairly comparable to my re-visiting of the gardens in Versailles after more than twenty years since my first and only other journey there.

The hundreds of photographs I took during these wanderings are useful by-products because they will hopefully do a good service by illustrating my future lectures. Already a colleague and friend from the Bucharest School of Architecture and I have started to shape a new series of lectures bearing the title: A Theory of the Non-Built Spaces, where my newly acquired knowledge might prove reasonably useful.

Yes, the Wissenschaftskolleg is in many senses – as a matter of fact, in every sense – the best imaginable place for performing academic work. From the first minute of my arrival, I was cordially taken care of, comfortably put up and gently led by the hand until I could manage by myself. All this was more than mere efficiency and competence: it was human concern to help one find one’s place. Everything was put into place with infinite care to permit one to see to one’s work under the best circumstances. Indeed, this story is about the Wiko people: the wonderful men and women inhabiting the Kolleg who, on the one hand, work hard to ensure that all things go smoothly; I can imagine what it takes to achieve this aim without visible effort. On the other hand, there is the group of Fellows who work hard on their research and give talks, thus responding to the work of the others. Staff and Fellows together are the performers and audience of impressive academic events: there was an unforgettable series of colloquia, conferences, informal seminars and conversations. Even the small talk was sparkling with ideas: The Wiko people constitute one superbly diverse, brilliantly symbiotic community that I was most honoured to join when my lucky star brought me to the Kolleg. Every minute I spent there remains a valuable proof

that such a society is possible, that interest in each other's work, understanding and communication can be intensely shared, joyful and fertile. One's confidence in humankind cannot but come out strengthened, after having had the privilege of being a Wiko Fellow.

When it came time to write an account of the three months I spent between April and June 2003 at the Wissenschaftskolleg zu Berlin as a Gast des Rektors, it would never have occurred to me that such a pleasurable task should be in any way difficult – until I set myself to write it. Now why should it be problematic to speak about an experience that was in every single respect interesting, rewarding, intense? About a time that was thoroughly engaging to me in both the intellectual and the affective sense? Surely, what is to be done is a sensible report concerning my work during the time spent at this institution. Yet, it is precisely this kind of detachment that is so difficult to find when one feels hugely involved in personal terms. For the Wiko is a place with powerful identity and charm, being also fundamentally different from what one usually assumes an institution to be. Attempting to capture in words the unique quality of this place is what I should have done in the lines above. If I have failed, it is certainly because there is so much beyond words – beyond plain prose, at least – that ought to be said. Unless one can write poetry, which unfortunately is not within my means, any attempt to give an account of the Wissenschaftskolleg is bound to be insufficient.

When I left the Wallotstraße (it was scented with the blossom of the linden tree), it seemed as if I was closing behind me the door of childhood. For this is what the Wissenschaftskolleg experience is miraculously related to: an existence devoid of the worries and responsibilities of adulthood, where one is “kept” to look, learn, understand and admire. I have been a happy child for three months; of course, innocence could not be recovered. Yet tasting once again the strong flavour of unbound exploration and imagination while having already in mind a good deal to compare it with, enhanced the experience with an awareness to which actual childhood could hardly pretend. Thus, when I was nervously throwing the envelope with the key into the mailbox – will it not be lost? – I was almost re-enacting gestures of Alice fumbling with the key of the door leading to the rose garden. Except that, symmetrically, I was about to leave Wonderland for good. Gone are the roses of the Parc de Bagatelle, but the memory of their magnificence will keep me company, fading but slowly, never to be separated in my mind from the serene gravel sea of the *Garten des zusammenfließenden Wassers*.



Upper: Großer Kolloquiumsraum of the Wissenschaftskolleg

Middle: White Villa; red chestnut tree seen from room W4

Lower: Garden of Bagatelle in Paris; Garten des zusammenfließenden Wassers in Marzahn



DREI UNGELÖSTE FRAGEN REINHARD G. KRATZ

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Der Mathematiker David Hilbert, nach dem in Göttingen eine Straße benannt ist, in der ich wohne, hat im Jahre 1900 einen Katalog von 23 ungelösten Problemen formuliert, die sein Fach im 20. Jahrhundert nachhaltig beschäftigten. Seit längerem schon denke ich darüber nach, ob es solche Probleme auch in meinem Fach, der alttestamentlichen Wissenschaft, gibt. Das Wissenschaftskolleg entpuppte sich für mich als der ideale Ort, solchen Gedanken nachzugehen.

Zunächst sah es allerdings nicht danach aus. Die laufenden Verpflichtungen ragten in die Anfangszeit hinein und griffen auch gegen Ende der Zeit wieder Raum. In der

Zwischenzeit lockten die Angebote des Wissenschaftskollegs: die Kolloquien, Vorträge, Lesungen, Konzerte und vor allem die vielen Begegnungen mit größtenteils interessanten Leuten aus allen möglichen Fachgebieten und fernen Teilen der Erde, und nicht zu vergessen: die reizvollen Angebote der Stadt. Man mag dies alles als Müßiggang eitler Professoren abtun. Doch gelegentlich blitzten Ansichten und Ideen auf, wurden Töne und Klänge laut, die nicht nur die Eitelkeit bestätigten, sondern einen in geistige Unruhe versetzten, sprich: zum Nachdenken brachten.

Daneben bot sich die im universitären Alltag selten gewordene Gelegenheit zu seriöser Arbeit, in meinem Fall zum Studium biblischer und außerbiblischer Quellen der Religions- und Theologiegeschichte Israels und des frühen Judentums. Als eine Frucht dieses Studiums ist ein Bändchen über die Propheten Israels entstanden, die sich mir mehr und mehr als unauffällige Mitläufer im herrschenden politischen System der israelitisch-jüdischen Königszeit darstellen, bevor sie zu den sonderlichen Einzelgängern und radikalen Kritikern wurden, als die sie uns die literarische Tradition im Alten Testament nahe bringen möchte.

Erkundungen auf dem Gebiet der Kultgeschichte führten mich zur Militärkolonie auf der Nilinsel Elephantine, wo einmal ein Tempel des Gottes Jahu stand, der in persischer Zeit von Ägyptern zerstört und von den dort ansässigen Juden wieder aufgebaut wurde. Der Vergleich dieses in den vor Ort gefundenen Papyri gut dokumentierten Vorgangs mit dem in der Bibel erzählten Wiederaufbau des von den Babylonieren zerstörten Jahwe-Tempels in Jerusalem ist seit Eduard Meyer merkwürdigerweise nie wieder in Angriff genommen worden, obwohl mittlerweile neue archäologische und literarhistorische Erkenntnisse zu den beiden Bauprojekten vorliegen. Der Fall erwies sich als ein Musterbeispiel für das natürlich noch nicht realisierte, größere Vorhaben, anhand authentischer Primärquellen und aufgrund der kritischen Analyse der biblischen Quellen die Geschichte der literarischen Tradition und mit ihr der Theologie im Alten Testament nachzuzeichnen.

Recherchen zur Geschichte der kritischen Bibelwissenschaft im 18. Jahrhundert waren nicht zuletzt dank der kompetenten Hilfe der Bibliothekarinnen möglich, die keine Mühe scheut, die abgelegensten Ausgaben zu besorgen. Auch wenn er schon viele hundertmal in den Jahrbüchern erstattet wurde, darf er auch hier nicht fehlen: der aufrichtige Dank an den Rektor des Wissenschaftskollegs und alle Mitarbeiterinnen und Mitarbeiter von der Küche bis zu den Fellowdiensten, die es an nichts fehlten ließen.

Und die ungelösten Fragen? Die obligatorischen Dienstagskolloquien weckten zunächst meine Neugierde auf alles, was auf anderen Gebieten geforscht und gedacht wird,

in der Hoffnung, hier vielleicht auf die Fragen zu stoßen, die noch nicht gestellt wurden. Da sich das Gespräch mit den Naturwissenschaften, die ihren eigenen Stil haben, insbesondere für die alten Philologien erfahrungsgemäß als schwierig darstellt, setzte ich alle meine Hoffnungen auf die Kulturwissenschaften. Wer hier die Zukunft seines Fachs und die noch ungelösten Fragen findet, kann sich des Zuspruchs der interessierten Öffentlichkeit und des Danks der modernen Wissenschaftspolitik sicher sein. Mir ist allerdings je länger desto undeutlicher geworden, was genau man dabei lernen kann, begibt man sich doch auf ein Terrain, auf dem man die Objekte der Forschung größtenteils nur recht oberflächlich kennt und leicht den Boden unter den Füßen verliert. Auch das kann durchaus heilsam sein, um sich auf das Wesentliche zu besinnen, doch bleiben die Antworten aus.

So sah ich mich gerade durch die Auseinandersetzung mit den anderen Disziplinen schließlich wieder zurückgeführt auf das eigene Fach. Wenn ich etwas in den Dienstagskolloquien und den Gesprächen bei Tisch gelernt habe, dann dies, dass die Brisanz eines Themas nicht unbedingt im Streben nach immer neuen, fächerübergreifenden Fragestellungen und Methoden liegt, sondern darin, es Außenstehenden zu vermitteln. Das gilt auch und ganz besonders für die ungelösten Fragen.

Anders als dem Mathematiker David Hilbert ist es dem Altttestamentler nicht ohne weiteres möglich, einen Katalog von Problemen aufzustellen, an deren Lösung die Fachwelt interessiert und womit sie für die nächsten Jahre oder Jahrzehnte beschäftigt wäre. Abgesehen von den praktischen Aufgaben wie der Archäologie, der Lexikographie oder der Textedition hängt es sehr stark von Forschungstrends und dem eigenen Geschmack ab, welche Fragen als wichtig eingestuft werden und welche nicht. Mir gingen die folgenden durch den Kopf, die zu meinem Erstaunen sogar das Interesse so manchen Mitfellows fanden.

1. Religion und Theologie. Von außen betrachtet, betreibt der Altttestamentler ein doppeltes Geschäft. Einerseits ist er Religionshistoriker und untersucht die Quellen und die Geschichte zur jüdischen Religion. Andererseits ist er, je nach Religions- oder Konfessionszugehörigkeit, Theologe und untersucht die Quelle seines Glaubens, meistens im Rahmen konfessioneller (jüdischer oder christlicher) Fakultäten an staatlichen oder privaten Universitäten. Die Zwitterstellung hat etwas mit dem Gegenstand zu tun, mit dem der Bibelwissenschaftler sich beschäftigt. Nicht nur, dass dieser Gegenstand eine religionshistorische Quelle und zugleich die Grundlage heute praktizierter Religionen ist. Die Bibel selbst trägt den Zwiespalt in sich. Einerseits basiert sie auf einer alten, vergangenen Religion, der Religion des alten Israel, von der sie erzählt. Andererseits ist sie selbst das

Produkt einer neuen Religion, des nachstaatlichen Judentums, das sich dadurch auszeichnet, dass es die eigene Vergangenheit unter dem Vorzeichen des Ersten Gebots betrachtet und als Abfall vom einen und wahren Gott darstellt. Die Gegenwartsbedeutung der historischen Quelle und der Zwiespalt in der Bibel selbst sind die Gründe, warum bis heute noch keine Klarheit darüber herrscht, ob der Auftrag der alttestamentlichen Wissenschaft ein religionsgeschichtlicher oder ein theologischer oder beides in einem ist. Ich sehe die Verbindung darin, dass im Alten Testament der Übergang von der Religionsgeschichte Israels (mit der ihr eigenen Theologie) in die theologische Reflexion stattfindet, auf der die Religion des Judentums aufbaut. Zu rekonstruieren wäre demnach eine Geschichte der Theologie im Alten Testament, die die Religionsgeschichte zur Voraussetzung hat und für die theologische Rezeption und den religiösen Gebrauch in der Gegenwart offen ist. Eine antike Parallelie für diesen Zwischenstatus des Alten Testaments und eine adäquate Definition seiner religions- und theologiegeschichtlichen Eigenschaften sind noch nicht gefunden.

2. Israel und der Alte Orient. Wie die Bibel ist auch das in ihr beschriebene Volk Israel etwas Außergewöhnliches in der alten Welt. Die archäologischen Funde des 19. und frühen 20. Jahrhunderts haben die Welt des Alten Orients wieder zum Leben erweckt. Sie haben massenweise Baureste, Artefakte, Bilder und Texte zutage gefördert, die für einen Vergleich mit der Kultur des alten Israel geeignet sind. Dieser Vergleich hat zu einem doppelten Ergebnis geführt. Einerseits gibt es kaum ein Phänomen, das keine Parallelie hätte. Israel war Teil des Alten Orients. Andererseits legt das Alte Testament allergrößten Wert darauf, dass das von seinem Gott erwählte Volk Israel etwas Eigenes und von allen anderen Völkern der alten Welt verschieden sei. Und in der Tat ist nicht allein dieser Anspruch, sondern auch seine theologische Begründung und literarische Ausformulierung etwas Analogieloses. Der Anspruch, das erwählte Volk Gottes zu sein, hat Israel im Unterschied zu seinen kanaanäischen Nachbarn, den Aramäern, Philistern, Ammonitern, Moabitern und Edomitern, bis heute das Überleben gesichert, obwohl es auf demselben Boden lebte wie sie, derselben Sprachfamilie und Kultur angehörte, denselben Typus von Gott verehrte und dasselbe Schicksal erlitt: den Untergang der Monarchie und das Exil. Die verschiedenen Stufen, wie der Anspruch entstanden ist, sich im Alten Testament literarisch niedergeschlagen und zur Entstehung des Judentums geführt hat, lassen sich anhand der Quellen einigermaßen gut nachvollziehen. Warum aber gerade Israel bei annähernd gleichen Ausgangsbedingungen wie etwa Moab eine so ganz andere Entwicklung durchgemacht und überlebt hat, ist und bleibt ein historisches Rätsel, das der Aufklärung harrt.

Die Theologen neigen dazu, den unerforschlichen Willen Gottes oder die unerforschlichen Ursprünge des Volkes Israel dafür verantwortlich zu machen und können sich dafür auf die Bibel berufen. Doch die Antworten der Bibel sind eben nicht die Erklärung, sondern das Problem.

3. Das Alte Testament und die jüdische Literaturgeschichte. Die Schriften des Alten Testaments sind in einem Zeitraum von rund 1000 Jahren entstanden. Zwar weiß man, dass sie nur einen geringen Ausschnitt der literarischen Produktion Israels darstellen, doch ist es eine verbreitete Auffassung, dass sich die nicht erhaltenen Schriften in Inhalt und Form nicht wesentlich von den biblischen unterschieden hätten. Für gewöhnlich sieht man in der Bibel daher ein repräsentatives Zeugnis der israelisch-jüdischen Literaturgeschichte des 1. Jahrtausends v. Chr. Im Blick auf die jüdischen Schriften der hellenistisch-römischen Zeit ist dieser Schluss auch durchaus berechtigt. Sie setzen die biblischen Schriften in dieser oder jener Form voraus, ahmen sie nach oder kommentieren sie und bewegen sich damit im Rahmen des nachstaatlichen Judentums. Fragen werfen lediglich gewisse Sonderentwicklungen wie die apokalyptische Literatur, die Schriften der Gemeinschaft von Qumran am Toten Meer oder das Neue Testament und die übrige frühchristliche Literatur auf, die sich ebenfalls auf die alttestamentlichen Schriften beziehen, aber z. T. ganz eigene Wege gehen. Insbesondere der Anschluss der Qumranschriften an die biblische Literatur ist noch nicht hinreichend erklärt, zumal in Qumran ganz unterschiedliche Literaturbestände, darunter die biblischen Schriften, tradiert wurden und zugleich eine neue, gruppenspezifische Literatur geschaffen wurde. Hier hat die literatur- und theologiegeschichtliche Forschung noch eine große Aufgabe vor sich, die nun in Angriff genommen werden kann, nachdem die Texte vollständig ediert sind.

Doch wie repräsentativ ist die jüdische oder auch nur die biblische Literatur für die ältere Zeit und für das Judentum insgesamt? Die wenigen inschriftlichen Zeugnisse aus dem Boden Palästinas und die Archive der jüdischen Kolonie auf der Nilinsel Elephantine lassen von den Themen und Vorstellungen der biblischen Schriften so gut wie gar nichts erkennen. Sie repräsentieren ein unorthodoxes, gewissermaßen vor- oder nichtbiblisches Judentum, das in der Forschung meist als Randphänomen der Volksfrömmigkeit behandelt wird. Dies scheint aber nur eine Verlegenheitslösung für ein Problem zu sein, das in Wahrheit noch nicht gelöst ist. Könnte es sein, dass nicht das inschriftliche Material, sondern das biblische und das davon abhängige Schrifttum die Ausnahme ist und die Masse der israelisch-jüdischen Literatur einer bewussten Selektion zum Opfer fiel, so dass es kein Zufall ist, dass nur noch Reste erhalten geblieben sind? Die Antwort liegt in der

literarischen Analyse der Bibel. Auch in ihr sind Reste der althebräischen Überlieferung eingegangen, aber von unzähligen späteren Überarbeitungen überlagert. Zu den noch nicht in Angriff genommenen Problemen gehört nicht nur die Scheidung solcher Reste von ihren Überarbeitungen; vielfach fehlen auch noch die Kriterien, wie innerhalb der Überarbeitungen die verschiedenen Stadien der Überlieferung differenziert werden können. Doch so viel scheint klar: Man kann nicht ohne weiteres davon ausgehen, dass die überwiegende Mehrheit der erhaltenen Überlieferung den Hauptstrom der israelitisch-jüdischen Literaturgeschichte repräsentiert. Es ist vielmehr mit der Möglichkeit zu rechnen, dass sie eine Minderheit, um nicht zu sagen: eine Sekte, repräsentiert, die sich aber durchgesetzt hat und, trotz mancher Nebenlinien, zur Hauptlinie des antiken Judentums geworden ist. Das Verhältnis ist noch nicht ausgelotet.

Was die drei Fragen verbindet, ist der Umstand, dass die Bibel ein Größe *sui generis* ist, nicht nur im Alten Orient, sondern in Israel selbst. Ihr Geheimnis wird sich vermutlich nie ganz aufdecken lassen. Und doch scheint es mir der Mühe wert, sich ihm auf historischem Wege so weit zu nähern wie nur irgend möglich – um der wissenschaftlichen Erkenntnis wie um des religiösen Gebrauchs willen. Dass es sich lohnen kann, beweist mir ein Kompliment, das mir ein Fellow machte, das schönste, das ich je erhalten habe. Er, der von einem zweiten Leben nach dem Tode träumt, ist davon überzeugt, als englischer Adliger wiedergeboren zu werden und in Heidelberg Romanistik zu studieren. Nach meiner Vorstellung im Dienstagskolloquium flüsterte er mir zu, dass er nun gedenke, auch Theologie zu belegen und das Alte Testament zu studieren. Vielleicht, nein ganz sicher wird er die Antwort auf die drei ungelösten Fragen finden.



GRUNEWALD ENJOYED
AND REMEMBERED
WALTER LAQUEUR

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I came to accomplish a number of projects and, not unlike Christopher Columbus, ended up in different waters. My original intention was to prepare a “treatment” (Drehbuch) for two documentaries – one a portrait of my generation, the very young who left Central Europe during the Nazi era; the other on my youth. Two film companies had expressed interest in these subjects and I had dealt with these topics in books published in years past (*Thursday's Child Had Far to Go* and *Generation Exodus*). However, movies, unlike books, are expensive to produce, and as a result it took longer than anticipated to carry out these projects.

At the same time, following the upsurge of terrorism and various other forms of political violence, including the war in Iraq and its repercussions on European-US relations, I was

sidetracked and spent a considerable amount of time commenting on current affairs, writing articles, and being interviewed. I also put the finishing touches to a book entitled *No End to War*, which was published in spring of 2003 in English, German, and several other languages. Back in the 1970s, I was one of a small group that engaged in the systematic study of guerrilla warfare and terrorism. Since then this has become a very crowded field, but there still was considerable demand, for weeks almost insatiable, for analysis and comment. I do not regret this lengthy interlude (of being sidetracked); at a time of crisis there is always a strong urge to communicate one's ideas. But intellectually, these issues are not very challenging. They are complicated, that is to say there are no simple, moncausal answers, and generalizations are difficult – often impossible – simply because the sources and manifestations of terrorism vary from country to country. But the basic issues are still fairly clear, even though there is frequently considerable resistance against accepting them for psychological or ideological reasons – for instance that, in most cases, poverty is not the prime factor generating terrorism, or the idea that all ethnic conflicts can be peacefully solved. In other words, the main task in this field is not the discovery of some new laws of the hidden motivation of terrorism but repeated and patient explanation of the knowledge that has been amassed in this field. It is not so much a question of new discovery and research, but of explanation.

And so after several months I went back to an old project on Jerusalem in which I had engaged in 2000–01. This is neither a history of the city nor a sociological study; I took Jerusalem (personalities, places, events) as a starting point for reflections on the past and the future of a variety of issues including religious fundamentalism, national strife, the Kibbutz, the fate of various ethnic groups that had settled in Jerusalem, ranging from the Sefardi aristocracy and the German Jews to the Moroccans and the Russian immigrants. I was also dealing with the development of intellectual life in the city from the 1920s on. The book is based on a variety of sources, including personal experience and literature, and I was greatly helped by a number of Fellows in my year who read some of the manuscripts and made valuable suggestions.

But as important as these projects was the fact of simply staying in Berlin and at the Wissenschaftskolleg. While I know Germany fairly well and had been in Berlin many times, I had never been there longer than a few weeks. Exposure for a longer period at a time of political, social, and economic tensions was of particular interest. We explored both the neighborhood of Berlin (north and south and east) which I hardly knew as well as other parts of Germany, Switzerland, and Austria. However difficult the economic situation,

Berlin has become during the last decade something like the capital of Europe. This manifested itself in a variety of fields – the number of cultural and political events every day, as well as the number of visitors from outside the capital and from abroad. At the Wissenschaftskolleg (and in places such as the Gendarmenmarkt at midnight), we met friends and acquaintances and some whom we had wanted to meet for a long time but never had. Walking with a guidebook in the vicinity of the Villa Walter, I realized that someone whose name was familiar to students of German cultural history had lived in about every other house.

All this contributed to a better understanding of contemporary Germany, essential for a student of Germany; newspapers and books are accessible anywhere on the globe, and owing to computer technology it is possible to listen to German radio and (up to a point) watch German TV from afar – but this cannot replace live contact.

The same is true with regard to meetings in the Wissenschaftskolleg – e-mail exchanges with colleagues, however valuable, are usually ad hoc, pursuing a certain question, whereas seemingly aimless conversation over lunch and on many other occasions in the Wissenschaftskolleg (I am not enamored by the abbreviation) was more often than not unfocussed, unpredictable, and therefore quite enlightening; it certainly contributed to my general education, ranging from topics such as the history of modern art to India in the twentieth century and Jews in the Islamic world in the Middle Ages.

As for the seminars, I am of two minds; the intention is laudable, but it seems to me that specialization has unfortunately progressed so much (the famous “two cultures”) that it has become sometimes exceedingly difficult and perhaps even impossible to bridge them, that is to say to explain research, unless those attending have minimal scientific knowledge. Fellows will attend such presentations out of a feeling of duty and politeness vis-à-vis their colleagues, but I am not sure (based on my own experience) that they will be able to make contributions that are of value. One cannot, of course, generalize and lay down hard and fast rules. Some topics are accessible to the nonspecialists, others are not.

I wonder whether the following should not be given a try – one or two monthly meetings on topics of more general interest. I found in private conversation that there is great interest among Fellows about (for instance) the organization of various aspects of cultural life in West and East – and the problems confronting it. The structure of German universities is quite different from that in other countries and there is curiosity to know more: the status and the function of the professor and the student body – how do today’s students compare

with previous generations, what are their interests, the function of Academies and foundations in various countries, the problems facing operas and theaters, and museums, state support for sciences and the arts, cultural exchanges and the difficulties involved, publishing books, radio and television as educational factors.

These are just a few examples. While we talk a great deal about globalization, there are enormous differences between how things are done in various countries. I am sure people knowledgeable on these and other subjects can be found among the Fellows, and on occasion outside experts could be invited.

I arrived at the Wissenschaftskolleg with some apprehension; not since my Kibbutz days had I lived so closely with fellow human beings and, given the psychological frailties of old age, I was not sure how such arrangements would work. They could not have worked out better and we leave with sadness which, no doubt, will turn in due time into nostalgia, making appear the days on the Wallotstraße and in the Villa Walter in even rosier light. *Die schönen Tage von Aranjuez sind nun zu Ende. In contrast to Don Carlos we greatly benefited from them.* What bothered me a little is the fact that most young Germans no longer know their own literature, but I fear there is little the Wissenschaftskolleg can do about it.



RETURNING TO BERLIN, RETURNING TO EUROPE

WALTER MATTLI

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I remember a day in Berlin some sixteen years ago. It was a bright August morning. I was walking down the Kurfürstendamm on the last day of my first visit to Berlin. I had just graduated from the University of Geneva and was bound for New York for graduate school. Berlin was the one European city I absolutely wanted to visit before leaving for the States. During the previous five days in Berlin, I had walked for hours on end exploring

the various neighborhoods. I was enchanted with the city. In the remaining few hours I wanted to take a little excursion and needed directions. So I asked a random passerby near the intersection of Ku'damm and Bleibtreustraße: "Wie komme ich nach Potsdam?" An elderly Berliner man looked at me with a bemused air. "Nach Potsdam wollen Sie?" he inquired incredulously. I nodded. He suddenly rolled his eyes, threw up his arms, shook his head and exclaimed as he resumed his leisurely pace: "Ach, dann gehen Sie doch lieber nach New York!"

When the Wall came down, I was living in New York. Spellbound I watched the unimaginable become true. How much I regretted not being in Berlin. Ever since, I have felt a strong urge to return to the city. Predictably, I was delighted when years later I received an invitation to be a Fellow at the Wissenschaftskolleg in Berlin. I knew several former Wiko Fellows; they all raved about the institute. Soon I discovered why: a highly dedicated and infinitely courteous staff, outstanding library services, fine food, a nicely balanced program of cultural and social events, and above all exquisitely stimulating Fellows from a variety of disciplines and hailing from all over the world.

The year began on a high note: the award of the Nobel Prize in literature to our Co-Fellow Imre Kertész, one of the most inspiring individuals I have ever met. This *Aufstakt* set the tone for an extraordinary year of intellectual excitement, cultural delights, and new friendships. My own work on setting international standards in a global economy was immensely enriched by discussions with various Fellows, notably Kathy Thelen, Hartmut Berghoff, the members of the workshop on globalizations, and the Oxford biologists. Standards have become one of the most important nontariff barriers to trade, especially product standards, which specify design or performance characteristics of manufactured goods. Divergent national standards often inhibit trade whereas regional and international standards increasingly serve as instruments of trade liberalization. Consequently, the setting of international standards – seemingly technical and apolitical – is rapidly becoming an issue of great economic and political salience. But who sets international standards? Who wins, and who loses?

In my research at the Wiko I sought to explain the process of setting one broad class of international standards that is pivotal in international trade, namely product standards, developing a new analytical framework that I call the institutional complementarities approach. This approach acknowledges that standards-setting involves distributional conflicts but argues that it is not economic might or technological prowess per se that determines an actor's success or failure in this process, but certain institutional legacies; that is,

it posits that differences in institutional complementarities – complementarities of historically conditioned standardization systems at the national level with the institutional structure of standardization at the international level – play a critical though largely accidental role in placing firms from different countries or regions in a first- or second-mover position when standardization becomes global. The institutional complementarities approach offers insights that apply to institutionalized international cooperation among non-state actors more generally. A first write-up of this research (published in the October '03 issue of *World Politics*) also presents empirical tests of this approach and competing analytical views of international standardization through statistical analyses of the first scientific set of data on standards use and standardization, collected by me and a collaborator through an international online survey. I now am in the process of completing chapters begun at the Wiko on the politics of setting international financial (especially accounting) standards and food standards.

Finally, this research also addresses key global governance issues. The vast majority of international standardization bodies are private-sector institutions. Over the last ten years, governments have been delegating regulatory functions to these institutions with increasing frequency. This delegation raises very important (and largely unresolved) governance issues pertaining to the accountability, transparency, and legitimacy of these private-sector bodies.

My other research was Berlin, a united city through which still runs a long invisible wall. Wilmersdorf and Zehlendorf, for example, are worlds apart from Hellersdorf and Marzahn. The former remind me of sleepy Bern, the latter evoke parts of Moscow. The people in the various parts dress differently, walk differently, speak differently, and think differently. Unlike New York, Berlin is a relaxed and green city and strikingly affordable to boot; here you can rent an apartment twice the size of a New York flat for one fifth of its price, and it typically comes without cockroaches. Culturally, Berlin is heaven – and not boastful about it. In particular, I cannot think of any other city where the classical music scene is as rich and good as here. Living in Grunewald afforded easy commute to the city center while at the same time offering all the delights of a surrounding with lakes and forests. On my jogging trips I would criss-cross the Grunewald forest and regularly spot wild boars, deer, and a variety of woodpeckers and other rare birds.

And, yes, I did finally manage to visit Potsdam. A lovely city with a stunningly beautiful Schloss. And I was rather amused to learn, while visiting the *Bildergalerie* at Sanssouci, that

I had to leave because it was 12:30 p.m. The gallery closed at 12:30 for half an hour. Time for collective lunch of the staff? Talking about institutional legacies ...

In sum, it was a wonderful year during which I discovered much and without which I would not have decided to return to Europe for good.



UMWEGE HERBERT MOLDERINGS

1948 in Alfter-Witterschlick bei Bonn geboren. Studium der Kunstgeschichte, Philosophie, Archäologie und Soziologie an der Rheinischen Friedrich-Wilhelms-Universität in Bonn und der Ruhr-Universität Bochum. 1973 Promotion mit einer Studie über die Kunst Marcel Duchamps. 1974–75 Stipendiat des Landes Nordrhein-Westfalen am Zentralinstitut für Kunstgeschichte, München. Von 1975–78 Direktor des Westfälischen Kunstvereins in Münster. Organisation von Ausstellungen zur klassischen Moderne, zur Fotografie des 20. Jahrhunderts und zur Gegenwartskunst. 1978 Übersiedlung nach Paris, Beginn der Tätigkeit als freier Autor und Ausstellungskurator. Seit 1982 wohnhaft in Paris und Köln. Lehrstuhlvertretungen und Gastprofessuren an den Universitäten in Hamburg, Bochum, Kassel sowie an der Humboldt-Universität zu Berlin. 1995 Habilitation, apl. Professor für Mittlere und Neuere Kunstgeschichte an der Ruhr-Universität Bochum. Schwerpunkte in Forschung und Lehre: Geschichte der modernen Fotografie, Interdependenz von Fotografie und Malerei der Moderne, Kunst des 20. Jahrhunderts, die Werke von Marcel Duchamp, Man Ray, Umbo und Laszlo Moholy-Nagy. Publikationen u. a.: *Marcel Duchamp: Parawissenschaft, das Ephemere und der Skeptizismus*. Frankfurt/Main, 1983, Paris, 1987, Düsseldorf, 1997. *Umbo – Otto Umbehr 1902–1980*. Düsseldorf, 1996. *Laszlo Moholy-Nagy*. Paris, 1998. *Gerhard Merz. Ein Künstler des Agnostizismus*. Hannover, 2000. – Adresse: Kunstgeschichtliches Institut, Fakultät für Geschichtswissenschaft, Ruhr-Universität Bochum, Universitätsstr. 150, 44801 Bochum. E-Mail: H.Molderings@t-online.de.

Mein Hauptprojekt am Wissenschaftskolleg galt der Frage nach der Bedeutung der Wissenschaftstheorie Henri Poincarés für die Entwicklung des neuen Kunstbegriffs Marcel

Duchamps. Doch kaum in Berlin eingetroffen, riefen mir Künstlerfreunde und Kollegen die Zusagen von Aufsätzen und Vorträgen in Erinnerung, die ich zum Teil lange vorher gegeben hatte. Diesen Verpflichtungen konnte ich auch auf der Forschungsinsel des Wissenschaftskollegs nicht entgehen. Es hieß also, zuerst einige unabgeschlossene Manuskripte fertig zu stellen, bevor ich mich meinem eigentlichen Arbeitsprojekt zuwenden konnte.

Die Kunstsammlung Nordrhein-Westfalen in Düsseldorf bat im Rahmen ihrer Ausstellung „Surrealismus 1919–1944“ um einen Vortrag zum Thema „Surrealismus und Fotografie“. Für die Gerhard Merz-Retrospektive im Kunsthause Bregenz war ein Aufsatz zu schreiben, der das Verhältnis von Tradition und Innovation in seinem Werk zum Thema hatte. In Köln wurde L. Fritz Gruber, der langjährige Leiter der Photokina-Bilderschauen und Doyen der Fotografie in Deutschland, fünfundneunzig Jahre alt. Für das Katalogbuch, das anlässlich der zu seinen Ehren im Museum Ludwig veranstalteten Ausstellung erscheinen sollte, hatte ich einen fotohistorischen Beitrag zugesagt. In Fritz Grubers Sammlung war ich vor circa dreißig Jahren zum ersten Mal Originalabzügen des großen deutschen Fotografen Albert Renger-Patzsch begegnet. Die Erinnerung daran führte spontan zu der Entscheidung, meine im Jahr 2000 beim Studium der privaten Korrespondenz Renger-Patzschs im Getty Research Institute in Los Angeles entwickelten Gedanken auszuarbeiten und zusammenzufassen. Bei der Durchsicht meiner Notizen aus dem Getty Institute stieß ich zu meiner Überraschung auf einen anderen großen alten Herrn des deutschen Kulturlebens, Peter Wapnewski, der in den fünfziger Jahren mit dem Fotografen über literarische und fotografische Fragen korrespondiert hatte. Wie auf einem Möbiusband bewegten sich die Gedanken rückwärts in die Zeit, um in der Gegenwart in einem thailändischen Restaurant in der Fasanenstraße anzulangen, an einem unvergesslichen Abend mit Monika und Peter Wapnewski sowie Magda und Imre Kertész.

Die längste Zeit verwandte ich auf das Nebenprojekt „Naturwissenschaft, Spiel und Konstruktivismus. Drei Quellen der experimentellen Fotografie Laszlo Moholy-Nagys“. Ursprünglich hatte es nur ein kurzer Aufsatz werden sollen: „Laszlo Moholy-Nagy und die Neuerfindung des Fotogramms“, den ich als Beitrag zu dem Buch „Kunst und Fotografie: Floris Neusüss und die Kasseler Schule für experimentelle Fotografie 1972–2002“ zugesagt hatte. Doch die Akte einmal geöffnet, reizte es mich, die Ruhe, die inspirierende Atmosphäre der permanenten wissenschaftlichen Diskussion und die außergewöhnlichen Leistungen des Bibliotheksdienstes des Wissenschaftskollegs zu nutzen, um das seit zwei Jahren liegen gelassene Projekt auch noch abzuschließen. Ich glaubte, dies wäre in vier Wochen zu erledigen. Doch dann förderte der Bibliotheksdienst aus dem schier uner-

schöpflichen Fundus der Berliner Bibliotheken eine solche Menge an Büchern und Zeitschriften zutage, dass aus den vier Wochen schließlich vier Monate wurden. Da in Köln die Photokina, die Deutsche Gesellschaft für Photographie und das Agfa-Fotohistorama zu Hause sind, gilt die dortige Kunst- und Museumsbibliothek allgemein als eine der besten deutschen Bibliotheken in Sachen Fotografie. Der Bücherkurier des Wissenschaftskollegs führte mir jedoch fast täglich vor Augen, dass die lange Geschichte der deutschen Hauptstadt und ihrer Universitäten bedeutend schwerer wiegt als fünfzig Jahre Nachkriegsgeschichte. Die Bestände der Berliner Bibliotheken zur Fotogeschichte haben in Deutschland nicht ihresgleichen.

Die Fotografie beschäftigte mich also mehr als die Hälfte des Jahres am Wissenschaftskolleg. Dazu gehörte auch die Aufgabe, im Kolloquiumsraum ein kleine Ausstellung mit Werken der Fotokünstler Anna und Bernhard Blume zu organisieren. Die Zusammenarbeit mit dem Künstlerehepaar und Katrin Kaptain, die Diskussion mit Bernhard Blume am Abend der Eröffnung und die Gespräche mit den Fellows über die ausgestellten Werke („Mediumismus“ und „Transzentaler Konstruktivismus“) waren für mich ein besonderes Vergnügen. Die „schrägen“ Fotoinszenierungen der Blumes an den Wänden des Großen Kolloquiumraumes umgaben die bedeutungsschweren Dienstagskolloquien einige Wochen lang mit einem Hauch von Ironie und Leichtigkeit, den ich ein wenig vermisste, nachdem die Bilder abgehängt worden waren.

Überhaupt die Kolloquien. Woran es gelegen haben mag, dass die Diskussionen meist in standardisierten Spuren verliefen, vermag ich nicht zu beurteilen. Möglicherweise an mir selbst, meinen überzogenen Erwartungen, an der spezifischen Zusammensetzung dieses Jahrgangs oder anderen, mir entgangenen Zusammenhängen. Auch außerhalb der Kolloquien verliefen die Gespräche eher zurückhaltend, so dass die Lust, radikal anders zu denken, gar nicht erst aufkommen konnte. Vielleicht kann ein Internat von „Musterschülern“ nicht anders funktionieren, liegt die Bedeutung des Kollegs also darin, dem Einzelnen seine jeweils „einige“ wissenschaftliche Arbeit unter besten Bedingungen zu ermöglichen. Doch bereits der Zwang zur Diskussion, zur präzisen wissenschaftlichen Argumentation sowie der permanente methodische Zweifel, der die Gespräche am Kolleg kennzeichnete, waren für einen in der Einsamkeit tätigen freien Autor wie mich sehr anregend.

Für die Arbeit an meinem Hauptprojekt standen also nur noch wenige Monate zur Verfügung. An einen Abschluss des Buchskripts war nicht mehr zu denken. Das Studium der neuesten Literatur zu Poincaré und zur Wissenschaftsgeschichte im 20. Jahrhundert all-

gemein sowie die vielen Diskussionen mit dem Mathematiker und Wissenschaftshistoriker Éric Brian, mit dem ich das Interesse an der Rezeption der mathematischen Objekte in der Kunstwelt der zwanziger und dreißiger Jahre teilte, haben mich wichtige Schritte vorangetrieben, so dass am Ende wenigstens das Kapitel über die „Ready-mades“ Duchamps zu Papier gebracht war. „Originalität ist nicht der Anfang, sondern der Weg“, hat unser Co-Fellow Imre Kertész in sein *Galeerentagebuch* notiert. Die geistigen Wege und Umwege Duchamps suche ich in dem Kapitel über die „Ready-mades“ zu rekonstruieren. Es war der Übergang vom Raummodell der dreidimensionalen zur vierdimensionalen Geometrie, der den ehemaligen Maler zum Bruch mit der Malerei und zur Erfindung der „Ready-mades“, d. h. zur Idee, die realen Dinge selbst als Repräsentationen, als Zeichen sichtbar und verstehbar zu machen, geführt hat. Dass man es nicht leicht hat mit der Anschaulichkeit von unsichtbaren Gegebenheiten (Wolfgang Pauli), musste auch Duchamp erfahren, als er versuchte, die hypothetische vierte Raumachse bildnerisch sichtbar zu machen. Be- trachtet man die „Ready-mades“ im Kontext seiner Spekulationen über die Möglichkeit der Darstellung des vierdimensionalen Raums, dann lassen sich diese Objekte als Sinnbilder einer unüberwindbaren Trennung zwischen mathematischem Denken und künstlerischer Gestaltung begreifen. In dieser Theorie sind sie negativ definiert, durch das Scheitern an der Visualisierung dessen, was sie sichtbar machen sollten: die vierdimensionale Wahrnehmung. Doch auf dem Wege des praktischen Scheiterns dieser Theorie ergab sich eine revolutionäre künstlerische Erkenntnis: Jeder Gegenstand, jede Handlung, jede Geste lässt sich aus der Perspektive der vierdimensionalen Geometrie als n–1-dimensionale Erscheinung einer n-dimensionalen Entität, mithin als Bild interpretieren. Alltägliche Gebrauchsgegenstände wie ein Flaschentrockner oder eine Schneeschaufel lassen sich derart in Objekte der reinen Anschauung oder in Dingrätsel verwandeln. Um im Betrachter diese ästhetische Erfahrung zu provozieren, galt es, wider das Ausblenden der Formwahrnehmung durch die Fixierung des Sehens auf die Gebrauchsfunktion zu agieren, die Negation zu negieren. Dazu dienten zum einen die Dislozierung, die ver-rückte Aufstellung bzw. Aufhängung der Gegenstände an dem Ort, an dem sie die ersten beiden Jahrzehnte allein existierten: in Duchamps New Yorker Atelier, zum anderen der Ersatz der negierten Gebrauchsdimension durch eine geistige Dimension in Gestalt nicht-deskriptiver Titel wie „In Advance of the Broken Arm“, „Why Not Sneeze, Rose Sélavy?“ oder „3 ou 4 gouttes de hauteur n’ont rien à faire avec la sauvagerie“, welche die Wahrnehmung des industriellen Alltags in andere Regionen als die des praktischen Gebrauchs führten.

Nun galt es, im vergangenen Jahr nicht nur zu arbeiten. Die Stadt Berlin wollte entdeckt werden. Was ich gemeinsam mit meiner Frau auf den Spuren Franz Hessels und des großen Berliner Fotografen der Zwischenkriegsjahre Otto Umbehr, gen. Umbo reichlich unternommen habe. Wenn wir auch das legendäre Berlin der Zwanzigerjahre nirgendwo wiederfinden konnten – es sei denn in der viel verzweigten und vorzüglichen Antiquariatsszene der Stadt –, hat uns Berlin doch so begeistert, dass der Gedanke zu keimen begann, uns dort einmal niederzulassen. Wenn ich von den nichtwissenschaftlichen Vergnügungen rede, sei auch des Auktionshauses Bassenge in unmittelbarer Nachbarschaft des Wissenschaftskollegs gedacht, in dem man, wenn die Arbeit gerade mal keinen Spaß machte, nicht nur die schönsten Graphiken von Dürer, Rembrandt und Piranesi anschauen, sondern, wenn man Glück hatte, auch ein lange gesuchtes Blatt wie die „Académie des sciences et des beaux-arts“ von Sébastien Leclerc aus dem Jahre 1698 ersteigern konnte.

Allen Mitarbeiterinnen und Mitarbeitern des Wissenschaftskollegs danke ich für eine schöne Zeit, als deren Emblem mir die farbenfrohen allmorgendlichen Blumenbuketts im Eingang des Kollegs in Erinnerung bleiben werden. Barbara und ich haben während des Kollegjahres Freundschaften mit anderen Fellows und Fellow-Ehepaaren geschlossen, von denen einige, so hoffen wir, über die Zeit des Berliner Aufenthaltes hinaus dauern werden. Dass das Wissenschaftskolleg für die Ehegattinnen fast dieselben vorzüglichen Arbeitsbedingungen bereitstellt wie für die Fellows, ist eine Geste, für die ich mich besonders bedanken möchte. Last but not least möchte ich mich bei Joachim Nettelbeck und dem Rektor, Dieter Grimm, für ihr Verständnis und ihre Nachsicht bedanken, als eine schwierige familiäre Situation mich für längere Zeit vom Wissenschaftskolleg fernhielt.



WO IST BERLIN? ISABEL MUNDRY

Geboren 1963 in Schlüchtern (Hessen), aufgewachsen in Berlin. 1983–91 Kompositionsstudium bei Frank Michael Beyer und Gösta Neuwirth sowie Belegung der Fächer Musikwissenschaft (Dahlhaus), Kunstgeschichte und Philosophie. Anschließend Ergänzungsstudium bei Hans Zender in Frankfurt/Main. 1992–94 in Paris als Stipendiatin der Cité des Arts und am ICRAM, Institut de Recherche et Coordination Acoustique/Musique (Kursus für Komposition und Informatik). 1994–96 freischaffend in Wien. Zahlreiche Lehraufträge seit 1986, seit 1996 Professorin für Komposition und Tonsatz in Frankfurt/Main. 1998 und 2000 Dozentin für Komposition bei den Darmstädter Ferienkursen, 1997 desgleichen beim Akiyoshidai-Festival, Japan. CD-Veröffentlichungen u. a.: „Flugsand“, Komposition für raumverteiltes Orchester, Breitkopf und Härtel, 1998. „Ferne Nähe“ für Streichquartett und raumverteiltes Orchester, Breitkopf und Härtel, 2001. „no one“ für Streichquartett, Breitkopf und Härtel, 1995. – Adresse: Belfortstraße 17, 79098 Freiburg.

*Da erwachte der edle Odysseus.
Ruhend auf dem Boden der lange verlassenen Heimat.
Und er kannte sie nicht ...*

Stipendien treiben einen hinaus, an irgendeinen Ort, der sich wesentlich dadurch qualifiziert, dass er nicht zu Hause ist und Distanz schafft, um Neues denken zu können. Ob Rom, Paris oder Worpswede – man ist versetzt in eine Welt, die sich selbst so vertraut wie dem Stipendiaten fremd ist. Und ähnlich, wie es sich in einem fahrenden Zug gut denken lässt, weil alles so unverbindlich wieder vorüberzieht, lassen sich am Stipendienort die

Gedanken bündeln, weil die Dinge draußen die Rituale der anderen bleiben, selbst wenn man sich ihnen mit Neugier hingibt.

Niemals hätte ich mir vorstellen können, durch ein Stipendium gerade an jenen Ort verschlagen zu werden, den ich am längsten kenne, in dem ich Kindheit, Jugend und Studium verbracht habe. Und Berlin ist ähnlich geblieben. Gebäude, Busse, Bäume, Meyer Beck, Philharmonie, Subkultur, Gendarmenmarkt, Gesichter, die bettelnde Frau am Ku'damm, „Hast de mal 'n Euro“ am Kottbusser Tor, Touristen und deren Fotomotive ... Weniger hat sich verändert, als Berlin von sich selbst behauptet, aber im Blick aufs Vertraute artikulierte sich die Erfahrung, dass Orte und Menschen eine asymmetrische Beziehung haben. Das Bestehen des einen spiegelt die Verwandlung des anderen. Ich kenne Berlin noch, aber fremd ist mir jene geworden, die es einst gekannt hat.

Vermutlich hätte es keinen besseren Ort als das Wissenschaftskolleg in meiner Heimatstadt für mich geben können, um mich der Komposition an einem Musiktheater über die Odyssee zu widmen und der Frage nachzugehen, wie sich Identität zu räumlicher und zeitlicher Bewegung und Verwandlung verhält. Mit der Perspektive auf die Parameter Raum und Zeit lassen sich homerische und musikalische Wahrnehmungsformen aufeinander übertragen. Meine Lesart der Odyssee konzentriert sich auf die beiden Figuren Odysseus und Penelope und deren diametrale Art, Wechselverhältnisse von Vertrautem und Fremdem zu erleben. Während Odysseus bis ans Ende der Welt reist, um zu erfahren, dass Heimat eine wach gehaltene Erinnerung ist, die sich mit keinem Ort zu decken scheint – zuletzt nicht einmal mit Ithaka –, entschwindet Penelope der vertraute Ort dort, wo sie immer gewesen ist. Bevölkert von Fremden, wird ihr eigener Hof zu einem anonymen Ort. Und schließlich erleben beide, dass das erinnerte Bild angesichts der vorangeschrittenen Zeit seinen Wert verloren hat. Im Moment ihrer Begegnung erkennen Odysseus und Penelope einander nicht mehr. Erst ein erneutes Abtasten alter Zeichen führt dazu, in dem veränderten Anderen den Widerpart des inneren Bildes zu erkennen.

Das Wissenschaftskolleg kannte ich schon von früher. Als Studentin besuchte ich gelegentlich die Abendkolloquien, neugierig auf den jeweiligen Inhalt des Vortrags und anschließend fremdelnd gegenüber Menschen, die in schwer durchschaubaren Übergängen zwischen unverbindlich höflichem Dialog und vertrautem Gespräch eine besondere Gemeinschaft auszumachen schienen. Nun wurde diese einst von außen beobachtete Welt zum Ort und Inhalt meines äußerst geschätzten Alltags, mit all seinen Rituale, für die das Wissenschaftskolleg u. a. berühmt ist: tägliches Mittagessen, Dienstagskolloquium, Abendkolloquium, Abholen der Post etc. Ich hatte mir vorgenommen, mich in diesem

Jahr zu konzentrieren, weniger als sonst zu reisen und bei meinem Projekt zu bleiben. Doch man musste nur sitzen bleiben, um zu erleben, wie reich der Ambitus innerhalb einer Kantine sein kann. Die vielen Gespräche, u. a. mit Susan Zimmermann, Péter Nádas, Imre Kertész, Reinhard Kratz, Éric Brian, Carlo Severi, Victor Stoichita und Lydia Goehr und der Austausch über Projekte, von denen man zunächst meinen könnte, dass sie nichts miteinander zu tun hätten, haben mich nicht nur angeregt, sondern mein Denken verändert. So lässt sich Éric Brians Ansatz, dem Weg eines Objektes im Laufe des geschichtlichen Prozesses nachzugehen, um die Übergänge zu untersuchen, wie ein vertrauter Gegenstand zum fremden Ding wird, durchaus mit den Wegen vergleichen, die ein musikalischer Gedanke innerhalb eines Werkes durchlaufen kann. Carlo Severis Beschreibung von Zeichnungen eines indianischen Stammes las ich als eine äußerst präzise musikalische Analyse. Und die Lektüre von Péter Nádas' Essay „Melancholie“ und der darin ausgeloteten Resonanz eines Begriffes, hat mich direkt zu einer Komposition angeregt, die nur noch auf ihre Ausarbeitung wartet. Vieles andere habe ich einfach wirken lassen, ohne zu wissen, ob oder was es mit den eigenen Fragen zu tun hat. Und die Bücher von Navid Kermani lese ich nun erst einige Monate nach Verlassen des Wissenschaftskollegs mit großer Hingabe.

Aber es ging in dem Jahr nicht nur um den anregenden Austausch, sondern schlicht um eine Atmosphäre, die sich schwer beschreiben lässt, weil sie unmerklich entsteht und einen schließlich nicht mehr loslässt. Begegnet man am Anfang des Aufenthaltes einem Ort, von dem man anhand diverser Zeichen nur zu gut weiß, dass er seine Bewohner jährlich wieder ziehen lässt, so verlässt man ihn als einen, der sich prägend in die Erinnerung einschreibt. Und wenn ich heute in Berlin ankomme, will ich unwillkürlich in Richtung Grunewald fahren.



KAPITEL GRUNEWALD: EIN BERICHT PÉTER NÁDAS

1942 in Budapest geboren. Nach abgebrochenem Studium an der Fachschule für Chemie: Fotolehre. 1962–65 Journalistenschule. 1961–69 Zeitungsfotograf, später Journalist. 1965 erschien die erste Erzählung „Die Bibel“. Ab 1969 Veröffentlichungsverbot, dauert 7 Jahre. Erst 1977 wird *Ende eines Familienromans* publiziert, 1979 folgt die deutsche Ausgabe bei Suhrkamp. 1981 als Guest des Künstlerprogramms des DAAD in Berlin. 1985 nach elfjähriger Arbeit Abschluss des Romans *Buch der Erinnerung*. Nach Erscheinen der deutschen Ausgabe 1991 Großer Österreichischer Staatspreis für Europäische Literatur. 1992 Kosuth-Preis. 1995 Leipziger Buchpreis. 1998, nach Erscheinen der französischen Ausgabe Prix du Meilleur Livre Étranger. Seit mehreren Jahren Arbeit an einem großen Romanprojekt mit dem Titel *Parallelgeschichten*. – Adresse: Gombosszeg, Petöfi u. 22, 8984 Budapest, Ungarn.

Viel habe ich mir vorgenommen, durch die Gnade Gottes war jedoch davon nicht alles zu vollbringen.

Meinen Roman „Parallelgeschichten“ wollte ich vor allem fortschreiben. So wie zu Hause hatte ich die Vormittagsstunden dafür vorgesehen. Es sind für mich die wichtigsten. Ich will nicht einmal frühstücken. Mich nach dem Aufwachen unverzüglich mit einer Tasse Kaffee an den Arbeitstisch begeben. Alles andere aussperren und ausschalten. Keine Telefonate, keine Begegnungen, keine Nachrichten, kein einziges Wort.

Das klingt streng und verrückt und ist es auch. Über Jahrzehnte hat sich für mich jedoch noch nichts Besseres ergeben, um zu der schönen Regelmäßigkeit zu gelangen, die das Schreiben verlangt.

Mein Arbeitszimmer im Grunewald war ganz nach meinen minimalistischen Wünschen eingerichtet. Vor den Fenstern, durch die ich die Gipfel wundervoller Bäume und das aufregende Familienleben der Eltern beobachten konnte, um meine Beobachtungen dann mit dem Ornithologen Tecumseh Fitch zu besprechen, waren in einem bestimmten Abstand voneinander zwei Holzplatten auf einfachen Böcken aufgestellt worden. Auf der einen konnte ich meine Notizblätter ausbreiten, auf der anderen fanden Schreibmaschine und Computer ihren Platz. Ich schreibe mit der Hand, tippe den Text in die Maschine und korrigiere ihn, und erst dann kommt er zur Endredaktion in den Computer. Literarische Texte, die mit dem Computer geschrieben werden, wirken zwar wohlorganisiert, bleiben aber merkwürdig an der Oberfläche der Dinge.

Damit will ich nicht unbedingt sagen, dass das Schreiben eine Handarbeit ist.

Die schöne Regelmäßigkeit wurde zunächst durch die vorzüglichen Mittagessen und anregenden Tischgespräche, tiefgehender aber noch durch die Dienstagskolloquien eingeschränkt. Ich hätte meine tägliche Arbeitszeit gezwungenermaßen verkürzen müssen und die Arbeit an Dienstagen gar nicht erst aufnehmen können. Auf die Teilnahme an den Kolloquien wollte ich durchaus nicht verzichten. Einführung, Vortrag, Diskussion haben mich mit ihrer wechselnden Qualität und hervorragenden Inszenierung stets gefesselt. Wenn nicht früher, dann wurde mir Ende November, als ich aus meinem Buch „Der eigene Tod“ las und anschließend mit der Philosophin und Medizinerin Bettina Schöne-Seifert und dem Theologen Christoph Marksches über das Thema Sterben und Tod diskutierte, der Abstand schmerzlich bewusst, der das Wahre vom Schönen trennt.

Ohne der Ordensregel meines Fachs den Rücken zu kehren, kann ich das Terrain des Ichs auch bei bestem Willen nicht verlassen. Für die meisten Wissenschaftler offensichtlich ein höchst zwielichtiges Gebiet, dieses eigene Ich. Wie schaffen sie es, ihre Wissenschaften von ihrer Persönlichkeit zu trennen. Und was für eine Art von Wissen und Wissenschaft entsteht durch ihre strikten Trennungsversuche. Wenn auch nicht Denkweise und Methodik, so musste ich doch zumindest meine Tagesordnung ändern. Viel früher aufstehen, extrem früh an Dienstagen, um meine Arbeitszeit nicht durch die wissenschaftlichen Veranstaltungen und Diskussionen gefährden zu lassen und dennoch meinen Fragen nachgehen zu können.

Sie sind doch Fellow hier, sagte einmal Eric Brian lachend und irritiert, weil ich mich in dem großen Konferenzraum weigerte, mich in das schöne Quadrat der Konferenztische zu begeben. Ich saß lieber hinten.

Es wäre unhöflich gewesen, ihn mit meinen Vorbehalten zu erschrecken.

Um Mitternacht nahm ich häufig mein klappiges Fahrrad und fuhr hinüber in die Bibliothek. Zwischen Koenigssee und Herthasee roch die feuchte Luft nach Schlamm. Es war nicht weniger aufregend, aus dem Theater oder dem Konzert kommend, an der Erddener Straße auszusteigen, um in der Weißen Villa noch etwas nachzuschlagen oder rasch eine dringende Frage zu klären. Keinen habe ich dort je zu dieser Stunde gesehen. Einmal einen Nachtwächter. Oder doch. Zweimal habe ich Yehuda Elkana im Treppenhaus getroffen und wir haben oben bei ihm noch einen guten Wein getrunken. Und einmal habe ich eine Unbekannte beim Gehen furchtbar erschreckt.

Ich bin gerade dabei, den zweiten Band meines Buches „Parallelgeschichten“ abzuschließen. Bestimmt ein langer und schwieriger Prozess. In der vorübergehend endgültigen Fassung gab es zahlreiche Fakten und Daten, die ich dank der Handbücher der Bibliothek kontrollieren konnte. Zu meinem Vorhaben gehörte es auch, bestimmten historischen und philosophischen Zusammenhängen nachzugehen und bestimmte Fragen zur Zeitgeschichte in Bezug auf Architektur und Mode und zur Kriminologie zu klären. Diese Zusammenhänge bleiben zwar im Hintergrund, bilden aber das Gerüst des Buches.

Mir ist die sprachlose poetische Struktur des Textes mit den Jahren wichtiger geworden als Helden und Handlungen.

Aus Zeitmangel konnte ich mich nur sehr wenig mit Kriminologie befassen. Einige wichtige kriminaltechnische Handbücher aber habe ich gefunden, gekauft und nach Hause geschleppt. Auch mit Nazimode und Naziarchitektur konnte ich mich nur am Rande beschäftigen, immerhin aber doch einiges lesen, noch mehr querfeldein durchforsten und kopieren. In den sechziger Jahren hatte ich fast alles Erreichbare über Konzentrationslager und Nazideutschland gelesen. In den siebziger Jahren bin ich dann bis zur Gründerzeit und zur Weimarer Republik zurückgegangen, machte Ausflüge ins Mittelalter und in die Urgeschichte. Seit etwa zehn Jahren gilt meine Lektüre wieder fast ausschließlich der Shoah oder dem Holocaust. Shoa oder Holocaust, nenne man es, wie man will, werden in die Handlung meines Buches szenisch kaum eingehen, sie und ihre Folgen bestimmen aber die innere Struktur.

Als ich im September in Berlin ankam, waren meine Vorkenntnisse wahrscheinlich detailliert und meine Fragen umrissen genug, um mit Hilfe von Gudrun Rein und Gesine Bottomley sofort an eine kleine Ader des Wissens, an Bücher und Dokumente heranzukommen, die mir eine Fülle von Material lieferten. Das Thema erlaubt mir nicht, vom Glück des Forschers zu sprechen. Die Lektüre war allzu düster, die Erkenntnisse zu hart.

Für sechs lange Wochen bin ich darüber physisch und psychisch regelrecht zusammengebrochen.

Tage und Nächte allein in der Wohnung mit Fieber und großer Schwäche. Während dieser Zeit entdeckte ich Lichter an der Wand, die ich für meine Fotoreihe „Aufleuchten-de Details“ aufgenommen habe. Walter Mattli kam manchmal mit sorgfältig vollgepack-ten Einkaufstüten. Rüben, Kartoffeln, Salat, Orangen, Zitronen und Äpfel, alles aus bio-logischem Anbau. Wir lachten viel, so viel konnte ich gar nicht essen. Einige wirklich mi-serable Vormittage ausgenommen, schrieb ich weiter. Las meine düstere und teilweise sehr eintönige Lektüre im Bett. Einmal wurde ich tief in der Nacht vom Heulen eines Fuchses aus dem Schlaf gerissen. Auch hinter dem Fenster von Isabel Mundry war kein Licht mehr. Der verirrte Fuchs heulte auf dem zugefrorenen Herthasee. Alle Fellows schliefen. Der Mond schien voll über dem verschneiten Dach. Wenn man lange am Fenster lauschte, konnte man aus der dunklen Weite des Grunewalds auch die Antwort vernehmen.



Aufleuchtende Details (1)



Aufleuchtende Details (2)



Aufleuchtende Details (3)



Aufleuchtende Details (4)



Aufleuchtende Details (5)



Aufleuchtende Details (6)



Aufleuchtende Details (7)



EMBODIED IN THE
WISSENSCHAFTSKOLLEG
STEFANO NOLFİ

Stefano Nolfi is a senior researcher at the Institute of Cognitive Science and Technology of the Italian National Research Council and Associate Professor at Lumsa University in Rome. He has been a visiting fellow of the Center for Research in Language, University of California, San Diego, of the Laboratory of Microcomputing, Swiss Federal Institute of Technology, Lausanne, Switzerland, and of the SONY Computer Science Laboratory, Sony Inc., Tokyo. His research interests are in the field of neuroethological studies of adaptive behavior in natural and artificial agents and include: Evolutionary Robotics, Artificial Life, Dynamical Systems, Neural Networks, Genetic Algorithms. He has published more than 70 articles and a book entitled *Evolutionary Robotics: The Biology, Intelligence, and Technology of Self-Organizing Machines*. Cambridge, MA, 2000. – Address: Istituto di Scienze e Tecnologie della Cognizione, Consiglio Nazionale delle Ricerche, Viale Marx 15, 00137 Rome, Italy.

I came to the Wissenschaftskolleg zu Berlin with a clear goal in mind: to start to write a book on Embodied Cognitive Science.

Embodied Cognitive Science is a new broad interdisciplinary area that studies behavior and cognition and that includes researchers from biology, ethology, neurosciences, psychology, social sciences, artificial intelligence, and robotics. The main idea behind this approach is that behavior and cognition can be properly understood only by studying systems that are embodied. Indeed, natural organisms are embodied, i.e., they have a physical body, receive input from their sensors, and produce motor actions as output, are situated in an external world with which they interact, and display behaviors that are the emergent results

of the fine-grained interactions between the organism, its body, and the environment. An important consequence of this view is that the nervous system, the body, and the environment of an organism constitutes a single system, i.e., that the three aspects are so intimately connected that a description of them in isolation would not ultimately tell us how organisms are able to behave as they do. Natural organisms are not just nervous systems living within a body and within an environment, their body and their nervous system has been shaped to take advantage of each other, of their interaction, and of the interaction with the social and physical environment.

This leaves people like me, who embraces this paradigm, with a heavy burden. We have to develop complete models, i.e., models that include a detailed description not only of the processing occurring in the nervous system, but also of the physical and sensory-motor structure of the body, of the physical structure of the environment, and of their interaction. The goal of course, is not to develop models that are as complex as the reality they aim at describing; we want simple but complete models, i.e., highly simplified models that, however, describe the body structure and the environment with the same level of detail as the nervous system.

From the perspective of my own work, this means identifying the rules of an evolutionary game that might allow a population of artificial organisms (robots) to adapt to their environment and to develop forms of behavior and cognition similar to those observed in natural organisms. In the past years, I played this game thousands of times, and I was able to evolve a zoo of artificial creatures. Some of them show interesting properties. But aside from that, I am looking for the right ingredients to put in my games. This means trying to identify which of the huge amount of data coming from biology and natural science are the key ingredients that might allow us to create forms of artificial life that share the same main underlying mechanisms with natural life.

I arrived in Berlin in May, and after sorting out few survival priorities (e.g. learning the magic word “bitte”), I pleasantly realized that I was in the right social and physical environment to start such an enterprise. I just had to exploit the right interactions.

In some cases, this happened spontaneously. In the informal meeting I had with Georg Striedter, Steve Simpson, and David Raubenheimer, I felt like we had known each other forever. It was not simply like singing the same song, but rather like playing in a jam session. Indeed, the emergent results of our interactions were extremely important for my enterprise. In other cases, the synchronization process took longer. It was just a matter of playing a little faster or slower, or maybe harder or softer, – you never know until you

happen to play the right way, but once you do, you do not forget it. This was the case, for example, for the Fellows from humanities. Only at the very end did I rediscover the traces of my degree in literature and philosophy and of my old love for literature and art.

The Wissenschaftskolleg plays a crucial role in the story. I would never have started this project in my home working place. It is amazing how the quality of work conditions in research institutions has deteriorated in the last 15 years. The continuous need to find new resources and to justify what we do and why we do it waste at least half of our energies. We even forget that, once upon a time, institutions with the same spirit as the Wissenschaftskolleg were not rare exceptions. The efficiency and friendliness of the staff were of great help.

I am leaving Berlin with three brand new chapters and many new fresh ideas. I will not forget the green of the spring in Grunewald and the ever-changing soul of Berlin. I will not forget how pleasant it was to finally feel embodied in the Wissenschaftskolleg.



WHAT DID I DO IN BERLIN? LUIS PUELLES

Born in 1948 in Santa Cruz de Tenerife, Spain. Medical studies at the University of Granada, 1965–71. Graduated in 1971. Doctoral degree in Medicine and Surgery (MD) from the University of Sevilla, 1973. Held a series of teaching and research positions in the Department of Anatomy and Morphological Sciences (Faculty of Medicine) of the Spanish Universities of Granada, Sevilla, Badajoz, Cádiz, and Murcia, now holding the tenured chair of Full Professor of Neuroanatomy in Murcia since 1983. Publications: "Brain Segmentation and Forebrain Development in Amniotes." *Brain Research Bulletin* 55 (2001). "Thoughts on the Development, Structure and Evolution of the Mammalian and Avian Telencephalic Pallium." *Philosophical Transactions of the Royal Society Ser. B Biol. Sci.* (London) 356 (2001). "Regionalization of the Prosencephalic Neural Plate", with J. L. R. Rubenstein, K. Shimamura, and S. Martínez. *Annual Reviews of Neuroscience* 21 (1998). – Address: Department of Human Anatomy, Faculty of Medicine, Universidad de Murcia, 30100 Murcia, Spain.

I was originally attracted to the Wiko to participate in a group forming around my colleague in comparative neurobiology Georg Striedter, including as well Barbara Finlay and Tecumseh Fitch during my period of 4 months (October 2003 till end of January 2004). We were supposed to discuss *brain evolution* in developmental perspective, as we actually did a number of times, both jointly and privately. I do not recall that we made any major breakthroughs and we never attempted drawing a set of conclusions. We interacted closely with the other evolutionary biologists around (Kacelnik, Raubenheimer, Rodríguez-Gironés, Simpson, Hofinger) and had with them quite interesting conversations, which

probably opened a bit our respective conceptual spans. This naturally expanded to still wider scope thanks to the weekly seminars, the conversations on the most varied topics over meals, the frequent evening encounters and all sorts of activities organized or happening at the Wiko. In retrospect, I think I would have liked to spend more time talking on brain evolution with Georg, since our interests and viewpoints run rather close, but I sensed he was concentrating intensely on his book and I thus waited for his invitations to interact (sometimes he just wanted to play ping-pong).

As a private project, I wanted to sketch a book titled “Introduction to Neuromorphology for Molecular Neurobiologists”. The idea was to distil in as simple a format as seemed possible the approaches and insights I developed over the last 20 years on how to analyze morphologically the embryonic and adult brain of vertebrates. This sort of analysis aims to answer questions about how many different parts arise during brain ontogeny and phylogeny, and how these relate mutually; this is the background for understanding how these complex structures are caused to appear during both evolutionary change and developmental morphogenesis. I am confident that the paradigms I favor can be used by others for perfecting their interpretations of any structured patterns in the brain, including those shown by gene expression patterns. Most molecular biologists (and many neuroscientists as well) lack a training in neuromorphology and stumble upon the simplest neuroanatomical difficulties.

While the general aim of the work was clear in my mind, I was not so sure of the best way to approach it, this being quite a novel sort of book in the field. I am a slow writer, and am not precisely German in the way I systematize work ahead of me. Curiously enough, I did have a German school upbringing, where I was quite successful, but clearly Spanish culture also has its weight in me. Progress on this work while in Berlin was limited to tentative writing of two chapters, drawing a number of possible illustrations, a lot of agonizing on the plan of the work, and some success revising and preparing for independent publication the model of brain structure common to all vertebrates which I use as a *Bauplan* (it actually appeared in an opinion review piece in *Trends in Neurosciences* – Puelles and Rubenstein, 2003). During the same time, I wrote a book chapter on similar topics, included in the 3rd edition of *The Rat Brain*, edited by Georges Paxinos. San Diego: Academic Press, 2003, and continued work on a larguish “Stereotactic Atlas of the Chick Brain” and two or three other research papers, one of them with a young German colleague I met in San Francisco, now working in Berlin.

On the other hand, curiosity about the German neuroembryologists and anatomists who provided earlier visions on neuromorphological topics during the late 19th century and before the World Wars led me to use extensively the Berlin library system, accessing thanks to the kind and efficient help of the library staff at the Wiko an enormous amount of relevant old literature, apart of much recent literature as well. My explorations allowed me to penetrate a completely new line of research in my field, namely the development of the brain in the most primitive mammals, the monotremes, now conserved exclusively in Australia. I discovered in Berlin practically everything ever written on this exotic topic (the topic has been dead for about 80 years now, and it is now practically impossible to obtain permissions for new embryonic monotreme specimens from the Australian authorities). I also discovered the Zentrales Verzeichnis Antiquarischer Bücher (ZVAB) and searched extensively this and other paths of interest, so that I obtained original editions from major authors on monotreme brains such as G. Elliot Smith, Theodor Ziehen and M. Hines. After returning from Berlin, I pursued further this line of interest, visiting two collections of comparative brain preparations in Lund and Utrecht, respectively, where I photographed monotreme embryonic brains, and actually got on loan several specimens conserved in "spirits" (80% ethanol) for the last 100 years! These I am currently studying histologically with immunochemistry. Preliminary data of these studies were reported in a symposium during the recent World Congress of Neuroscience held in Prague (September, 2003), and the conclusions will be prepared for publication soon. I am quite happy that this may result in the end the most salient positive scientific result of my stay at the Wiko, insofar as I hope to have here a significant breakthrough in our understanding of the early evolution of the mammalian cerebral cortex.

Dealings with the ZVAB led to the acquisition of a steady stream of books I never had thought were accessible (or existed), not only on brains, but also on Music, which is my second passion. My wife Margaret eventually thought that I pushed excessively our budget towards things we couldn't eat or drink. In any case, one of my fondest memories of Berlin is the quiet sitting in my armchair at the Villa Walther, hearing chamber music, sipping a nice wine and reading all those books. Now and then I would recline and fall into placid sleep. I was alone in the apartment most of the day, since Margaret, also a neuroembryologist, spent her time working in the Carmen Birchmeier lab at the Max Delbrück Center for Molecular Biology at Buch. The stay in Berlin also represented for her an opportunity for new contacts and initiating a novel line of research, which she has continued thereafter.

I prepared and gave three talks outside the Wiko. One was at the Max Planck Institute for Molecular Genetics in Berlin, another was at the Karolinska Institute in Stockholm, and the third was on my way back to Spain, in Utrecht (Medical School).

We did explore Berlin in a non-systematic way (streets, museums, concerts, food, music shops), and experienced with great curiosity and wonder our first winter with real snow (no skating for us, though). I discovered in a flea-market the songs of the Comedian Harmonists, which lift my spirits every time I hear them. Lasting memories remain from our visit to the Berlin Synagogue, where we attended a light cabaret-like concert among a vast group of Russian Jewish immigrants, or from the diverse concerts given at the neighbouring Cultural Delegation of Romania at Villa Walther. In both cases I appreciated the endearing atmosphere of simple love for music, without presumptions, and I revelled in the crossnational emotional ties felt among true music lovers. Concert culture in Berlin is naturally otherwise impregnated by respect and admiration for the high level artists, which is another sort of value we duly appreciated. In contrast, I really hated a rock spectacle to which I was brought by Tecumseh Fitch. Margaret and I left with the knowledge that Berlin, like Paris, is a city to which you have to return again and again.

I appreciated a lot the well thought and well staffed facilities at the Wiko. Social life was also excellent in many ways, and I loved the efforts coming from the kitchen. We had a small ping-pong competition, where I managed to lose most of my matches while leaving people impressed with the quality of my play. I think I talked with most other Fellows and learnt something from each of them. The concerts and special conferences were highly interesting, and it was a privilege to discover Kertész' books (well, I only read three of them) and talk to him personally. I also read with pleasure a book by Péter Nádas. I tried for insights on modern musical compositions as represented by Isabel Mundry, whose recordings available in the Wiko library I explored with interest, though probably without full understanding. However, I appreciated a lot her patient explanations, as well as her talk. Conversations about art with Herbert Molderings, Victor Stoichita and his wife were also illuminating and very friendly. We also made close friendship with Carlo Severi and his wife. Now and then in the evenings I plogged through the snow or rain to play the grand piano at the central hall (Bach, Schumann, Brahms and Richard Strauss, mostly). Sometimes Gesine Hofinger kindly added her beautiful voice and we did some early Italian arias and pieces by Händel, for which Lydia Goehr played the violin voice once. She was a bit self-conscious, but I liked her passioned way with the instrument; she seemed to open a time-transfer window to *Hausmusik* situations in the past.

Many persons I met in Berlin have thus left a lasting impression. I mean not only at the Wiko, but also elsewhere, in the neighboring supermarkets, the book- and music-shops, the laboratories I visited, the skaters on the lake, the waiters in some restaurants, the freezing Russian wind-sextet players at the door of the Philharmonic House.

It is hard to say whether I fulfilled in Berlin what I expected, or what others expected of me, but in any case that four-month period seems in retrospect stacked with events, ideas, feelings, books, music and persons to a fullness that defies imagination. I'd like to thank the Wissenschaftskolleg for this wonderful experience. After all, it must be a good sign that we would love to return.



REFLECTIONS ON A REMARKABLE YEAR DAVID RAUBENHEIMER

David Raubenheimer graduated with a B.Sc. in Biological Sciences from the University of Cape Town, South Africa, in 1984. In 1985 he obtained a B.Sc. Honours (Zoology) and in 1987 an M.Sc., both from the University of Cape Town. In 1987 he was awarded a Sir Henry Strakosch Memorial Fellowship for postgraduate study at Oxford. There he registered for a D.Phil., which he completed in 1991. In the same year he took up a one-year Postdoctoral Fellowship at the University of Cape Town, before returning to the Zoology Department at Oxford to take up a Departmental Lectureship in Animal Behaviour, Neurobiology, and Entomology. He occupied this position until 1998, when he was appointed to a Senior Research Fellowship in the same Department and simultaneously to a Tutorial Fellowship at Magdalen College, Oxford. He lives in Oxford with his wife Jacky and two sons (Gabriel, aged 6, and Julian, aged 4). – Address: School of Biological Sciences, University of Auckland, Private Bag 92019, Auckland, New Zealand.

My recollection is vivid of the few days spent in Berlin in June 2002, visiting Wiko in advance of taking up my Fellowship in October of that year. Among the many colourful and exciting impressions of that, my first trip to Berlin and to an Institute that was to be my intellectual and social home for 10 months, there are two that stand out in particular.

First is the atmosphere among the staff at Wiko – at the same time extraordinarily welcoming, serene, and proficient. Second is the mood among the then-Fellows. While at the time less easy to describe, my impression was of a vague paradox – a sort of frenzy among the most relaxed corpus of academics I'd encountered. Relaxed, I recall speculating, from an extraordinarily privileged year, with a bit of help from the rich June sunlight; and

frenzied, I could only imagine, by the need to wring just a little more out of the privilege before returning to what, for most, must surely have been a more trying existence.

I assimilated these experiences not just as an observer, but as an extrapolator of how *I* would be placed in a year from then. With no distractions, in an atmosphere like that, come June 03 I would have achieved all I set out to achieve and a bit yet, and would be *ready to leave* with a glow of accomplishment. I had read several Wiko yearbook entries from past Fellows and resolved to take their hard-earned advice: I would not arrive with several months' worth of unfinished manuscripts, I would not over-commit myself to university visits and seminars, I would not attempt to be a fluent German speaker in my first few months – I would *not* do all the things that are likely to end in the kind of last-month frenzy I thought I sensed among the incumbents. To indulge in a bit of hyperbole, I felt like a young man contemplating the terminally aged – the world lay before me, whereas for them it would shortly all be over.

But oh, how quickly the time has passed! Now my June–July frenzy is over, the Wiko staff have turned their attention to the next generation, and I have the distance to reflect on what I did and did not achieve in my year at Wiko. I arrived with the intention, together with my collaborator Steve Simpson, of completing a book on the biology of behaviour and making serious inroads into another, on human nutrition. As it turned out, once the dust of unfinished obligations (the ones the Wiko yearbook had warned me about) had settled (this was around January) and we could for the first time view our projects with clarity, we made good progress initially on the nutrition book. Our arguments developed smoothly, a structure suggested itself, and we laid out the story to the point where we felt that all the book needed was time to perform the relatively rote task of fleshing out the chapters. In the interim, we had developed some of the ideas initiated in the writing of that book, and written them up for journal publication.

After those further – but necessary – diversions, we were finally ready to turn our attention to the behaviour book. This, by far the more conceptually challenging of the two, is the kind of project that does not lend itself to brief spurts of enthusiastic attention squeezed opportunistically into a schedule dominated by teaching, university administration, and pursuing a research career. We tried for several years to write it in this way, all the while aware that what it really needed was an uninterrupted period of undivided attention. With the opportunity finally come, we set about reviewing our earlier work on the book, re-visiting the relevant literature, and marshalling our ideas for its completion. The time was right: we had three months ahead, in which not one but *both* of us could work

on it simultaneously (a rare opportunity), and all within the heady atmosphere of behaviour/evolution/neurobiology/philosophy/complex systems analysis discussions that emerged from our year-group. In these inspired circumstances, it seemed that it would be a wasted opportunity not to relax our grip on the previously-conceived structure of the book and see what would grow.

What grew (in my part of the writing) was a single section in one of the original chapters (on the evolution of nervous systems), first into a full chapter, which then split into two, into three, and it wasn't until this recalcitrant subject had spread itself over four full chapters that order was once again restored. These additions have extended the project to cover new and important conceptual ground, as well as contributing greatly to structuring the arguments we originally set out to develop in that book. They have also taken me into many new and exciting areas in biology, on a scale I haven't experienced since that other privileged, exploratory period of my academic career, my Ph.D. For the time and intellectual space that enabled me confidently to go with this unplanned, unruly unfurling of ideas with any hope of returning in one piece, I am deeply grateful to Wiko. My intellectual explorations gained both inspiration and structure from the many interactions I had with other members of the Fellowship, and to them I am also grateful.

The benefits are set to outlast this remarkable year. I was told by a literary colleague (incidentally, over one of those memorable Wiko dinners) that novelists sometimes find it difficult to decide whether the best description of their working process is that of an author writing a book or a book writing an author. I now understand this more clearly. My foundations as a biologist have been broadened and strengthened in a way that has already influenced the direction of my research interests and will continue to do so whether I like it or not. The year has also brought associations with several new colleagues, some of which are developing into lasting contacts and even collaborations. There have been downsides too: my expectations of library services have been irreversibly inflated!

The year at Wiko was memorable for more than my experience as a Fellow there. As a family, we are particularly appreciative of the way that every effort was made to accommodate the needs of children – especially in a year that brought many more of them than Wiko is accustomed to – and of partners. This was all the more effective for the spontaneous warmth and generosity of individual staff members, of whom our children (and their parents) still speak fondly. To them, a big thank you for contributing to a family experience that was exciting, pleasant, and memorable!

Last, but by no means least, Wiko provided me with a valued opportunity to share a year, an office, and a whole lot of inspiring and memorable discussions with my close colleague Steve Simpson. Steve and I have worked together for 16 years, during which time we have developed many ideas, and jointly written many papers, but always under the time-fragmenting constraints of university life. During this year we had the freedom to pursue conversations and ideas over the timescale not only of lunch hours (but them too) or brief meetings slotted between other appointments (blissfully absent, throughout), but over days and even weeks. This has been particularly valuable since during the course of the year I decided to take up a job offer in New Zealand, so that not even those beery lunches and brief appointments will be an easy option for the future. A year of unfettered thinking and writing together has been a fitting end to what for me has been a truly remarkable era.

And what better start to a new one!



OF BEES AND BIRDS, AND OF THE
FLOWERS THEY POLLINATE

MIGUEL RODRÍGUEZ-GIRONÉS

Born in 1965 in Madrid. Education: 1995, D.Phil. in Zoology, Oxford University, UK. 1991, "DEA" (Diplôme d'Etudes Approfondies – doctorate courses) in Neuroscience, Université Claude Bernard, Lyon I, France. 1990, "DEA" in Theoretical Physics, Ecole Normale Supérieure de Paris, France. 1988, "Maîtrise" in Physics at the Université Pierre et Marie Curie, Paris VI, France. Present Position: Ramón y Cajal Fellow at the Estación Experimental de Zonas Aridas, Almería. Publications: "The Evolution of Female Sexuality", with M. Enquist. *Animal Behaviour* 61 (2001). "Relative Importance of Perceptual and Mnemonic Variance in Human Temporal Bisection", with A. Kacelnik. *Quarterly Journal of Experimental Psychology*. A, 54, 2 (2001). "Sibling Competition Stabilizes Signalling Resolution Models of Parent-Offspring Conflict." *Proceedings of the Royal Society of London, B* 266 (1999). – Address: Estación Experimental de Zonas Aridas, CSIC, General Segura, 1, 04001 Almería, Spain.

For the last few years before coming to Wiko, my main research area was the evolution of biological signalling systems. In particular, I focused on the interactions between parents and offspring at lunchtime. Offspring cry and parents use the intensity of their tantrum to estimate how much food they need. Why? How? All sorts of unanswered questions, plenty of work remains to be done. And yet, I had long wanted to shift gears and move from behavioural to ecological questions. Being a permanent post-doc, living on short-term contracts, it was not easy. Every two-year project had to be sufficiently successful to provide funding for the following project. And suddenly, the pressure lifted. Not by being at the Wissenschaftskolleg: a ten-month contract is not much stability, that's not what Wiko is

about. The pressure lifted because, upon arrival in Berlin, I already had the next contract: a five-year appointment back home. All together, six years. No need to publish anything straight away, I could just read and look around.

This does not mean that I had no idea at all of what I wanted to do. It means that I was not strongly attached to it. The original project was simple. I was to develop a series of theoretical models to study the evolution of seed size in variable environments, and the results of these models were to lay the foundation of further empirical and theoretical research. There was some beauty in the near-austerity of the project which, incidentally, fit well within the framework of the Risk focus group, with which I have been associated this year. But it was not to be. I started working on the project. I developed some models, ran some computer simulations, and even wrote things down. Then, just by accident, I came upon a new problem. Species invasions and extinctions. It is not a new problem for sciences, to be sure. It has long been the subject of research. The traditional approach was to consider invasions and extinctions the result of a competitive process. If the competitive ability of the newcomer is higher than that of the resident species occupying its ecological niche, it will invade and drive the resident species to extinction. This approach has been useful, but many problems remain. So it was recently suggested that it might be necessary to take mutualistic relationships into account if we are to understand the dynamics of species invasions and extinctions. An interesting proposition. Would it be of any use? I set myself the task of finding out how much of the data we could explain on the basis of mutualistic relationships alone. A typical example of mutualism, and a strong candidate to affect the probability that a plant species becomes established in a community, is animal pollination. Years ago I had prepared an application for a project on pollination. It was a long shot, an ambitious project that was never funded. So I went back to my birds and their begging and forgot all about the flowers and their bees. It all came back when reading about mutualisms and invasions.

Each of these ideas has been germinating and growing throughout the year, expanding its roots and shoots within my head (or was it the stomach?) in an odd contest not to monopolise incoming light and available water, but rather time, attention, and library resources. The result: seven manuscripts at different stages, three of them almost ready for submission, and a number of half-worked-out ideas, the list being so long that, I am sure, some of them will have to wait not till my retirement, but till my death, before I can finally set myself to work on them. So many cultures have demanded that their dead be buried with food, clothes, and other instruments to help them through their last trip, that nobody

should be surprised if I ask for some pens, plenty of paper, and a handful of candles to illuminate the interior of my coffin. And, since I cannot read while lying on my back, they better bury me on my belly, should there be not enough room in my coffin for me to turn around. – Incidentally, although I am not really worried about my coffin sinking deeper into the ground, an unlikely event given the physical properties of most graveyard soils, I am still working on a device that will keep the water away in case of rain or irrigation. To keep my papers dry, that is.

Looking back on the ten months at Wiko, I see that most of the projects I have worked on have been little more than distractions. The work on pollination seems to have won the competition for attention and time devoted to it. And by a wide margin, at that. But how can one study animal pollination from a dark, partly underground office? Let me try to explain it with an example. The Malagasy Star Orchids, *Angraecum sesquipedale*, have extremely deep corolla tubes: over 40 cm long. The nectar they produce is stored at the bottom of those long corolla tubes, and it is consumed by hawkmoths, *Xanthopan morgani praedicta*, that have almost as long a tongue: 35 cm. The moths pollinate the flowers while probing for nectar. It is a beautifully odd system. How did it ever come to be? The traditional explanation, first suggested by Darwin, goes as follows: if the corolla tube is longer than the moth's tongue, the moth must insert all its tongue in the corolla in order to reach the nectar. The head and body of the moth will contact the anthers and stigma of the flower and pollination will take place. If, on the other hand, the moth's tongue is longer than the corolla tube, the moth's head and body will be far away from the flower while it probes for nectar, and pollination will not take place. As a result, flowers with deeper corollas have higher reproductive success and corolla depth will tend to increase. As for the hawkmoths, the longer their tongue the more nectar they can extract from flowers. So there is some sort of evolutionary arms race between flowers and moths. The flowers are better off if their corollas are longer than the tongues of the moths, the moths are better off if their tongues are longer than the corolla tubes of the flowers, and they both get longer and longer as time goes on. In a further thousand million years, if there is still any coastal rain forest in Madagascar, corolla tubes and moth tongues may have reached a meter. Of course not. The above discussion ignores any cost of corolla and tongue elongation, and such costs certainly exist.

The story sort of makes sense. The nicest bit in it is that, at the time when Darwin proposed his hypothesis, no moth was known with a sufficiently long tongue to reach the orchid's nectar. Hence its name. There are, all the same, some problems with it. Among

them: longer corolla tubes are not always associated with higher pollination success in moth-pollinated flowers. Or another one: moth pollination and hummingbird pollination are in many ways similar. Some hummingbird-pollinated flowers, like the Andean *Passiflora mixta*, have very deep corollas indeed (although nothing compared to the Star Orchid: only 15 cm). But it is not clear that hummingbird-pollinated flowers with deep corollas are more successfully pollinated. The anthers and stigma of hummingbird-pollinated flowers tend to protrude beyond the flower, so that they contact the foraging hummingbirds even if they do not need to get very close to the flower in order to collect its nectar. If moth-pollinated flowers are not being pollinated because the moths stay too far away, why don't they just elongate their styles and filaments? And, above all, why is it that so few moth-pollinated flowers have very deep corollas?

The answer that I have come to favour revolves around behavioural niche partition. Animals tend to forage whatever resources they can exploit efficiently. If there is variability in animal traits and in the resources available, some animals will often concentrate on some resources, others on the remaining resources. Potentially, this can lead to flowers with very deep corollas. The explanation requires, once again, that short- and long-tongued moths differ in their ability to pollinate flowers. But, unlike Darwin's suggestion, for this mechanism to induce corolla elongation it must be the long-tongued moths that are better pollinators! Just an idea. Theoretically, it can work. The published evidence concerning foraging behaviour of nectarivorous animals and resource partitioning is consistent with the mechanism. But the real test has to be done with moths and flowers, not with paper and pencil, and it will have to wait till Wiko has faded in the distance. Which, unfortunately, will happen only too soon.

But why should I miss my dark office at the Wissenschaftskolleg when I find myself watching bees or moths visiting flowers in full sun? For a number of Fellows Wiko is mainly an excuse to get away from teaching and other faculty business. Not so for me: I have no teaching duties and little contact with the administration. For others, Wiko means research facilities. The library is certainly great (although that is the baseline assumption for a number of lucky Fellows), but there is an absolute and understandable lack of experimental facilities and no empiricist could stay here much longer than a year. (I considered for a time the possibility of refurbishing the garden in order to do some pollination experiments, but in the end I decided against it.) Finally, there are those who find Wiko special because of the odd mixture of characters, backgrounds, and disciplines that it represents. Much has been said about the advantages of multidisciplinary studies. It is possibly true

that, everything else being equal, an individual who makes the personal effort to become familiar with several disciplines and bring them together has a greater chance of making a significant contribution than an individual who does not make such an effort. But bringing together specialists from different disciplines is neither a necessary nor a sufficient condition for multidisciplinarity to arise. Personally, although I realise that it is far too early to judge the impact that this year will have on my future research, I believe that, in terms of work, the most important discussions I have had this year are those I have had with biologists. In fact, there have been a number of explicit attempts this year to come to terms with the arts-sciences border. None of these attempts have I found productive. On occasion, I have come out with the conviction of having thoroughly wasted my time. It is, of course, not true that arts and sciences have nothing to say to each other. But attempts by a member of a discipline to tell members of another discipline how to proceed will most likely fail. First of all, because he or she who pretends to teach will most often know of the other discipline little more than hearsay, and most importantly, because even when correct, the teaching is likely to be unnoticed or simply misunderstood. In view of our experience this year, it would seem that large, open-ended meetings are not much use either, and it is very possible that only those individuals who are genuinely interested in the problem can make any progress through personal discussions and hard work, as at least one of this year's Fellows has done. Wiko certainly provides the context where such discussions can take place, and the Tuesday colloquia bring up relevant questions, so the setting at least is adequate.

Life, however, has the graceful property of spreading well beyond the realm of work and research. Few of us, I believe, have the great luck to live in an environment where there is always somebody around with whom to discuss whatever idea crosses our mind, no matter how odd and out of place the idea happens to be. And all that within half an hour's bus ride from Berlin's city centre.



LOS TRABAJOS Y LOS DÍAS HILDA SABATO

Born in 1947 in Buenos Aires, Dr. Sabato is currently History Professor at the Facultad de Filosofía y Letras, University of Buenos Aires, and a research fellow of the Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET). Her research work initially dealt with topics related to the social and economic development of Argentine capitalism in the nineteenth century. Later, she shifted her interests to the political realm and worked on the history of citizenship, representation, suffrage, and the shaping of a public sphere. At present, she is involved in a new project on political violence in the period of nation-building. Publications: *¿Cómo fue la inmigración irlandesa en Argentina?* with J. C. Korol. Buenos Aires, 1981. *Capitalismo y ganadería en Buenos Aires: la fiebre del lanar, 1850–1880*. Buenos Aires, 1989, English translation: *Agrarian Capitalism and the World Market: Buenos Aires in the Pastoral Age*. Albuquerque, 1990. *Los trabajadores de Buenos Aires: la experiencia del mercado, 1850–1880*, with L. A. Romero. Buenos Aires, 1992. *La política en las calles: entre el voto y la movilización: Buenos Aires, 1862–1880*. Buenos Aires, 1998, English translation: *The Many and the Few: Political Participation in Republican Buenos Aires*. Stanford, 2001. She has also edited two collective volumes and publishes regularly in academic and cultural journals. – Address: Llavallol 4729; C1419AKO Buenos Aires, Argentina. E-mail: hsabato@arnet.com.ar.

Morgens

Grunewald is what I saw first, Grunewald in winter. It is a peculiar way of approaching Berlin, through one of its most residential, elegant, and affluent neighborhoods. In a short

time, however, with the aid of the bus 119, the rest of the city gradually came into sight. Soon I was caught by its magnetism. Discovering Berlin was one of the main experiences of this year at Wiko: a city in perpetual change yet at the same time deeply rooted in the past and permeated by its history. In spite of its peculiarities, Grunewald shares some of that quality, as it breathes both continuity (rather more) and variation (rather less).

From the tall windows of my early twentieth-century flat, I watched the frozen lake across the street, the weak sunlight barely illuminating the kitchen. The short walk to the Wallotstraße on the crisp mornings prepared me for the German class. The challenge usually proved too exerting for that time of day, and a combination of enthusiasm and frustration inevitably fell upon our odd group of scholars-in-the-role-of-students. Yet learning the language soon proved a key way of approaching Berlin and, indeed, Germany.

Morning was also the time for e-mails in the small office in the *Neubau* and of browsing the library catalogues for books. This is the initial step of one of the most cherished of Wiko's features. You hand in the name of any publication you might like to read, copy, touch, or simply look at, and a few days later, there it is, waiting for you in your library pile. The miracle is performed by the library staff, who are not only incredibly efficient, but also very friendly.

On Tuesdays: the Colloquium, a weekly ritual for the Fellows on both sides of the table, as speakers and as members of the participant audience. This was an ideal occasion to observe, find out, and try to understand how other scholars, from different fields, theoretical orientations, and academic traditions, go about thinking, asking questions, and producing knowledge. Also, when my turn for the podium came, it was my main opportunity to explain my own work as a historian, to display the forms I had chosen to define and address a particular subject matter – the Argentine Revolution of 1880 and the role of violence in politics –, and to put my ideas to the test. Although the chemistry did not always work, most seminars succeeded in generating a space of shared interrogation and debate. My favorite ones were those that uncovered for us the ways of inquiring into and exploring a specific topic, no matter how distant it may have been from my own academic interests.

Mittags

Lunch had an important place in our everyday life at Wiko. This was the time to engage in conversation, a key intellectual practice that has, of late in our culture, almost fallen into oblivion. Around a well-served table, a feat of the kitchen staff, no topics were precluded

in friendly chats and heated discussions that helped to make our social and intellectual exchanges more intense. World politics was always a must, and for a good part of the year, the war against Iraq featured as the main theme of our lunchtime debates. Not that our prevailing views had any chance of affecting the decisions of the powerful ...

Later on, the spring came, and, with it, our tables moved to the courtyard and, weather permitting, we lingered in the sun for a little longer.

Nachmittags

Back to my office, the best part of the afternoon I devoted to reading, writing, working on my current research on the role of violence in the political life of nineteenth-century Argentina, and developing a new collective project. I took advantage of the library resources in Germany to do bibliographical searches followed by some systematic reading of theoretical and historical works on political violence. This reading triggered the writing: a piece on the historiography of that topic in Argentina, two on the revolutions that took place in Buenos Aires between the 1850s and the 1890s, and three others related to my previous work on civil society and the public sphere in Latin America. All of these were delivered as talks and discussed in academic meetings during the year, when I had the opportunity to establish a scholarly dialogue with German colleagues in the vast area of Latin American studies as well as in the disciplinary field of History.

History also brought me together with other Wiko Fellows interested in reflecting upon history writing and its relationship with politics and collective memory. We created a space for the discussion of the different experiences in countries or regions that have recently gone through processes of deep political and social change and where that relationship has acquired particular relevance. The exchanges in the group, which included Abdelahad Sebti, Abdul Sheriff, Carlo Severi, Balász Trencsényi, and myself, were very productive and led to the proposal of a more comprehensive project for the future.

Finally, German history and historiography were an overall presence during my days in Berlin. It was, however, an ever-elusive presence; no matter how much it permeates daily life, it proves hard to grasp for an outsider.

Abends

Evenings at the Kolleg combined learning, conversation, and a good table in the convivial atmosphere of the regular Thursday dinners, the special Wednesday seminars, and the more informal film sessions and debates. Yet most of my evenings were devoted, above all, to the enjoyment of Berlin's music and theater scene: operas, concerts, and plays were the source of a unique esthetic experience.

There was also dinner with friends and drinks in the *Biergärten*. And the more and more frequent farewell parties on the patios of the Villa Walther, as the end of our fellowship year approached and we all prepared to leave.

Nachts

Nights are warm now. It is late, yet the tall windows of my flat still let in some light from the fading sun. Impressions and evaluations overlap. Questions come to mind, in a random succession that allows for little poised reflection. The Wiko experience is coming to an end; I am leaving Berlin soon. The smoothness of these months will probably be replaced by the roughness more typical of our “real” life at home. Sometimes I feel that our atmosphere here was a bit too self-centered, too complacent, perhaps too detached to allow for a strong intellectual commitment. But then, it was precisely this atmosphere that allowed me to engage more freely and open-mindedly in thought and reflection. And once I go back to the conflictual Argentine environment, I will surely miss the relaxed style of scholarly dedication that presided over our days and our works (“los trabajos y los días”) at Wiko.



A BORGESIAN LIBRARY IN GRUNEWALD'S *LOCUS AMOENUS*

BEATRIZ SARLO

I teach literature and culture at the Universidad de Buenos Aires, where I arrived after many years of military dictatorship. If my career were scrutinized closely, it would seem rather strange that I left the university in 1966 as a very young assistant and returned there as a professor in 1984, with no institutional affiliation in between. During the almost two decades I was kept out of the university, I trained myself as a literary critic and cultural analyst. Raymond Williams, Roland Barthes, Pierre Bourdieu, and Walter Benjamin could be named as the main intellectual influences that guide my work. I have written on the history of Argentine intellectuals, on literary avant-garde, on urban culture, and on modernism and postmodernism. If I had to name one of my books that I feel it would not be a painful obligation to re-read, I would say it is *Jorge Luis Borges: A Writer on the Edge*. It resulted from lectures delivered as Simon Bolivar Professor in Cambridge, England. But if I had to name what I consider my most important contribution to date, I would not hesitate to mention *Punto de Vista*, the cultural journal I have edited since 1978. – Address: Hildago 140, 1405 Buenos Aires, Argentina.

I arrived at the Wiko the first day in February 2003. I had lived for short periods in the United States and Europe, but it was my first time in Berlin.

Indeed, living in Berlin was quite an experience. The Kolleg can be an obstacle to Berlin, but it is also its condition. Both are cosmopolitan spaces that replicate and echo one another as if the secluded houses in Grunewald were a sort of pastoral model of the modern and post-modern city. Berlin would have been only half real without the Kolleg, although sometimes I had the impression that our privileged headquarters was a fortress that not

only protected us from the surrounding city but also secretly strove to replace it. Perhaps that is the whole point: to force the doors of the Kolleg in order to get to the city; to feel that Berlin is not just around the corner but that it must be attained after something has been accomplished in Grunewald.

I will not waive my right to say that the weather was bitter, snowy, and windy during two months. I thought that, to stay on the safe side and avoid desperation, winter would not be a topic. That proved impossible because winter is a topic for Berliners and trying to avoid it would only push it to the forefront. So, it was winter and we had to talk about it. I decided to go to the opera the day after I arrived, just to make sure that I would be able to face February's flurries from the very beginning. From that day on, I did not stop.

The first thing I discovered took me by surprise. I wanted to play tennis and discovered that this was not so easy as it is in my home city. You can swim, you can jog, and you can walk in the woods, but believe me: it is very difficult to find a decent court to rent at a decent price. This was my first bit of Berliner sociological knowledge.

However, in five months this bit of knowledge lost all importance in the image that I was building of the city. I am not sure that *knowledge* is the word to describe my relation with Berlin. Perhaps it would be better to say: *acquaintanceship* and *friendship*. I was learning German rather quickly (against my rather pessimistic expectations), thanks to the intense mornings I spent with Fellows, spouses, and Eva von Kügelgen, our teacher at the Kolleg. I came to think that if I could learn German everything else would be possible: going to the theater, reading newspapers and books, understanding lectures. I knew I would not be able to have a proper intellectual conversation in German. But I very quickly decided that, except with German colleagues in the Kolleg, I would only speak German.

Of course, I had arrived with a project. As everybody who has had the opportunity of working at the Kolleg knows, its Library is an incredible Borgesian space that includes Germany, Europe, who knows, maybe the whole world. And the Library is the obstacle that can wreck any project, especially if you are coming, as I was, from a country where libraries are far from Borgesian. I must confess that I read much more than I wrote. I read in a sort of adolescent mood, feeling free to forget my research and to follow different paths without having to make up an explanation to placate a troublesome institution.

My project focused on recent Argentine intellectual history, this time written as a sort of collective biography of a generation that was very young in the sixties. I was to rethink the relationship between Borges and Argentine leftist culture, which is full of misunder-

standings and conflicts. And, doing so, I was to rethink, once more, Borges's oeuvre, especially what could be read there as violence and passion, exactly the opposite of his critical appraisal as a universal writer of fantastic literature. I was to read Borges, once more, as a national writer, because he was refuted, loved, and hated under this guise by young intellectuals in the sixties and early seventies.

My work did not only include Borges. I had the intention to deal with political violence (as public passion) in the seventies, to which Borges himself could give some allegorical clues. That meant the opportunity to do some comparative work. Being in Europe, in Berlin, and last but not least at the Wiko, I could afford some luxuries that are not to be expected in the libraries of my country. During my first weeks at the Wiko, I met over lunch a former Fellow, Luisa Passerini, and later I read her books, which overlapped exactly with my project. This meeting was the sort of thing that can typically happen at the Wiko: you get even what you do not expect to get, through a sort of benevolent fate that rules over the Fellows' lives.

Wiko, as every former Fellow knows, has established wise, slightly constraining, but at the same time very agreeable traditions. Of course it is full of ghosts and remembrances: Ligeti, who had been a Fellow, was mentioned the moment I arrived. That was really a privilege, I thought, some of his traces should be found here. At the end of my period, *Le Grand Macabre*, Ligeti's opera was sung at the Komische Oper. Thus a circle began to close and I knew I was ready to return to my country. At the same time, I knew very well what I was going to miss. Let me write down a list of those items:

- The principle of uncertainty that rules lunches and Thursday evenings: every table is different, every day one can manage to open new lines of dialog; things that are not looked for can happen and the unexpected is part of every gathering.
- Discussions about music with Reinhart Meyer-Kalkus, who also lured me into reading Jünger; fabulous anecdotes by Wolf Lepenies: every Wiko Fellow should ask him for the complete story of his first lunch with Canguilhem.
- Intense apprenticeship in biological sciences, thanks to helpful and patient colleagues who were immediately aware that I needed special tuition.
- Meeting people from countries, some of which reminded me of my own (like Hungary and Poland) while others were an unknown world (Congo, Zimbabwe, India, the North of Africa).
- During the war in Iraq, the fact of being in contact with Fellows who spoke and read Arabic, who could provide a deeper understanding of the conflict.

I could go on and on. Just jogging around the lakes in Grunewald made me believe in the real existence of the classical *locus amoenus*. And coming back home from a concert or the theater, walking across Wallotstraße, I felt that Wiko's stately *wilhelminische Haus*, with its yellow lights shining through the windows, because the Wiko is a sort of non-stop institution, was an intellectual home for the apparently very distant Argentinean that was living and working there.



ERFOLGREICHES SCHEITERN? RAINER SCHMALZ-BRUNNS

Geboren 1954. Studium der Fächer Politik-, Literatur- und Erziehungswissenschaft, Soziologie und Volkswirtschaftslehre an der Universität Hamburg. Promotion an der Universität Hamburg 1986. Von 1980 bis 1984 Wissenschaftlicher Mitarbeiter am Institut für Politische Wissenschaft der Universität Hamburg. 1989 bis 1994 Wissenschaftlicher Mitarbeiter am Institut für Politikwissenschaft der Universität der Bundeswehr in Hamburg. 1994 Habilitation an der Universität Hamburg. Seit 1996 Inhaber einer Professur für Politikwissenschaft mit dem Schwerpunkt Politische Theorie und Ideengeschichte an der Technischen Universität Darmstadt. Forschungsgebiete: Europäische Integration, Politische Denationalisierung, Demokratietheorie. Neuere Veröffentlichungen: *Politische Theorie heute*, herausgegeben mit Michael Th. Greven. Baden-Baden, 1999. *Theorie der Politik: Niklas Luhmanns politische Soziologie*, herausgegeben mit Kai-Uwe Hellmann. Frankfurt/Main, 2002. *Politisches Vertrauen: Soziale Grundlagen reflexiver Kooperation*, herausgegeben mit Reinhard Zintl. Baden-Baden, 2002. – Adresse: Institut für Politikwissenschaft, Technische Universität Darmstadt, Residenzschloss, 64283 Darmstadt.

Eines der größten Komplimente, das man, wie mir scheint, einer Einrichtung wie dem Wissenschaftskolleg machen kann, besteht darin, dass man sich doch eher außerstande sieht, den Wirkungen, die von zehn Monaten voller intellektueller Erfahrungen und wissenschaftlicher Anregungen ausgehen, ganz unmittelbar auf die Spur zu kommen. Und dies gerade deshalb, weil vieles von dem, was der (auch nachträglichen) Aufarbeitung harrt, sich jenseits eingeübter disziplinärer Routinen und Forschungsfragen in eigene Sichtweisen und Überlegungen einschleicht oder einspielt: Schleichende und offene Ver-

unsicherungen, die Konfrontation mit anderen Positionen, denen durch die persönliche Begegnung gleichwohl ein anderes Maß an Nachhaltigkeit zuteil wird, überhaupt der forcierte Blick über den Tellerrand der gepflegten begrifflichen und konzeptionellen Üblichkeiten wie disziplinären Denkgewohnheiten – dies alles lässt vermuten, dass man dem nur im Rahmen eines ausgreifenderen Rückblicks wird gerecht werden können. Das aber nötigt für Zwecke eines Berichts über das akademische Jahr am Wissenschaftskolleg zur Einnahme einer eher ungewöhnlichen Perspektive – der Perspektive des antizipierenden Rückblicks, in dessen Licht gegebenenfalls festgestellt werden kann, ob auch dann, wenn man vielleicht einige der im Vorhinein selbst gesteckten Arbeitsziele nicht erreicht hat, das Ganze doch als ein persönlicher Erfolg im Sinne eines, um es paradox zu formulieren, „erfolgreichen Scheiterns“ gelten kann.

Dabei sind die Perspektiven, derer sich ein solcher Versuch eines antizipierenden Rückblicks auf ein Jahr als Fellow am Wissenschaftskolleg bedienen kann, zunächst relativ klar vorgezeichnet: Wer würde sich im evaluierenden Blick auf sich selber etwa der Erwartung entziehen können oder wollen, den Erfolg des Aufenthalts am Fortschritt des Projekts zu messen, das der Einladung zugrunde gelegen hat; wer würde dementieren, dass das Zusammentreffen mit so vielen hervorragenden WissenschaftlerInnen eine Art freudiger Anspannung provoziert – eine Anspannung, die aus der Entwertung des importierten Status und der Verunsicherung bezüglich gut eingeübter professioneller Rollen einerseits und der daraus erwachsenden Aussicht andererseits erwächst, sich jenseits in aller Regel kleinlicher Reputationskämpfe dem gemeinsamen Nachdenken über wichtige Grundfragen und theoretische Probleme hingeben zu können; wer würde es nicht als eine, wenn auch unverdiente Chance begreifen, die eigenen Denkgewohnheiten an der Herausforderung eines ebenso transdisziplinären wie kulturübergreifenden Gesprächs zu kontrollieren, das gerade aufgrund der persönlichen Vermittlung dieser Herausforderung einen Charme und eine Kraft entfalten kann, die ihm sonst eher selten zuwächst; wer würde nicht auf die immer seltener werdende Gelegenheit verweisen, sich jenseits und abseits der immer rigideren Zwänge des beruflichen Alltags einmal wieder einer durchaus auch ungerichteten und jedenfalls nicht auf unmittelbare Verwertung ziellenden Leselust hingeben zu dürfen und sich auf diese Weise mit in ihren Wirkungen noch unabschätzbaren Erfahrungen und Anregungen zu versorgen; und wer würde es schließlich nicht für ein Glück halten, wichtige historische und politische Ereignisse in einem sozialen Mikrokosmos zu verarbeiten, der die manchen politischen Konflikten und den Schwierigkeiten ihrer Lösung

zugrunde liegenden intellektuellen Spannungen ebenso unmittelbar hervortreten lässt wie die Chancen, die darin auch liegen könnten?

Darunter, so scheint es, kann man es, will man der Institution des Wissenschaftskollegs nur irgend gerecht werden, nicht machen – einer Institution, die, in Gestalt des unaufdringlich fördernden und sorgenden Zusammenwirkens der intellektuellen Großzügigkeit und Offenheit der Direktoren, der zähen Vermittlungsarbeit des Sekretärs, der Fellow-Dienste, des EDV-Teams, der Bibliothek und nicht zuletzt der Küche und des Hausmeisters alles Erdenkliche vorhält und unternimmt, um die Konzentration auf jene oben angesprochenen Herausforderungen zu ermöglichen – und die doch am Ende nicht alle hinderlichen externen Einflüsse zurückdämmen kann, die dem individuellen und institutionellen Erfolg entgegenstehen. Gibt es möglicherweise neben den nie ganz auszuschaltenden externen Einflüssen auch interne Gründe, die dafür verantwortlich sein könnten, dass dieser so ausgesprochen großzügige Rahmen denn doch gelegentlich nicht vollständig ausgefüllt wird und manches hinter den eigenen wie vielleicht auch institutionellen Erwartungen zurückbleibt?

Auch dann, wenn man, eingeübt in den schonenden Umgang mit sich selber, sogleich bemerkt, dass man gar nicht alle der zum Teil gegenläufigen Erwartungen an einen solchen Aufenthalt zugleich erfüllen kann, kommt man selbstverständlich nicht umhin, zunächst über die eigenen Unzulänglichkeiten zu sprechen. Warum eigentlich, so muss ich wenigstens in meinem Fall fragen, ist es mir nicht gelungen, das eigene, in seinen Konturen darüber hinaus schon relativ klar geschnittene Vorhaben, ein Buch über „Prozesse transnationaler Demokratisierung“ zu schreiben und darin die legitimationswirksamen Bedingungen und Formen einer denationalisierten Politik im Zusammenhang zu erfassen, tatsächlich zu Ende zu bringen? Nun gut, ich könnte entschuldigend darauf verweisen, dass das Projekt von vornherein (und vielleicht verführt durch den Geist der Institution?) ein wenig zu prätentiös angelegt war. Es könnte auch daran liegen, dass die Möglichkeit zu zeitlich entschränktem Nachdenken einen verunsichernden Effekt hat, weil man unter diesen Bedingungen eben der Einsicht kaum noch pragmatisch auszuweichen vermag, dass die Dinge komplexer und die Probleme verwickelter sind, als sie erscheinen, wenn man auch intellektuell eher von der Hand in den Mund lebt. Paradoxe Effekte also könnte auch das Wiko zeitigen – auch wenn man sie in ihrer Bedeutung nicht überstrapazieren sollte. Wenn man aber auch nach Ablauf der zehn Monate bei grob der Hälfte der geplanten Kapitel stecken geblieben ist und über die eher deskriptiv und rekonstruktiv angelegten Argumentationsschritte hinaus insbesondere die anstrengenderen, konstruktiven Teile

noch der Ausarbeitung harren, dann hat das über die bereits erwähnten paradoxen Effekte hinaus einerseits wohl auch mit jenem dialogischen Eigenrhythmus des Wiko zu tun, der ja nicht allein (und vielleicht nicht einmal primär) auf die monologische Durchführung individueller Projekte hin ausgelegt ist und schon von sich aus zu einer Überlagerung längerfristiger von kurzfristigen Orientierungen auf jeweils das nächste Kolloquium, den nächsten Vortrag, Workshop, Gesprächskreis oder das regelmäßige Tischgespräch führt. Daran ist nichts zu beklagen (und dies umso weniger, wenn man sich andererseits eingestehen muss, dass die infolge des Irak-Krieges einsetzende Umstellung des öffentlichen und wissenschaftlichen Diskurses von Bedingungen und Formen des demokratischen Friedens auf jene des demokratischen Krieges die in das eigene Projekt eingelassenen, sehr anspruchsvollen Voraussetzungen erneut und auf nicht antizipierte Weise haben thematisch werden lassen), außer dass man sich gelegentlich darüber im Unklaren ist, wie defensiv oder offensiv man das alles gegenüber sich selber zu vertreten gedenkt.

Dabei spricht vieles für die offensive Auslegung und vieles davon kann namhaft gemacht werden: Kaum vorstellbar etwa, dass es ohne Herbert und Barbara Molderings gelungen wäre, mein ignorant-hartnäckiges Desinteresse an moderner Kunst wenigstens aufzubrechen – und umso dankbarer bin ich beiden dafür, dass auf diesem für sie gewiss nicht einfachen Weg eine freundschaftliche Bindung entstehen konnte; gewiss nicht ohne die Vermittlungsleistung, die in der Person von Reinhard Kratz liegt, konnte mir klar werden, dass ein ins Alttestamentarische erweiterter Horizont auch dem Politikwissenschaftler, der sich mit Problemen der Globalisierung befasst, weit mehr zu bieten hat als bildungsbürgerliches Ornament; und ohne die Lebendigkeit und intellektuelle Vitalität Lydia Goehrs wäre es mir gewiss schwerer gefallen einzustehen, dass eine erneute Beschäftigung mit dem Werk Adornos und insbesondere seiner ästhetischen Theorie immer noch Einsichten zu bergen und Haltungen zu bestätigen vermag, ohne die auch eine kritische Politikwissenschaft ihren Punkt zu verlieren droht; in ihrer Wirkung nicht zu unterschätzen auch die vielen Gespräche mit Mahendra Singh, der mir eindringlich klar machen konnte, dass Reflexivität nun wirklich kein exklusives Signum der modernen europäischen Kultur ist; oder die – leider viel zu seltenen – Gesprächskontakte mit David Raubenheimer und Steven Simpson, die andeuteten, wie viel zu gewinnen wäre, wenn man jenseits disziplinärer Bornierungen den Blick auf jene konstruktiven Gemeinsamkeiten zwischen biologischer und sozialwissenschaftlicher Theoriebildung lenkte; und schließlich war es ein unschätzbarer Vorzug, an den Diskussionen mit Dieter Grimm und Cornelia Vismann zu erfahren, dass sich die Intensität der Wahrnehmung gerade auch

kontroverser wissenschaftlicher Argumente nicht von ihren AutorInnen ablösen lässt. Nimmt man noch die Teilnahme an von Mahendra Singh und Grażyna Skapska organisierten und außergewöhnlich instruktiven und anregenden Workshops zu Fragen der vergleichenden Verfassungstheorie resp. der Konstitutionalisierung der Europäischen Union hinzu, dann zeigt dies alles, wenn auch immer noch sehr ausschnitthaft, wie viel ich dem Wiko und dem von ihm gewährten Privileg, Zeit zu haben, verdanke.

Und dennoch meldet sich hinter all dem auch die eingangs gestellte Frage zurück, ob es neben eigenen Unzulänglichkeiten und der unvermeidlichen Selektivität persönlicher Kontakte und eines begrenzten Aufnahme- und Verarbeitungsvermögens nicht doch noch andere, im eben auch ambivalenten Charakter der Institution selber liegende Gründe dafür geben könnte, dass am Ende manches hinter den eigenen wie institutionell gehegten (obwohl ich eine gewisse Unsicherheit gerade bezüglich des Vorliegens der letzteren einräumen muss) Erwartungen zurückbleibt? In einer sehr provisorischen Reaktion auf diese Frage könnten drei Beobachtungen vielleicht einigen Aufschluss geben:

An sehr vielen Nachbetrachtungen, insbesondere im Rahmen der von mir regelmäßig genossenen Englischstunden bei Kevin McAleer, war mit zunehmender Dauer des Aufenthalts eine zunehmende Ernüchterung bezüglich des Dienstagskolloquiums zu verzeichnen. Warum? Streicht man die übliche professionelle Nörgelei und Besserwisserei ab, schien es auf einen Punkt hinauszulaufen: Es fehlte sehr häufig (und gewiss auch im eigenen Fall), jenseits des berechtigten Interesses an der Markierung des Eigenen, an einer Form der Thematisierung des je spezifischen Gegenstandes auf einer theoretischen und konzeptionellen Ebene, auf der die Gruppe als Gruppe hätte wirklich produktiv eingreifen können. Erwähnenswert scheint mir das vor allem deshalb, weil es einer der Punkte zu sein scheint, an dem sich eine gewisse institutionelle Unentschiedenheit zeigt, die auf ein Schwanken zwischen der Maxime des autonomiefördernden und -schonenden Umgangs mit den Fellows einerseits und nicht sehr expliziten, aber jedenfalls auch nicht unterdrückten Erwartungen an die kollektive Performanz andererseits hindeutet. Sollte das ein nicht ganz unberechtigter Eindruck sein, dann stellt sich auch mit Blick auf das Kolloquium eine Reihe von Fragen: Ist es wirklich unvermeidlich, dass jeder Jahrgang mit der Suche nach einem beiden Zielen angemessenen Selbstverständnis von vorne anfängt, oder wäre es nicht auch vorstellbar, dass das institutionelle Gedächtnis dem jeweils neuen Jahrgang schon in aufbereiteter Form zur Verfügung gestellt wird. Wäre es nicht hilfreich, diesbezügliche Erwartungen explizit zu machen und etwa in ein Format für die Präsen-

tationen zu übersetzen, das diesen Erwartungen auch hinlänglichen institutionellen Nachdruck verliehe und als individuelle Orientierung dienen könnte?

Überhaupt scheint es m. E. ein Problem mit etwas diffusen institutionellen Erwartungen zu geben, was sich auch am Schicksal des informellen Gesprächskreises über Globalisierungsfragen gezeigt hat: Sehr provisorisch könnte man das auf die Formel der „Zeitverschwendungen durch Zeitverknappung“ bringen. Was ist gemeint? Nun, ausgehend von der Vermutung, dass dem Kolleg auch an einer thematischen Fokussierung gelegen ist, um so die Wahrscheinlichkeit eines durch das Kolleg induzierten Forschungs-Outputs zu erhöhen, wäre es m. E. einerseits nützlich, für derartige Aktivitäten einen zeitlichen Rahmen vorzugeben und damit auch zu gewährleisten, indem der dafür notwendige zeitliche Aufwand in das je individuelle Kalkül von vornherein eingestellt werden kann (alternativ macht es, wie in Universitätsseminaren, keine Mühe, sich auf Belieben und Beliebigkeit einzustellen, aber man kann dann hier wie dort nicht erwarten, dass dabei etwas herauskommt). Andererseits könnten solche Arbeitszusammenhänge zusätzlich von den Leistungen des institutionellen Gedächtnisses profitieren, indem (so vorhanden) jahrgangsübergreifende Kontinuitäten transparent gemacht, anschlussfähige Thematisierungen systematisch dokumentiert und ggf. spezielle Erwartungen kommuniziert würden.

Etwas sehr Ähnliches hat sich m. E. an dem von Kathleen Thelen und Raghavendra Gadagkar zu Recht angeregten, im Ergebnis aber eher unglücklichen Versuch gezeigt, die Biologen einerseits und die Geistes- und Sozialwissenschaftler andererseits zu einer wechselseitigen, systematischeren Reflexion methodologischer Einstellungen und theoretischer Konzeptualisierungen anzuregen: Auch dieser Versuch musste nach meinem Eindruck, nimmt man nur den am leichtesten zu behebenden Defekt, an der völlig unzureichenden zeitlichen Ausstattung scheitern – zweimal zwei Stunden in zudem plenarer Zusammensetzung, das war nicht nur pure Zeitverschwendungen, sondern es war als solche absehbar.

Nun, bei allen möglichen Zweifeln bezüglich des Gewichts dieser Beobachtungen ist am Ende jedenfalls eine Sorte von Zweifeln völlig unbegründet: Zweifel daran nämlich, dass ich persönlich am Wiko ein sehr intensives und anregendes akademisches Jahr verbracht habe. Das Wissenschaftskolleg ist ein wunderbarer Ort, und mein großer Dank gilt den ständigen BewohnerInnen dieses Ortes, die es hinnehmen, dass einzelne Fellows wohl immer wieder an zumindest Teilen ihrer Pläne und Erwartungen auch scheitern, ohne dies allerdings im Mindesten zum Anlass zu nehmen, in ihren rücksichtsvoll-aufmerksamen Anstrengungen nachzulassen – damit stellen sie aber auch klar, dass man den Rest nur noch sich selber zurechnen kann.



UN MICROCLIMAT NOMMÉ WIKO ABDELAHAD SEBTI

Abdelahad Sebti est né en 1948 à Fès, il est actuellement professeur assistant à la Faculté des Lettres et des Sciences Humaines de Rabat (Université Mohammed V-Agdal, Maroc). Il est membre du comité de rédaction de la revue *Hespéris-Tamuda*, et membre fondateur de « L'Association Marocaine pour la Recherche Historique ». Il a effectué des séjours de recherche et/ou d'enseignement à Princeton University (1986), à l'Ecole des Hautes Etudes en Sciences Sociales de Paris (1988, 1995), à l'Institut de Culture Populaire de Tlemcen (1990), au Consejo Superior de Investigación Científica de Madrid (1990, 1991, 1995), à l'Université de Bordeaux III (1992–1994) et à la Sophia University de Tokyo (2001). Ses travaux, portant sur différents sujets, essaient d'articuler l'histoire des pratiques sociales et l'histoire des représentations (concepts, genres). Il est l'auteur d'une thèse inédite, *Aristocratie citadines, pouvoir et discours savant au Maroc précolonial : Contribution à une relecture de la littérature généalogique fassie, 15^e-début du 20^e siècle*, Paris, 1984, de deux ouvrages, *La ville au Moyen Âge : Questions et documents d'histoire de l'Occident musulman*, avec H. Ferhat. Casablanca/Beyrouth, 1984. *Le Livre du thé à la menthe : Coutume et histoire*, avec A. Lakh-sassi. Rabat, 1999. Il a aussi coordonné deux ouvrages collectifs, *Histoire et linguistique : Texte et niveaux d'interprétation*. Rabat, 1992 et *Historiographie et crise : Etudes historiographiques et culturelles*. Rabat, 1994. – Adresse : Département d'Histoire, Faculté des Lettres et des Sciences Humaines, B.P. 1040, Rabat, Maroc ; E-mail : abdelahadsebti@hotmail.com.

Avant de toucher terre au Wissenschaftskolleg zu Berlin, j'ai laissé à Rabat :

- un ouvrage en cours de publication, recueil d'études sur la tradition historiographique de la ville marocaine, centré sur les modes de présence du charisme,

- un ouvrage soumis à une dernière lecture, et qui correspond à une thèse d'habilitation portant sur la question de la sécurité du voyage comme thème historiographique,
- un ouvrage en cours de préparation (en collaboration avec Halima Ferhat), recueil de textes et documents sur la ville marocaine entre le 15^e et le 19^e siècle.

Dans ce chevauchement de chantiers, aux thèmes divers et pourtant unis par des interrogations similaires, le projet que j'ai soumis au Wiko et réservé au séjour berlinois, porte sur la question des années-repères dans la culture historique marocaine, la «nomination» de certaines années, liée généralement à des événements saillants (batailles décisives, catastrophes naturelles, conjonctures économiques frappantes). Ce thème m'avait fasciné il y a une douzaine d'années ; je m'étais abondamment documenté, mais j'avais suspendu la réalisation du projet pour des raisons très prosaïques, à savoir la perte d'un paquet de cassettes audio contenant une série d'entretiens relatifs au sujet en question. C'était donc un projet reporté, avec ce que cela suppose de maturation et d'incertitude. Je suis donc venu avec des données, des dossiers, mais je n'étais pas prêt à écrire.

Comment fonctionnent les rapports entre mémoire orale et mémoire écrite ? S'agit-il d'années-repères ou d'événements-repères, ou des deux à la fois ? Comment s'articulent les niveaux de la spécificité marocaine, de la profondeur arabo-islamique, et de la dimension anthropologique ? Le thème invite au comparatisme ; il se situe au carrefour de trois champs théoriques, à savoir le temps, l'événement, et la mémoire. La bibliothèque du Wiko, avec son équipe aussi efficace qu'aimable, m'offrait des possibilités inaccoutumées de lecture qui m'ont permis d'opérer des incursions fécondes dans ces trois champs de recherches, nouveaux pour moi, puisque mes recherches précédentes traitaient plutôt de la ville et de l'espace, du corps et du goût.

Je me rends compte aussi que la pluralité, déroutante au départ, des disciplines présentes au Wiko, permet des ouvertures enrichissantes, au gré d'échanges qui ont lieu parfois dans des espaces et à des moments quasi insoupçonnés, tels mon café rituel du matin à la cafétéria ou la présence furtive à une séance ou un workshop entrevus sur le tableau d'affichage, mais aussi les rencontres dans la salle de photocopie, ou même dans l'autobus 119, ou sur le chemin qui relie le Wiko à la Villa Walther où résident les fellows venus en famille. Je retiendrai notamment mes discussions et échanges avec Nasr Abu Zayd, Justin Kalulu Bisanswa, Éric Brian, Tecumseh W. Fitch, John Hyman, Georges Khalil, Reinhart Meyer-Kalkus, Victor Stoichiță, Miral Al-Tahawi, Steve Vertovec, Leonid Zhmud, et Susan Zimmermann.

Ceci dit, l'échange a sa propre logique, il peut parfois prendre du temps, demeurer très elliptique, souffrir de l'humeur, du tempérament ou du handicap de la langue. La gestation de la guerre en Irak a aussi créé l'occasion, avec certains, de multiplier les niveaux de discussion ; la guerre fut un temps dur, mais l'on sentait malgré tout, au-delà des divergences de points de vue, qu'une communauté de chercheurs dans le confort du travail intellectuel ne signifiait pas toujours insouciance ou désengagement par rapport aux dérapages inquiétants du nouveau désordre mondial.

L'échange scientifique spontané peut aussi faire germer l'idée d'un projet de groupe, comme celui que j'ai contribué à esquisser, sur les rapports entre historiographie et mémoire dans les pays du « Sud », en collaboration avec Hilda Sabato (Argentine), Abdul Sheriff (Zanzibar), Balász Trencsényi (Hongrie) et Carlo Severi (Italie).

Que dire alors du « Tuesday seminar », espace d'échange plus solennel, mais qui ne manque pas d'impact intellectuel ? Un jour, je demandais à un membre de l'équipe du Wiko : pourquoi n'oblige-t-on pas le fellow exposant à fournir un texte que les collègues pourraient lire de manière approfondie pour mieux pouvoir le discuter après sa présentation ? Réponse : c'est en quelque sorte une facilité et une « négligence » préméditées. Le fellow intervient au moment de son choix, sous la forme qu'il préfère, improvisée ou élaborée. C'est donc une liberté de mûrissement et de réflexion, et une exigence implicite de taille, celle de profiter et d'affronter une écoute de qualité.

J'ai personnellement été très stimulé par cette formule. J'ai pris le rituel très au sérieux, j'ai opté pour la fin du mois d'avril, et pour le texte élaboré, présenté en français et distribué en versions anglaise et allemande. Et comme j'ai pris une bonne avance, j'ai eu le loisir de rédiger deux textes, portant sur deux thèmes différents, et j'ai fini par choisir l'un d'eux.

L'hésitation a donc été productive. En fait, je me suis rendu compte que, venu au Wiko avec un projet, j'en repars avec l'esquisse consistante de deux ouvrages : un livre partiellement rédigé sur les années-repères, et un chapitre introductif pour un nouveau recueil d'articles portant sur la question des genres dans la tradition historiographique marocaine. Concernant ce deuxième volet, j'ai été amené à repenser certains de mes articles dans lesquels j'ai abordé la perception de la société urbaine marocaine par différents genres historiographiques : généalogie, hagiographie, chronique dynastique. J'ai été amené aussi à lire des travaux récents sur l'historiographie arabo-islamique (notamment ceux de A. Laroui, T. Khalidi, F. Donner et L. Conrad) et des ouvrages qui renouvellent la lecture du discours historique. J'ai pu ainsi entrevoir une idée fédératrice liée à la question de

l'échange entre genres historiographiques ; il s'agit de la distinction entre les genres au sens habituel et les genres comme représentations structurantes.

A un autre niveau, je devrais évoquer le rapport ambivalent que j'ai entretenu avec la langue allemande. Ce fut d'abord le cours intensif de la période d'installation, commandé par un élan qu'il m'a fallu freiner pour pouvoir me consacrer à mon projet ; et puis, tout au long de l'année – attitude volontariste certes – j'ai suivi un cours de lecture pour lequel je n'étais pas suffisamment outillé, mais qui stimulait ma curiosité et mes lectures, car j'étais sérieusement motivé, entre autres, par le désir de lire la *Begriffsgeschichte* dans le texte.

Peut-être ai-je subi les effets non prémédités d'un microclimat offrant une grande liberté et des possibilités idéales de concentration sur le travail ? Aussi ne me suis-je autorisé que des activités assez réduites en dehors du Wiko. Quelques conférences : à la Freie Universität, au Centre Marc Bloch, et au Zentrum Moderner Orient, où travaille Bettina Dennerlein, jeune historienne, « former fellow » au Wiko, et qui constituait le seul contact universitaire que j'avais à Berlin avant d'y élire domicile à la fin du mois d'août 2002.

Enfin, je dois reconnaître que le séjour berlinois m'a fait vivre, pour la première fois, l'intensité des quatre saisons. Par ailleurs, j'ai entretenu avec la ville, le pays, les gens et la culture un rapport de cordialité mesurée. Ceci dit, ma femme, mon fils et moi-même partageons cette même et forte impression d'avoir vécu une expérience enrichissante dans un climat de curiosité renouvelée. A la fin du séjour, il y a le plaisir de rentrer chez soi, mêlé à l'étrange émotion que l'on ressent en quittant le pays qui a abrité cette expérience enrichissante, mais qu'on a à peine entrevu, à plus d'un titre. C'est une émotion qui ne peut être que féconde.



THE ANTHROPOLOGY OF MEMORY
CARLO SEVERI

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When, at the end of August 2002, I arrived at the Wiko, I expected my life in Berlin to be made of long days of work and of many evenings at the Berliner Philharmonie. My research project was reasonably simple. During the last three or four years, I had accumulated a huge, and desperately messy, amount of notes on how memory devices (so-called picture writings and other kind of memory-related symbolisms) work in a number of oral traditions, both in Oceania and America. My idea was to put some order into these notes and then to write a book on the anthropology of memory. Something has emerged from this first idea — a lengthy manuscript is now in press at the Einaudi Publishing Company in Turin, leaving me alone and a bit uneasy.

I could say too, then, like other Fellows have in the *Jahrbücher* of other years, that “I came to the Wiko to write a book and I wrote it”. I am very grateful to the people working at the Institute. They have helped me a lot, with unfailing kindness and goodwill.

However, to say only that I have written the book I planned to write would be an incomplete account of my year. Life and research at the Wiko were to be far less simple than I had expected. There has been much more. I had many occasions of exchange, many topics of interesting conversation, many papers read and written thinking of my neighbours’ ideas and their potential comments. I had many surprises and encountered several unexpected questions. Let me give just one example. In early October, I had lunch with some biologists. They seemed, quite unexpectedly, interested and cultivated in the field of anthropological research. We had an interesting conversation on several topics. Then, in a polite but direct way, they expressed some concern about the fact that today only few anthropologists seem interested in the concept of evolution. Why was that? What was wrong with the idea of “cultural evolution”?

I have to admit that I was a little taken aback. My first answer was a defensive one. I remarked that a certain way to apply Darwinism to social sciences had proved very misleading, in the past. They nodded politely: they knew about that. However: did that mean that the very idea of “evolution” had become entirely useless in the study of culture? That seemed frankly unreasonable to them. They agreed that a bad use of the idea could lead to unacceptable prejudices. But: was that a good reason to rule out *any* evolutionary perspective in the study of culture? Also, one of them remarked, to refute a scientific theory, one needs scientific reasons. What were they?

I realised that my reference to the political taboos of the professional anthropologists had been rather predictable. I tried to become more technical: if by “evolution” one means a linear process of progressive increase leading from a set of elementary traits to complexity, one had very good chances of being desperately wrong. In the field of culture, the process of “evolution” – I argued – takes several different paths at the same time. For example: a technique like the American Indian picture-writing was perfectly adapted to its goals and still could seem extremely inefficient from the point of view of phonetic writing. Probably, techniques like picture-writing never really “prepared” for the so-called invention of writing. A number of illustrious linguists and historians who wanted to transfer precisely the concept of evolution into the field of culture had failed to see the real nature, and even the effectiveness, of technical devices such as picture-writing. In techniques of that kind, I

insisted, the refined and the rudimentary seemed to co-exist. There was no simple way to judge them “primitive” or “evolved” from a cultural point of view.

The smile of my table companions was almost triumphant: my example, and my way of looking at it, was a good example of what *they* called evolution. The conversation stopped there: as usual, everybody was busy in the afternoon, and we all got back to work. Once in my office, however, I began to realise that, far from leading to oversimplification, the evolutionary approach, seen as contemporary biologists see it, could become a theoretical model to account for certain kinds of cultural complexity, precisely where “the rudimentary and the refined” co-exist.

During the year, I had many conversations of that kind: on music (for instance, following an unforgettable Sextet by Brahms performed by the Artemis plus the Berg in the Seminar Room) on art, or on politics. And even on anthropology.

However, when I look back on the year spent in Berlin, that exchange on the idea of evolution seems to me a typical example of the many ways that life at the Wiko can be enjoyable and intellectually enriching. I am grateful for these exchanges – not only because “I came to write a book and I wrote it”.



THE LONGUE DURÉE IN THE WESTERN
INDIAN OCEAN:
TRANS-OCEANIC SOCIO-CULTURAL
INTEGRATION. A PROGRESS REPORT
ABDUL SHERIFF

Abdul Sheriff was born and educated in Zanzibar. He studied at the University of California at Los Angeles and at the School of Oriental and African Studies, University of London (Ph.D. 1971). He has been a Visiting Professor or Fellow at the universities of Wisconsin (1974/75), Minnesota (1991), Hamburg (1992), the Centre of the Modern Orient, Berlin (1994, 1997), Bergen (1996), Lisbon (1998), Humboldt (1998), and the Wissenschaftskolleg zu Berlin (2002/03). He taught history at the University of Dar es Salaam from 1969 on. In 1993 he was appointed Advisor and Principal Curator of the Zanzibar Museums. He also served as member of the South-South Exchange Programme for Research on the History of Development (SEPHIS 1995–2001) and as Chairman and Member of the Presidential Committees on the State University of Zanzibar (1995–2002). Professor Sheriff has published and edited a number of books, including *Slaves, Spices and Ivory in Zanzibar*. London, 1987. *Zanzibar Under Colonial Rule*. London, 1991. *The History and Conservation of Zanzibar Stone Town*. London, 1995. *Historical Zanzibar: Romance of the Ages*. London, 1995. *The Architecture of the Stone Town of Zanzibar*, London, 1998, as well as numerous scholarly articles. His current research interest is in the Dhow Culture of the Indian Ocean.
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The long and fruitful academic year at the Wissenschaftskolleg, away from the cares, distractions, and frustrations of my professional work at the Zanzibar Museums, is sadly coming to an end. It is an appropriate moment to draw up a balance sheet of what I have been able to accomplish against the perhaps wild expectations that I, and many others, may have come with.

I had come here with the hope of finally writing a book on the *longue durée* social and cultural relations across the western Indian Ocean, a subject that I had often skirted in my other writings, but that I always wanted an opportunity to give a full hearing once and for all. At the same time, I had come fresh from a museum project in Zanzibar that I could not leave behind altogether. In fact, my first contribution at Wiko was a presentation to the Museum Forum on our ideas for the new museum in Zanzibar. I had the good fortune of having a powerful critique from the late and lamented Professor Albert Wirz, whose demise a few months later has left a deep gap in African studies and a gaping hole in the hearts of many of his students, colleagues, and friends.

The two projects, fortunately for me, were not contradictory since, perhaps not surprisingly, the specific exhibition we have at hand in the House of Wonders Museum is on the Maritime Culture of the Indian Ocean, for which we have just received financial support. It includes the construction of a life-size boat, a *Mtepe*, which is now extinct, in which the planks were sewn rather than nailed, and which had a very distinctive shape and which is rich in Swahili folklore. My job just before coming here was to do the research on the method of construction and to find all the illustrations; and in February 2003, I had to go to Lamu in Kenya, its original homeland, to find the *dhow* builder whose grandfather had built one. The *Mtepe* is now under construction on the Zanzibar seafront, and I had to follow its progress from a distance through e-mail, which was not easy, intervening when I felt it was not being done according to the plans. It is expected to be launched in October.

The book project turned out to be far less manageable, precisely because the resources accessible to me in Berlin were far richer than I had expected. Although I had wanted to synthesize the social and cultural history of the western Indian Ocean over the *longue durée*, when I drew up my plans a couple of years ago, I had been more modest about what could be accomplished within ten months. As I then put it in my application to Wiko, it was “to concentrate in particular on the past two centuries, for which documentation is more abundant and oral information can be more reliably applied.” Faced for the first time in many years with the unrivalled library resources available to me in Berlin that may not be accessible to me again, I could not resist the temptation of exploiting them to the full for a truly *longue durée* synthesis. Therefore, as I am wont to do, I began at the beginning, from the first century of the Christian era, when documentary and archaeological evidence begin to be available for the Indian Ocean as a whole and for the East African coast in particular. Although I had already collected a lot of data and had even written some rough drafts for

the later period, effectively I could synthesize my data systematically only down to around 1500.

I do not regret having done this, nor am I one to blame the knife for the crime, as was brought out in Cornelia Vismann's presentation. As I said in my presentation at the Tuesday colloquium, for me, the library was the jewel in the Wissenschaftskolleg crown. Coming from a situation where there is hardly a library worth talking about beyond my own small personal one – and even when I had access at foreign libraries, I had to struggle to find the obscure materials that historians are condemned to do – the library facilities provided by the Wissenschaftskolleg have been little less than heavenly. I do not know if the library keeps individual counts of the number of requests; the average seems to be about 200 per Fellow, but I must have exceeded it; and although I did not myself keep count, I can say that I probably got more than 95% of the material I asked for from all over Germany, and some even from France.

Nevertheless, about two months before the end of my time here, I faced a crisis, a moment of reckoning. While the work before 1500 was an essential background in the evolution of the overall patterns of economic and socio-cultural relations across the western Indian Ocean, it is from the more recent centuries that we begin to get the intimate personal details to add socio-cultural flesh and blood to the skeleton of interactions and movement of people across the Indian Ocean that engendered cosmopolitan societies around its rim. In a moment of desperation, I did consider whether I should devote the rest of the time to a rewriting of the text to cover the whole theme for the general public. It could have been based on the work already done here and the incomplete data and drafts that I already had for the later period. Such a work had been strongly urged on me by many friends, who felt that my stuffy scholarly work does not reach the broader public that is interested in the question I am grappling with.

In the event, I decided to consolidate my synthesis for the period before 1500 and to devote the rest of the time to reading and photocopying as much as I could for the period after 1500 for later gurgitation during my spare time in Zanzibar, because these sources will not be accessible to me later. The material for this period is more voluminous, and I am sorry to say that I have not been able to do as thorough a survey as I was able to do for the earlier period. I hope that I have not abused the privilege of photocopying material to take to Zanzibar. In mitigation, I can only say that I will put the material to good use in the completion of the project begun at Wiko. When I get back to Zanzibar, I will naturally get sucked into the on-going museum project that will keep me busy at least until

December 2003. However, I hope that beginning early next year I will get more free time to get back to my manuscript, and I may well start with the text for the general public to map out the overall outline of the argument.

Having gone through the year, I must admit that although the theme proved to be of great interest to some of the other Fellows when I finally expounded it toward the end of the term, throughout the year I was working in isolation to a considerable extent. The Wiko philosophy of bringing together all branches of knowledge under one roof to permit cross-fertilization of ideas and methodologies was certainly interesting. I used every opportunity to try to understand what my colleagues in other fields were doing and where the frontiers of knowledge were in their respective fields; and I even read some books in the other disciplines that I had not touched in 30 years. Nevertheless, I felt I lacked a critical mass of people close enough in our undertakings to carry on a sustained discussion, until the second half of the term when Hilda Sabato joined us. She certainly enlivened the small band of historians, and through her initiative, a group, including an anthropologist, was born. We had a series of discussions on historiography and collective memory, and it may grow into something of a longer duration than the year at Wiko.

This sense of intellectual isolation was also partly broken by my interaction with the Indian Ocean group at the Zentrum Moderner Orient and by visits to several other universities, where I was invited to give a talk on my research at Wiko. They included the Humboldt University, where I had taught for a term a few years ago, and Heidelberg, Leipzig and Hanover during the last month of my stay in Berlin. This was a very good opportunity to interact with historians across the country, who raised many questions and offered many new insights.

Lest I leave an impression that I was too isolated at Wiko, I must say that events beyond the walls of Wiko – in Iraq, to be specific – brought many of us close together across our disciplinary boundaries. Many were the heated breakfast and lunch sessions where we found common grounds for an approach to a hyperpower unwilling to be restrained by international law, conventions, and world opinion, and to the first case of a pre-emptive war, which may well characterize the new century. We solved many world problems at those sessions, though most of them will still be with us for a long time to come.

I did face one other major problem, and although it was quickly solved, I should perhaps elaborate so that the administration and the Fellows can consider whether it is necessary and possible to make a provision for it in the future. I had come with three enormous registers of *dhow* movements that I had discovered in Mombasa in 2002, which I needed to

computerize in order to analyze and use the data in my writing. If I had had to do it myself, it would have consumed many weeks of my valuable Wiko time. However, there was no provision for research assistance. I must thank Dr. Nettelbeck for applying to some foundations on my behalf, and when that did not yield good results, he found a solution within the Wiko framework to facilitate my work. So the question that I leave with is whether other Fellows felt the need or could have used such research assistance to facilitate their work and maximize their opportunity here.

Finally, I must take this opportunity to acknowledge my gratitude to Wiko and its staff for making the year so pleasant and fruitful. The best thing that I can say about the administration as a whole, in contrast to my own experience in Zanzibar, is that, apart from the first weeks, when they had to guide us in the ways of the Kolleg and of Germany, it was there but almost invisible, which should be the goal of all administrations. It did everything that could have been expected of it, smoothly and without being a hindrance. I must also mention the very considerate staff of the restaurant, who took very good care of us, despite our bewildering dietary requirements, and always with a smile.



OF BARNACLES AND CLIFFS STEPHEN SIMPSON

Stephen Simpson graduated with an honours degree majoring in Entomology and Zoology at the University of Queensland, Australia, in 1978. He then travelled as a University of Queensland Travelling Scholar to the University of London in 1979, where he undertook his Ph.D. on locust feeding behaviour. Having graduated in 1982, he moved to the Department of Experimental Psychology at Oxford as a postdoctoral research scientist working on monkey neurophysiology. After a year, he took up a Departmental Lectureship in Behaviour, Neurophysiology and Entomology in the Department of Zoology at Oxford, and in 1986 was appointed to a tenured post in Zoology and to the Curatorship in Entomology at the University Museum of Natural History. He was appointed Reader in Zoology in 1996, then Professor of the Hope Entomological Collections in 1998. He holds a tutorial Fellowship at Jesus College and is Associate Head of Department of the Department of Zoology. Steve, his wife Lesley and two children, Nick, 14, and Alastair, 9, live outside Oxford. – Address: Department of Zoology, University of Oxford, South Parks Road, Oxford, OX1 3PS, United Kingdom.

When certain species of shark become encrusted with barnacles to the point where their streamlining becomes seriously impaired, they swim upriver into freshwater and wait for the barnacles, which are unable to cope with the osmotic shock, to drop off. Thus scoured, the sharks return to the ocean. I sit and write this report back at my desk in Oxford – back in the midst of the sea of meetings and responsibilities from which I had been largely spared for the past year. I am frantically failing to prevent some of the barnacles that had

dropped off during the year from reattaching themselves, along with some even bigger, more ugly ones.

The two most common responses I got when telling colleagues that I was to spend a year at Wiko as part of a two-man team with David Raubenheimer were: “But you will have no laboratory facilities”, and “Why spend a year in Berlin with David when you are already in the same department and close collaborators anyway?” Both are valid comments and warrant some discussion.

A year physically away from the laboratory, aside from a short trip back to run an experiment, has turned out not to have been a problem. This is thanks to three things. In large part it is due to Wiko having allowed us to appoint our senior post-doctoral scientist, Spencer Behmer, to take on the role of day-to-day manager of the lab, a responsibility that he assumed with great skill and effectiveness. Second, we were able to bring some of the graduate students and post-doctoral research associates across for short visits to discuss their experiments and data. Finally, there was e-mail – that double-edged sword. In fact, being away from Oxford has allowed us to write research papers and grant applications that otherwise would certainly not all have fitted into the interstices of our busy lives. As a consequence, two successful grant applications mean that the laboratory is secure for the coming three years, eight primary research papers are in press or were published during the year, three others are under review, and an edited volume has gone to press.

Nevertheless, it is possible to squeeze the writing of grants and papers and the editing of books into normal life, which means that, in this sense, the year at Wiko was facilitatory rather than necessary. But writing books is an entirely different matter – or at least it is for me. That requires three ingredients: the time to read widely, the time to think, and the company of stimulating colleagues. Wiko provided all three, as well as easy access to the literature we needed, thanks to the wonderful library staff. And here I return to the query about why spend a year with David in Berlin when we both come from the same place. The short answer is that being within the same institution and intersecting for an hour or so each week is not the same as spending each and every day for a year in a shared office. This could have been catastrophic, of course: we might have ended the year no longer speaking, let alone writing together. We came with the advantage of a long-standing and productive collaboration, like minds, a craving for caffeine and beer, and similar taste in music. We left Wiko having spent a superbly stimulating and fun year, in which we applied to humans concepts in nutritional biology that have derived from our work over the past 16 years on insects (see the report of our Abendkolloquium in this volume) and also

broke the back of a book for Princeton University Press, titled “Integrative Behavior: from Neurons to Societies”.

Both projects required coming to grips with vast and diverse literatures. Both are also the type of endeavour that involves flying in the face of vested ideas. Ragh Gadagkar argued in his entry in the last yearbook that Wiko’s unique strength is that it provides the ideal environment in which ambitious, renegade projects can be conceived and nurtured – where new mountains can be constructed. It struck me that this description applied to our two projects. It remains to be seen whether we end up, in Ragh’s words, throwing ourselves off our own cliffs, but whatever happens, we are pleased by the view.

David and I worked closely together, but we could not have had anything like the year we had without the other biologists. Villa Jaffé was also home to Georg Striedter, Alex Kacelnik, Miguel Rodríguez-Gironés and Stefano Nolfi, while Ragh Gadagkar, Barbara Finlay, Eörs Szathmáry, Tecumseh Fitch and Luis Puelles were just down Wallotstraße, and Rüdiger Wehner flew in regularly. It would be hard to collect together a more exciting, widely read, conceptually adventurous bunch, and it was a real privilege to spend a year with them and to enjoy their ideas and friendship.

And we biologists were but a group within the Fellowship. Much has been written in past yearbooks comparing the different styles, preoccupations and methods of the scientists and our colleagues in the humanities; a distinction that was illustrated during the weekly colloquia in the contrast between visually striking, data-rich (ridden) Powerpoint presentations and meticulously worded, read texts. Reinhart Meyer-Kalkus observed one Thursday evening over dinner that science communication is the new theatre, and scientists the new performers, and he may well be right. Techniques of presentation aside, the biggest challenge during the colloquia for all of us was to judge how long a bridge of preliminary background to build before attempting to throw new, specialist contributions across the remaining gulf between the speaker and the individual members of the audience. Then, during the discussion afterwards, the problem was how to distinguish criticism of the speaker’s own contributions from that of the bridge.

The colloquium discussions were also a fascinating part of the sociological experiment that Wiko represents. At the beginning of a Wiko year, we all arrive more or less unknown to the other Fellows – stripped of our context and reputations. This is a profoundly uncomfortable condition for most academics. The quality of question asked at colloquia soon becomes a currency for establishing a reputation, and the colloquium itself becomes inordinately important. Speaking for myself – and I guess I’m not alone – I have never felt so

nervous about any other talk I've given in my career. It was also interesting from a socio-logical perspective to follow the ontogeny of the year. The first few months were typically spent trying to scrape off barnacles, then, mindful that a year is finite, Fellows worked single-mindedly on their projects. It was nearing the end of the year, when books were finished or it was clear that they wouldn't be, reputations had been established, and character traits recognised, that many of the most stimulating lunchtime discussions occurred – leading us to feel that only then were we ready to start the year.

The other essential ingredient to a successful year is a happy domestic life, and in that regard my year was a resounding success. We had a wonderful time. This year saw the largest population of children ever at Wiko, and an exceedingly talented and interesting set of Fellows' partners. A strong community developed among families living at Villa Walther. Our children went to school and played together, we shared our experiences of Berlin, socialised, and made what promise to be life-long friendships. The Thursday dinners, where spouses and children were made welcome, were particularly important in helping this process along and in integrating Fellows with and without families. Academic matters aside, this year's Fellows, their partners and families were quite simply a lovely set of people.



TRADITION OF RIGHTS MAHENDRA PAL SINGH

Mahendra Pal Singh, born on 15 July 1940 in Meerut, India, received his B.A., LL.B. from Agra University and his LL.M., LL.D. from Lucknow University in India and his LL.M from Columbia University, New York. He is Professor of Law at the University of Delhi, India. He was in 1981–82 and again in 1985 Alexander von Humboldt Fellow at Heidelberg, in 1987–88 visiting professor at the South Asia Institute, Heidelberg and in 1991–92 visiting professor at the Faculty of Law, University of Heidelberg. In 1999–2000 and 2001, he was a Fellow at the Max Planck Institute for Comparative Public Law and International Law, Heidelberg and visiting professor at the University of Hong Kong and the City University of Hong Kong in 1993, 94, 95, 98 and 2000 and at Kansai University, Osaka in 2002. His publications include over four scores of papers in various legal journals and edited works and ten books including *German Administrative Law in Common Law Perspective*, 2nd ed. Berlin, New York, 2001. *Freedom of Trade and Commerce in India*. New Delhi, 1985. *Comparative Constitutional Law: Festschrift in Honour of Professor P. K. Tripathi*. Lucknow, 1989. *V. N. Shukla's Constitution of India*, 9th ed. Lucknow, 2001 and *Legal Dimensions of Market Economy*. Delhi, 1997. His major interests are comparative public law and human rights. – Address: Faculty of Law, University of Delhi, Delhi 110007, India. E-mail: mpsingh2@vsnl.com or mpjitholi@rediffmail.com.

From the works of some of the former Fellows, I learnt that they came to Wiko with one project and ended up with another. Until I came to Wiko, I could not imagine that it could happen to me, too. In the totality of academic freedom and ambience at Wiko, it is so natural that I would have been at a loss had it not happened to me. Having come with a

specific project, which I had submitted to Wiko, I diligently started grappling with it in the hope that by the end of my stay I would have some sort of manuscript ready for publication as a monograph. While I was still struggling to work out something which either the others had not said or had not said the way I would like to say, I got an invitation from a law school in India to contribute something on ancient Indian jurisprudence or law for the maiden issue of its thematic journal. In view of my preoccupation with my project, I thought an excursion into ancient Indian jurisprudence or law would distract me from my goal. Simultaneously, I also felt the need to associate myself with the initiative the law school was taking. Finally I found a compromise in agreeing to write something on human rights in ancient India, since my project at Wiko was concerned with human rights and the protection of minorities in India. The law school readily accepted my compromise formula.

As I started searching the relevant literature and looking into it, I began to discover ideas and materials which were either entirely new or had not been sufficiently examined. But the question was: how do I relate the past to the present? I found the answer that traditions have a great role in the making and functioning of current notions, norms and institutions. The idea of human rights could be realised in India only if she had traditions that favoured and supported that idea. In their absence, it was hard to push the idea through. But in view of the long, chequered, diverse and in many ways incomplete history of India and of the relevant nomenclature, it was not easy to determine the Indian tradition of human rights. The notion of human rights, being comparatively recent, could not be expected to be located in the ancient Indian literature and vocabulary. Fortunately, however, India has a strong written tradition in an unbroken chain from the time of the Vedas – estimated to extend from between 6000 to 1000 BCE – until the beginning of British rule towards the end of the eighteenth century. This tradition grew along the notion of *dharma*, which was an ever-evolving notion around the core that it was something that maintains the universe. What maintained the universe was not based on any divine revelation or settled forever, but was an ever-developing exercise based on human reason and rationality. This exercise was the dominant theme of the Indian tradition, which gave it immense tolerance to admit any number of arguments and views in support of what could sustain the universe and ensure good life to all human beings. The notion of *dharma*, so evolved and understood, opened the door for me to correlate the idea of human rights to the Indian tradition. It also showed the possibility of a better justification and framework for human rights. Because the notion of *dharma* could differ with time, place and situation in life, it did not insist upon

uniformity of standards for all and forever. The ultimate goal of human dignity could be achieved in different ways in different situations. In some situations it could require non-interference from the state, while in others it could require the state to intervene. While in the developed societies, where the individual has gathered enough resources for his welfare and is in a position to compete with others on a somewhat level field, in developing and underdeveloped societies where most people are without resources and unable to enter into fair competition, the state may be required to intervene to create a level field. While the developed West may and does have difficulty accepting this argument for its conception of human rights, the rest of the world can sustain the notion of human rights only on the basis of this argument. The notion of *dharma* is capable of accommodating both sides of this argument, inasmuch as it does not insist upon the universal application of any notions.

Examining the notion of *dharma*, the position of the individual and the relationship between rights and duties in the Indian tradition in the light of current notions of human rights, I found that the Indian tradition supported those notions. India's active support for human rights internationally and their incorporation in its policy and legal system fully confirm this finding. The concrete reality of human rights in India, however, is not as bright as the country's support for them. Obviously, my research leads to the conclusion that this is not because of any adverse tradition. Therefore, I had to search for the causes of the gap between the theory and the practice. The search is not yet over, but my tentative findings are that, in view of the difference in the history, traditions and current social and economic conditions between India and the West, India needs to develop a new or modified version of human rights and strategies for their realisation. Human rights in India do not need to defend themselves against the state as much as they need state support for their realisation. Therefore, the state must take the necessary effective measures for their realisation.

Some of these findings I was able to publish or submit for publication during the course of my stay at Wiko. They include:

"Tracing the Human Rights to Ancient Indian Tradition: its Relevance to the Understanding and Application of the International Bill of Rights." *Indian Journal of Juridical Sciences* 137, 1 (2003).

"The Statics and the Dynamics of the Fundamental Rights and the Directive Principles: a Human Rights Perspective." *Supreme Court Cases* 5, 1, Journal, 2003.

“Human Rights in the Indian Perspective.” *Kansai University Review of Law and Politics* 25 (2004). Faculty of Law, Kansai University, Osaka.

“Human Rights in the Indian Tradition: Alternatives in the Understanding and Realization of the Human Rights Regime.” *Zeitschrift für ausländisches öffentliches Recht und Völkerrecht* (Heidelberg Journal of International Law) 63 (2003).

Not exactly on the same theme but related to it, I also reviewed the following two books: Menski, Werner. *Comparative Law in a Global Context: the Legal Systems of Asia and Africa*. London: Platinium, 2000. In *International Quarterly for Asian Studies* 34 (2003): 1–2. Menski, Werner. *Modern Indian Family Law*. Richmond: Curzon, 2000. In *International Quarterly for Asian Studies* 34 (2003): 3–4.

With the support of Wiko and Professors Helmut Goerlich, University of Leipzig, and Michael von Hauff, University of Kaiserslautern, I was also able to organise a two-day conference at Wiko on Human Rights and Basic Needs: Theory and Practice in India, in which a dozen scholars from different countries and disciplines presented papers on different aspects of the theme of the conference. A few Fellows from Wiko and some other scholars from Berlin and nearby places also participated. After revision by their authors, the conference papers are being published as a book.

Wiko also gave me the opportunity to work in the company of and to interact with scholars from diverse disciplines for the first time. Though of course every Fellow was master of his or her own discipline and thoroughly immersed in it, the interaction on issues of common interest was always highly rewarding and educational. Even general discussions at the lunch or dinner table could reveal truths and ideas that would otherwise have remained unknown to me. Above all, the Tuesday colloquiums and special lectures and presentations on Wednesday or other evenings gave immense insights into matters, some of which would have always remained beyond my reach in their substance, form and style of presentation. In these lectures and discussions, convergence between social and natural sciences was always clearly visible.

A few of us also met once a fortnight under the banner of “Globalization Group” to discuss various issues concerning or arising out of globalisation. The Group had several fruitful discussions led by Fellows as well as by guest speakers.

At Wiko I also got the opportunity to meet several former Fellows and scholars from near and far-off places. Some of them also gave me the opportunity to visit their institutions

and speak to them, their colleagues and students. These visits, particularly to the Humboldt University and the Free University, Berlin and the Max Planck Institute of Social Anthropology, Halle were highly rewarding. Courtesy of my former students, I also got the opportunity to share my views at a few institutions in England.

During my stay at Wiko, the annual meeting of the Alexander von Humboldt Foundation also took place in Berlin, which gave me the opportunity to meet some of the former Fellows and the staff of the Foundation.

Unlike at most other academic institutions, socialising is an integral part of the academic activity at Wiko. Apart from daily lunch and Thursday dinner, which guests and family members could also join, on several other occasions all Fellows and their families, many former Fellows, other scholars and Wiko staff also met. Among these occasions, the reception of the Fellows at the beginning of the session in October and the farewell dinner in July were the most memorable. Equally memorable were the boat trips at the beginning and end of the session. Since most of the Fellows stay in the same building at Koenigsallee 20, socialising among them is natural even otherwise. Fellow Raghavendra Gadagkar and his wife Geetha stayed in the flat above ours and we often met for Indian meals in the evenings. We continued these meetings even after they moved to the other part of the building. Not only did we enjoy these meetings immensely, they have also made us friends forever. Among other Fellows, our socialising with Walter and Susi Laqueur, Grażyna Skapska, Hilda Sabato, Abdul Sheriff and Cornelia Vismann, her husband Balthasar Haußmann and their daughter Melina is most memorable. We are still in touch with some of them. My wife and I were also fortunate to have and make some friends and acquaintances in Berlin outside of Wiko. Among others, a few friends from other parts of Germany, several former students and our daughter Swati and son-in-law Surya also visited us during our stay at Wiko.

All this and much more was made possible by the founding principle of Wiko – to provide to the Fellows every possible opportunity without any responsibility – and by its efficient and caring staff which ensures the operation of that principle in every respect. Its learned and most considerate Rector, Professor Dr. Grimm, from whom I drew special benefit because of our common discipline, the Secretary Dr. Nettelbeck, Dr. Meyer-Kalkus, Ms. von Arnim, language teacher Ms. von Kügelgen, the library director Ms. Bottomly and her colleagues, Ms. Klöhn and her colleagues in the restaurant, the computer staff and everyone else was remarkable in efficiency, co-operation and care. I wish

that I could stay for a much longer period at Wiko and could visit it again. But I also wish that others also get the opportunity to have such a memorable and fruitful experience.

Let us hope the society replicates the example of Wiko.



BETWEEN PAST AND FUTURE GRAŻYNA SKĄPSKA

Grażyna Skapska was born in 1948 and graduated in law in 1971 and in sociology in 1974 at the Jagiellonian University, Cracow, Poland. After her habilitation in 1991, she became Professor of Sociology at the Jagiellonian University in 1996. She was visiting professor at the University of New South Wales, Australia (1993), University of Sydney, Australia (1995 and 1996), Cornell University (1997), and the International Institute for Sociology of Law, Onati, Spain (1999, 2000, and 2001). Member of the Editorial Board of *Droit et Société* and *Ius et Lex*. She has worked on legal consciousness (*Social Background of Attitudes Toward Law*, published in Polish in 1982), law and social change (*Law and the Dynamics of Social Change*, published in Polish in 1991), privatization as a part of postcommunist transformation (*A Fourth Way? Privatization, Property, and the Emergence of New Market Economies*, with G. S. Alexander. New York, 1994), and the rule of law and postcommunist constitutionalism in light of contemporary social theories ("Paradigm Lost? The Constitutional Process in Poland and the Hope for a Grass-Roots Constitutionalism." In *The Rule of Law after Communism*, edited by Martin Krygier and Adam Czarnota. Brookfield, 1999. *Between Civil Society and Europe. Sociological Investigations of Constitutionalism after Communism*. To appear in 2004). – Address: Institute of Sociology, Jagiellonian University, 52 Grodzka Street, 31-044 Cracow, Poland.

On a sunny day in October 2002, I arrived in Berlin with my project of investigating the links between civil society, civil courage, and the newly emerging right to truth about atrocities committed in the past by dictatorial and totalitarian regimes. Berlin was the best place for such an endeavor, since Germany had faced the dictatorial past twice in the last

60 years, and German critical social theory seemed to offer the best theoretical perspective for my studies. I also looked forward to contacts with other Fellows and with the cultures and philosophical ideas they represented. In this respect, as in all others, the reality of Wiko's social life went far beyond my expectations. Another project I brought with me dealt with the past somewhat differently. It focused on the impact of the past atrocities committed in Europe, especially in the 20th century, on the formation of European identity, as an important social context of the European constitution.

In the light of a threefold argument around which my research was constructed, socio-logical study on truth about past gross human rights violations in fact presents a study about society itself, about horizons of experience, everyday practices of ordinary people, and the rules of social communication. Therefore the public debate about past gross human rights violations and the ways people "come to terms" with them reflects the various experiences of victims, victims' families, and perpetrators. We are dealing here with a truth that emerges from the investigation of these various experiences and that is, additionally, subordinated to the rules of its political and legal institutionalization. Hence, it was a study about various institutional arrangements and also about distortions and manipulations of meanings.

Because the "truth" about the past is so very close to the everyday experiences of ordinary people, which consist in the long-term co-existence of victims and the perpetrators, it is a truth about the everyday opportunism, cowardice, toleration of human rights abuse, or, on the contrary, about the civil courage of ordinary people, the "tacit heroes" of world history. Therefore, the social reckoning of the past in the form of public debate on it and the institutionalization of the ways the past is officially investigated presents, in the words of Zygmunt Bauman, a "moral moment" in the lives of contemporary societies. Thus, in light of my study, the truth about past human rights violations has a transformative and even emancipatory dimension: it reveals spheres of tabooization, of stereotypical thinking, of collective hypocrisies, and of communicative power and oppression. It presents society at large with an opportunity for a large-scale learning process about its authentic identity. It reveals the "other", who is also "us", and in this way it enables us to take a critical stance toward our institutions and ourselves. Since this can be a very humiliating experience, it demands a great deal of civil courage from societies that undergo this painful process of critical self-observation. It also has great importance for the development of social sciences, hitherto distorted by oppressive ideologies.

Research on the newly emerging right to truth contributed to the development of Critical Theory, as elaborated by its most contemporary representatives, predominantly Jürgen Habermas: It added an important institutional dimension to the concept of communicative action and the dimension of the everyday experiences of ordinary people to the concepts of discursive truth, social communication, and social emancipation. It focused on differentiated institutional arrangements of implementing the right to truth: truth commissions, truth and reconciliation commissions, regular trials of perpetrators, and the establishment of specific scientific institutions. It revealed social factors that hinder the formation of the right to truth and that contribute to societal immaturity even after the collapse of dictatorial regimes, as well as the social factors that present the most important social context for the successful implementation of the right to truth.

Keen observers of social life indicate several phenomena that characterize late modern society life-worlds and that impede public debate on past atrocities. They are consumerism, this “unbearable lightness of being” – to use Milan Kundera’s apt phrase; the specific forms of political correctness that promote conformity with mainstream popular opinions, resulting in a peculiar anti-politics; and the ideology of progressivism, which imposes forgetting, combined with purely utilitarian conceptualizations of politics, based on the *calculus* of costs and benefits.

The culture of consumerism consists in the elevation of private well-being and legitimizes the conscious concealment and conscious silencing of a difficult past for the sake of the present stage, for instance under the motto “living well is the best revenge”. It is based on the clear preference given to the stability of the societal situation, to a life without responsibility, and to avoidance of the difficult topics of human rights violations or genocide in exchange for a present abundance of consumer goods.

Emancipation and maturity are badly served by those forms of political correctness that consist in not tackling uncomfortable subjects, not naming things by their real names, and not questioning the status quo, i.e., not challenging a social cohesion based on the commonality of opinions. These lead to the silencing of uncomfortable voices and all difficult truths that do not fit the main current. Moreover, concerns with social cohesion and unwillingness to underline points of disagreement lead this new political correctness to deny the deep divide between supporters and opponents of authoritarian and totalitarian regimes and to exclude and increasingly pacify troublemakers.

This imposed progressivism, ideologies of “forgetting about the difficult past for the sake of the future” – especially if combined with utilitarian cost-benefit analyses –

eliminate important social experiences and their bearers, eliminate from the public realm those who have important grievances, eliminate from the public sphere the important experiences of human rights violations of the prisoners of gulags, of detention camps, experiences of families of disappeared persons, as if they weighed less than the projects of future well-being. This form of progressivistic immaturity has two-fold consequences important for the transformation of post-totalitarian or post-dictatorial societies. First, it has empirical consequences that consist in an artificial blurring of differences between the regime's supporters and its opponents, between perpetrators and their victims, as if – an often repeated argument – everyone who happened to live under a dictatorship was equally sullied by it. Second, it results in a peculiar form of democracy that excludes the voices and complaints of the former regime's victims.

However, there are contrasting sociological observations on phenomena characteristic of contemporary societies struggling for a reckoning of the atrocious past and for protection of the right to truth. Thus, governmental or international bodies have seldom exposed how and why gross human rights violations evolved, who perpetrated them, or the extent of the victimization. This task has been mainly undertaken by NGOs, with all their understandable limitations, – such as Charter 77 in the former Czechoslovakia, or the “Memorial” organization in Russia, or the Committee for Defense of Workers in the late seventies and early eighties in Poland, or organizations of mothers and families of disappeared persons in Latin America – dedicated journalists and committed researchers to whom so much is owed for fulfilling this needed task. To this list one should add the churches and church-linked organizations of civil society that greatly contributed to reversing the policy of concealment.

For many reasons, my works developed somewhat differently than expected. I was not able to finish a book, an *Opus Magnum*, as a result of my ten months of studies. This still has to be finished. The project ended in a series of papers: two of them are to be published in the Polish journal *Ius et Lex* (one in Polish, one in English), the other two in books dealing with post-communist societies and the moral component of social sciences.

The second major research initiative that occupied my fellowship year was the European constitution in the broader sociological and political contexts. Thanks to generous support from the Otto and Martha Fischbeck Foundation, I was able to organize a workshop that dealt with the future European Constitution's legitimacy in the values and worldviews of an ever more diverse and plural European society and its reflective contribution to the formation of European identity – especially from the perspective of the role that Europe's

dictatorial past plays in identity formation. Here my research and the presentation focused on the differences between Western and Eastern Europe.

I am sure I am expressing the general feelings that we will all miss our colleagues, the lunches and dinners spent together, the social gatherings, and the maximally comfortable working conditions, not to mention the exquisitely friendly atmosphere created by the Wiko's staff. It was a unique time in our lives for all of us.



THE PYGMALION EFFECT
VICTOR I. STOICHIȚA

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A few months ago, during a lunch conversation with Joachim Nettelbeck, I told him that my Wiko project was a book on the Pygmalion myth, which would include seven chapters. I added that it would be wonderful to have at my disposal seven Wiko years (that is, one year for each chapter). Joachim Nettelbeck said nothing, but only smiled politely. Fortunately, two weeks ago, I wrote the last line of the last chapter of my “Pygmalion Effect”. It wouldn't have been possible without the help of the Wiko staff – the huge quantity of information that I got with the help of the Library alone, for example – and without the conversation with many Berlin colleagues and with many Wiko Fellows. It was a pleasure to converse with Herbert Molderings about the representation of the body in modern art, with Carlo Severi about anthropological aspects of the “Doppelgänger”, with Isabel

Mundry about the links between music, pulse and heart rhythm in the Middle Ages, with Cornelia Vismann about the celebrated morals trial of the most famous Greek sculptor's model – the beautiful Phryné. But maybe something was even more important than all this: the temptation and the effort to explain to other Fellows, including the "Naturwissenschaften" team, why it is so significant today to deal with the history of visual representation and with the great artistic myths. I tried to do it mostly in German or in English, sometimes in Italian or Spanish, but now, in putting my plea on paper, I prefer to use the language that, for an émigré from a former "Eastern European" country, is still a cultural instrument of communication. So, I will switch to French.

Lorsque au néfaste banquet de Tantale, Déméter avala par mégarde l'épaule de Pélops, les dieux la remplacèrent par une pièce d'ivoire qui prit tellement bien que, si l'on en croit l'histoire, le héros recomposé, vécut encore longtemps et, semble-t-il, heureux. Peut-être même qu'avec le temps cette greffe parfaite, simple prothèse miraculeuse au départ, devint un signe d'excellence, voire de beauté, et contribua à la passion que le grand Poséidon conçut pour le jeune homme. Narcisse ne tomba-t-il pas amoureux de lui-même en mirant dans la source son propre « cou d'ivoire » ? Et Salamakis ne s'éprit-elle pas de l'Herma-phrodite qui lui apparut dans les eaux du lac comme « une statue éburnéenne prise dans un verre translucide » ?

Pygmalion, quant à lui, va encore plus loin. Dégoûté des femmes, il fabrique une statue d'ivoire dont il tombe amoureux. Comment comprendre ce choix précis ? Quel rôle joue l'ivoire dans cette histoire ? Elle n'est peut-être qu'une simple métaphore, désignant quelque chose de flou, entre une carnation idéale et la pâle matière des rêves.

La création pygmalionienne est avant tout un acte solitaire et fantasmatique. Sa place dans le grand rouage des *Métamorphoses* est importante et on en a souligné à maintes reprises les correspondances avec les autres récits de l'œuvre. La première est d'ordre contextuel, puisque l'épisode de Pygmalion prend place parmi les légendes qu'Ovide fait chanter à Orphée après la perte de sa bien-aimée Eurydice, pétrifiée, elle, par le regard imprudent de son mari. Récit dans le récit, l'histoire de Pygmalion apparaît ainsi comme un chant d'espoir de résurrection. Un lien encore plus étroit s'établit entre l'histoire de la statue animée et l'épisode qui la précède, et qui lui sert à vrai dire de prologue. Les « impures Propétides », des prostituées blasphématoires, sont punies et transformées en pierre. Elles constituent pour Pygmalion l'exemple *in malo* de l'impudence féminine, d'où sa solitude librement assumée et tout ce qui s'ensuit. La *virgo* qu'il crée a donc une valeur de substi-

tution. La statue animée est une figure symétrique, détournée et retournée des femmes pétrifiées.

Il y a dans le bref passage concernant la métamorphose des Propétides un élément qui mérite d'être souligné. Il s'agit du fait qu'Ovide propose explicitement un cas de « mutation minimale » : avant même d'être transformées, les impudentes étaient déjà « presque de pierre ».

Puisqu'elles « avaient dépouillé toute pudeur et que leur sang durci ne rougissait plus leur visage, elle furent, par une altération à peine sensible, changées en pierres. » (Met. X, 241–242).

Il y a ici un balancement entre le niveau métaphorique de la pétrification et sa réalisation punitive. Dans la symétrie qui s'établit entre le « prologue » et l'« histoire » qui suit, le motif de l'« altération à peine sensible » (*paruo discrimine*) réapparaît, mais modifié et renversé. Avant même d'être animée (par la volonté divine), la statue, telle qu'Ovide nous la présente, semblait déjà (grâce à l'art du sculpteur) « vivante » (*quam vivere credas*). On a noté à juste titre l'utilisation qu'Ovide fait à cet endroit de la seconde personne de l'indicatif présent. L'interpellation directe, (« tu peux croire qu'elle est vivante ») transforme le lecteur en une espèce de voyeur, témoin privilégié d'un scénario érotique, d'animation et de création, lent et laborieux. La richesse des cinquante-quatre vers qu'Ovide consacre à cette « métamorphose » est considérable, et en dépit de plusieurs études importantes, il y a encore des éléments résistants, qui attendent leur décryptage.

Une première question, restée encore ouverte, concerne justement le matériau dans lequel Pygmalion fabrique la statue. Ovide insiste, en revenant bien six fois sur le mot *ebur* (ivoire) ou sur ses dérivés. Cette insistance ne semble pourtant pas avoir trop inquiété les commentateurs, qui, en général, lui ont prêté peu d'attention, là où ils ne l'ont pas carrément escamotée ou mésestimée. Dans son commentaire aux *Métamorphoses* (par ailleurs excellent), Franz Bömer considère que la question du matériau serait « insignifiante ». Il s'agit d'une solution d'extrême prudence, qui a sans doute ses mérites. En effet, une fois la question ouverte, les difficultés se succèdent. Nous prenons pour notre part un chemin plus risqué, en préférant voir dans le choix d'Ovide (préparé par ses sources) une intention porteuse de signification. Considérer cette indication comme résultat d'un simple caprice poétique et remplacer simplement l'ivoire par le marbre – comme l'ont fait beaucoup de commentateurs ou illustrateurs postérieurs – appauvrit le récit ovidien. Lui attribuer un caractère intentionnel s'avère en revanche enrichissant. En effet, la première responsable

d'une telle transformation est « la merveilleuse habileté » (*feliciter arte*) de l'artiste. Celle-ci n'a pas à lutter avec la dureté de la pierre, mais s'applique à un matériau plus tendre et pour ainsi dire plus « chaud ». Le travail de Pygmalion consiste en la simulation de la chair *dans* l'ivoire, c'est à dire *dans* l'os. Dans ce premier passage de récit, l'« incarnation » est évidemment et inévitablement incomplète et d'autres stratégies seront mises en œuvre pour la réaliser. Avant de les passer en revue, il faut pourtant nous confronter à une difficulté importante, et par là même, significative : l'acte de modeler *en* ivoire, tel qu'Ovide le met en avant (*sculpsit ebur/formamque dedit*) ne peut s'appliquer à une statue grandeur nature. La statue de Pygmalion, taillée et façonnée *dans* l'ivoire, devait forcément être une statue de dimensions réduites. La « métamorphose » qui suivra impliquera donc non seulement un passage de l'« os » à la « chair », mais aussi (et avant tout) un agrandissement magique qui transformera une figuration minuscule en un double à dimensions humaines. Le mythe de Pygmalion – histoire d'un morceau d'ivoire qui devient « femme » – s'appuie sur une extraordinaire dialectique, puisqu'il se révèle être *en même temps* un mythe d'animation et un mythe d'investissement fantasmatique.

Quant à mon étude sur la fortune critique de l'histoire de Pygmalion dans la culture occidentale, je me suis proposé d'interroger les médias de cet investissement phantasmatique, depuis la première thématisation de l'« os » en tant que matériau plastique et symbolique et jusqu'à l'agrandissement (technique-symbolique) proposé par l'art du film, considéré en tant que médium privilégié de la circulation des phantasmes animés.



TIME TO THINK THINGS THROUGH GEORG STRIEDTER

I was born in Berlin in 1962, emigrated to the US in 1978, and then studied “Neurobiology and Behavior” at Cornell University, at the University of California in San Diego, and at the California Institute of Technology. Since 1995, I have been an Associate Professor in the Department of Neurobiology and Behavior at the University of California, Irvine. One of my two major research interests is neuroethology, which may be defined as the study of those neural mechanisms that underlie natural, species-typical behaviors. Specifically, I investigate the neural mechanisms of vocal imitation in parrots and other birds. My second major field of research is the study of how brains develop and evolve. Hence my goal for this fellowship year, which was to write a book tentatively entitled “Principles of Brain Evolution”, in which I try to synthesize those interests and set a possible agenda for further research. – Address: Department of Neurobiology and Behavior, University of California at Irvine, 2205 Bio Sci II, Irvine, CA 92697-4550, USA.

Berlin – 2 weeks to go: Back in college, I often wished for more time so that I could give “my best” more often. Studying for exams, writing term papers – even photography – I often felt I had to stop before I had done the best I could (at least, I often *thought* I could do better if I had more time ...). In graduate school and as a postdoctoral fellow, this frustration eased, but professorhood made life speed up again. I didn’t know it would be so full of scheduling conflicts and competing priorities. There’s always something that needs doing right away, rarely time to chase down vague ideas that might or might not bear fruit, and too little time for sustained assaults on difficult questions. Yet, part of me always wants

to do just that: to think *through* many of the questions I had thought *about* for years. But where and how? The Wissenschaftskolleg turned out to be the ideal place.

I arrived in Berlin with the desire to write a book but no experience in actually writing one. I had an outline, numerous notes, two sample chapters, and a book contract – but could I really pull it off? I wasn't sure. I envisioned a book on “principles of brain evolution”, but what were those principles? I was sure that brain evolution is not the outcome of “mere chance”, but I also knew that brain evolution is not “law-like” in any simple sense. I sensed a middle ground but had not explored it in detail. Would a year be enough to clear away the fog? I took that question seriously because, as a fairly junior research scientist, I could not afford to have half a book hanging over me at year's end. Thus, I began last summer with both enthusiasm and anxiety. What did I have to say, whom did I want to say it to, and what style should I use? So many questions to resolve, so much to keep in mind at once – a confusing time. Fortunately, I gradually settled down and began simply to write, following the sequence of my original outline, trusting that my plan was well conceived, hoping that I would be able to solve unforeseen problems along the way. Happily, I think my trust was not misplaced. The outline had to be modified in merely minor ways and the book's structure actually forced me to think through some issues that I had not previously thought about. That was good fun – discovery!

The book is not yet finished, but I can see the end of my tunnel. I wrote about five chapters, each containing roughly 15,000 words and 15 illustrations. When I print it all out, it is a reasonable “pile”. So the daily “paragraphs or two” actually added up to something after all – as a Darwinist, I should have known they would! The gnarly chapter about “laws, principles and regularities” is still sketchy, but becoming clearer in my head. Similarly, the chapter about human brains is incomplete but taking shape inside of me. Thus, assuming I stay on track, I should have a readable draft of the whole book by Christmas. That cheers me up! Of course, as is typical of me, I am now becoming increasingly nervous about what “others” will think. How will the experts react to passages in which I have simplified complexities? Will the non-experts feel overwhelmed by the details and citations? Will my editor want an entirely different kind of book? Who knows ... but I do care: why write if you don't? Fellow Fellows Barb, David and Stefano kindly read some of my chapters and their reactions give me hope, but the nervousness persists. I suppose time will tell; I know I have worked hard.

Can I summarize my all-but-book in a nutshell? I guess a summary would go like this: As one might expect, given that all vertebrates descended from a common ancestor,

vertebrate brains are all built according to a common plan. That plan is extremely sketchy, however; species differences abound. One way of dealing with these species differences is to describe and catalog them, but that is not enough. A more interesting way to look at species differences is to reconstruct how they came about in evolution – to become a historian of brains. But even that is not enough for me: I want to explain how and why the various changes in brain structure occurred. This is difficult, of course, but not impossible. Advances in functional neurobiology allow us to estimate how changes in brain structure might have altered behavior; and that, in turn, allows us to construct plausible scenarios about why natural selection favored those changes. In addition, we can try to explain species differences in adult brain organization by showing how brain development was modified in evolution (after all, adult species differences always result from changes in development). This approach fascinates me because it yields hypotheses that can be tested by means of comparative and/or experimental embryology. It also opens the door to explaining why some kinds of evolutionary change have occurred repeatedly. Specifically, I propose that many regularities in the process of brain evolution can be explained in terms of regularities in brain development. In some cases, we can even explain the exceptions to the “evolutionary rule” in terms of changes in developmental mechanism. That, at least, is the approach I try to promote in the book.

On to life at the Wiko. As I said, it is an ideal place in which to tackle major projects in an unhurried way. The library services were excellent, my office large and quiet, and the computer services nearly ideal (since computer support staff tend to be noticed only when something goes wrong, I want to extend a special thanks to them). The near-daily lunches took some time to get used to, since I tend to be quiet when I eat (at least in the middle of the workday, with half-baked paragraphs still coursing through my brain) but the food was good and I got hooked on those tasty espressos after lunch. I also came to appreciate talking with some of the other Fellows over lunch. Two of them I had known previously, but the others were pleasant new discoveries. Steve Simpson and David Raubenheimer, in particular, became new friends: we “click” both as people and as biologists – and I had known neither one before I came to the Wiko. So a special thanks for that! Several “spouses”, particularly Lesley Simpson and Frouke Wieringa, were also great company and, incidentally, worked their hearts out to help us all put on a stylish farewell party. It should be no surprise that interesting Fellows also tend to have interesting partners! Unfortunately, I never heard those “spouses” ask questions during the Wiko seminars and colloquia. Perhaps they didn’t feel that it was their place to speak, and perhaps that is

indeed the tradition, but I still wonder what they thought at times (particularly when the conversation turned to topics that I knew they knew a lot about).

Which brings me to the most hallowed of all Wiko institutions – the Tuesday colloquium. I really enjoyed 9 or 10 of them – they found a place in my closely guarded long-term memory. Invaluable experiences, but one must wonder: why didn't I appreciate more of those colloquia? Is it just that I'm a narrow-minded neuroscientist? I think not, since four of my favorite talks were by social scientists and one by an art historian. Indeed, I think the supposed dichotomy of natural versus social scientists was not as palpable to me as it was (apparently) to other Fellows. I didn't care whether the talks were given extemporaneously or read out loud, illustrated with colorful slides or barely an eye blink, data-heavy or purely theoretical. What mattered to me was whether the speaker constructed a logical argument that I could follow. When logic broke down or was explicitly subverted, I became annoyed. I suppose I like stories, explanations, anything to make sense of what is going on out there. And those kinds of explanations are not limited, I think, to the world of "natural objects". In fact, my favorite talk of all was Herbert Molderings' attempt to explain why Marcel Duchamp created his "ready-made" sculptures – that was a tightly reasoned argument about a fascinating subject. I wish there had been more of those – perhaps then the discussions would have been more argumentative as well. As it was, too many discussion periods felt like a diversity of monologues. Perhaps I am too critical – I know I am less patient than I want to be.

Did my interactions with the Wiko's social scientists, artists and philosophers influence my "life and work"? Not very much – at least as far as I can tell right now – and certainly less than the degree to which I was influenced by fellow biologists. However, I did not seek interdisciplinary interactions because, as I stated above, I explicitly wanted to think in peace, to stew in my own juices as it were. And I was not alone in that – as Reinhart Meyer-Kalkus once said, ours seemed to be "the year of the book". We had no epic struggles between disciplines (except for a recurring debate about "metaphors in science" that I considered silly soon after it began). Nor did I participate in, or take notice of, long evenings of intense multilateral debate. Perhaps I missed it all! In any case, I did keep my ears open and probably absorbed more than I think. Furthermore, I suspect that what I learned from (and about) the non-biologists will influence me "down the road" and in spheres beyond "just work". For example, I am pleased to report that I began to think about philosophy again, learned something about how historians work, and glimpsed how Isabel Mundry composes her music. I also received my first exposure to Muslim perspectives on the world,

a particularly useful experience during this trying time of avoidable war in Iraq. All of these influences, combined with the new social ties that formed, must have changed my life in ways that I cannot yet foretell. As Wolf Lepenies once said (if I recall correctly): the Wiko's influence on a Fellow is probably best measured ten years after the fellowship year ends. I suspect he's right – and I shall be happy to fill out any future questionnaires.

Thus, in most respects the Wiko was really wonderful. Despite my misgivings about the colloquia, I would not change them much (I would limit discussants to one question per turn, but that would be utopian). There is, however, one serious suggestion I want to make. After receiving, as Fellow-speaker, numerous questions from other Fellows and their families, I realized that most of these could have been avoided, or cleared up quickly, if the communication between staff and fellowship (including partners) had been more effective. Therefore, I recommended that selective staff members meet with the Fellow-speaker(s) and other interested parties at regular intervals (e.g. monthly) and from the beginning of the year. That way issues can be discussed before they become “complaints”. In general, we Fellows are so grateful to the Wiko for its offerings that we dare not ask questions that might be perceived as critical. Such behavior can create tensions down the road and, as a chronically tense Californian, I feel obliged to speak out against tensions of any kind. Moreover, I found most of the staff to be quite receptive to the idea of regular contacts: they did meet with us, communication improved, and helpful changes were implemented. Thus, I write these words not to “complain again” but to encourage any future Fellows (should they be reading this) to reach out to the staff, either directly or through the Fellow-speaker(s), early on in the year. The Wiko is a magnificent institution but it must remain responsive to a changing world, and the Fellows and, increasingly, their families are an integral part of that dynamic.

Finally, a word about spending a year in the Grunewald with family. I was actually born in Berlin but left when I was 3 (not that I had a choice!) and have lived in the US for the last 25 years (I'm 41 now, you do the math ...). It was interesting, therefore, to get to know Berlin and Germany again. I loved getting *Brötchen* in the morning and (occasionally) drinking good beer in Berlin's many gardens or sidewalk cafes; I hated all the dog poop on the street and the cranky old ladies on the bus. In other words, it was an interesting time, with many pros and some noteworthy cons. But that's okay – I wouldn't want all countries and cultures to be “the same”. I am eager now to return to California because I miss my house, my friends, my car, my kitchen sink (it's amazing what you start to miss after a year!), but I think it won't be long until I feel the urge to travel again. Would my

family come along as well? I don't know. It wasn't easy for them here – a year in an apartment with someone else's furniture is difficult when you are used to your own house; and a winter in Berlin is no picnic when you're from Southern California. However, they, too, had many good times. For the first time in years, Anna (my wife) didn't work and thus found time to read, explore Berlin, travel, and socialize intensively with family and some new friends. Ian (my now 9-year-old son) also found excellent new friends and learned German like a champ. As I said, we're ready to go home, but I know we'll be looking back fondly soon. Already, I miss some of my new friends and we haven't even parted yet. Being at the Wiko was a powerful once-in-a-lifetime experience, and I shall always treasure it for that. Go, Wiko, carry on!



IN HERACLEITOS' FOOTSTEPS EÖRS SZATHMÁRY

Born in 1959 in Budapest, Hungary. 1987 Ph.D., Faculty of Science, Eötvös Loránd University, Budapest. 1987–94 Research Fellow of the Hungarian Academy of Sciences, Eötvös Loránd University, Budapest. 1991/92 Research Fellow, Laboratory of Mathematical Biology, MRC National Institute for Medical Research, London. 1992/93 Fellow at the Wissenschaftskolleg zu Berlin. 1994 Guest Professor, Institute of Zoology, University of Zurich. 1994/95 Senior Fellow, Collegium Budapest. 1995– Permanent Fellow, Collegium Budapest. 1995– Professor, Department of Plant Taxonomy and Ecology, Eötvös Loránd University, Budapest. Publications: *The Origins of Life: from the Birth of Life to the Origin of Language*, with John Maynard Smith. Oxford and New York, 2000. *The Major Transitions in Evolution*. Oxford and New York, 1997. – Address: Collegium Budapest, Szentháromság utca 2, 1014 Budapest, Hungary.

It was over ten years ago that I left the Wissenschaftskolleg after an incredibly pleasant and productive year. It felt like being expelled from Paradise. I have followed my scientific and personal *Tao* in other places, such as Collegium Budapest, which is also an Institute for Advanced Study (incidentally, it would not exist without the dedication of Wolf Lepenies and Joachim Nettelbeck).

This year I have had the privilege to be a Guest of the Rector and to return to Paradise. Did I step in the same river twice? Yes and no. Yes, because once again I enjoyed that well-oiled machinery of a thinktank for intellectuals, partly run by the very same people who helped us a decade ago. Yes, because I was working on some questions of theoretical biology, taking advantage of the excellent library service. No, because several things have

changed at the Wiko, and presumably I have changed even more. Ten years ago I was still a bit of a beginner; now I am a resigned head of a department, to mention but one thing (those years count twice). No, because ten years ago there was only one real theoretical biologist beside me (Peter Hammerstein, now President of the Fellow Club); now the Wiko teams with excellent biologists.

Although I was distracted by a number of external events (including a Dahlem Conference and the board meeting of the Society in Science Foundation in Zurich) I was able to accomplish what I had planned. First and foremost, I have completed a paper for *Nature Reviews Genetics* on the question why we have four letters in the genetic alphabet (this was the topic of my rather dense seminar, too). The comments by the biologists after my seminar were invaluable to this end. I began working on a model of Gaia, i.e., a mechanism for planetary homeostasis, inspired by the Dahlem meeting that I attended on Earth Sustainability. It may just be possible to find a mechanism whereby selection on local interactions may favor planetary sustainability in the long run.

I have given lectures at a Dahlem Conference, at the University of Bochum, and a seminar to students at the Innovationskolleg Theoretische Biologie at the Humboldt University. I had a special appearance at the Potsdam Institute for Climate Impact Research, giving a kind of public lecture about the origin of language. As a host, I also enjoyed the visit of Professor von Kiedrowski from Bochum, who gave an exciting *ad hoc* seminar on replicable nanostructures.

As a late-arriving short-term guest, your social dynamics are very different from those of the core Fellows: I chose to interact with a few people so that I could accomplish what I planned. I have tremendously enjoyed discussions with some of the biologists and with John Hyman. Meeting some of my fellow colleagues from the year 2002–2003 on the occasion of the *Altfellow-Treffen* was a special delight.

Let me finally mention one other type of activity as a sign of our time. I participated in a proposal for an integrated project (research carried out by an international consortium of people and institutes) within the Sixth Framework Programme of the EU. Incidentally, another guest of the Rector, Stefano Nolfi, was also a key member in this preparation. This took a fair bit of time to get straight, including a “hearing” in Brussels. I am happy to report that the proposal has been accepted with flying marks and serious work can start in November, using evolutionary robotics to explore the conditions for the origin of various forms of communication.

All in all, I am glad to be one of the mortals to have had a chance to return to the Wiko.



BERLIN, AGAIN, FOR THE FIRST TIME KATHLEEN THELEN

Born in 1956 in South Dakota, USA. Education: M.A. (1981) and Ph.D. (1987), Political Science, University of California, Berkeley. Teaching: Associate Professor, Department of Political Science, Northwestern University, 1994– present. Assistant Professor, Department of Politics, Princeton University, 1988–94. Assistant Professor, Department of Government, Oberlin College, 1987–88. Fields: Comparative Politics, West European Politics, Political Economy of the Advanced Industrial Democracies, Labor Politics. Publications: *How Institutions Evolve: The Political Economy of Skills in Germany, Britain, the United States, and Japan*. Cambridge, 2004. “The Paradox of Globalization: Labor Relations in Germany and Beyond”, with Christa van Wijnbergen. *Comparative Political Studies* 36, 8 (2003). “The Political Economy of Business and Labor in the Developed Democracies.” In *Political Science: The State of the Discipline*, edited by Ira Katznelson and Helen Milner. New York and Washington DC, 2002. “Historical Institutionalism in Comparative Politics.” *Annual Review of Political Science* 2 (1999). – Address: Department of Political Science, Northwestern University, Scott Hall, 601 University Place, Evanston, IL 60208, USA.

I understand that it is not uncommon for Fellows to come to the Wissenschaftskolleg with plans to write one book but then to wind up writing a different one. My experience may be a bit different in that I came to Berlin and wound up writing a different book from the one that I had just finished – or so I had thought. I arrived in Berlin in the summer of 2002 with a manuscript fairly close to done, eager to clean it up, ship it off, and move on to the project that I had actually intended for my year here. The manuscript with which I arrived was a book that analyzed political-economic institutions in four countries – Germany, the

United Kingdom, Japan, and the United States. The core question concerned the origins of some striking and very consequential differences across these countries in the institutional arrangements governing vocational training in general and firm-based apprenticeship in particular.

The book was organized around an examination of the genesis of these differences, asking the question “why did these countries pursue such different trajectories in terms of skill formation?” This I had already mostly figured out, having traced the sources of these differences in contemporary political-economic institutions back to the nineteenth century, in particular to the character of the political settlement and coalitions among three key groups – employers in skill-intensive industries, traditional artisans, and early trade unions. I was able to show how the development of skill formation in the early industrial period interacted with the development of collective bargaining institutions and nascent labor unions and employer organizations in ways that set countries on different national trajectories from very early on. The analysis of the four cases thus focused mostly on the early industrial period and in each case ended in the 1920s, by which time the contours of the systems that ultimately emerged were already present and quite well defined.

I did not ship the book off, however. Instead, and partly as a consequence of conversations with the historians and biologists at the Wissenschaftskolleg, I became increasingly intrigued with the related but somewhat different question of how institutional arrangements such as this, that are forged in the rather distant past, actually *make it* to the present – not an idle question, given the massive transformation of the political and economic landscapes in all four of my countries during the twentieth century. Leaving the other three country-cases to the side, I set about to track the evolution of German training institutions over a longer time frame, from the 1870s to the present. This aspect of the study was organized around a somewhat different but, I thought and think, even more compelling puzzle. In the literature on contemporary labor politics, Germany’s vocational training system has traditionally been seen as a crucial institutional support for the country’s high-skill, high-wage, high-value-added manufacturing economy. As such, the vocational training system has been viewed as a key element in a larger institutional complex that actively supported a production regime organized around a kind of “diversified quality production” that reconciled Germany’s comparatively strong unions with strong performance in world manufacturing markets. However, as the historical analysis of the genesis of the system had shown, the core institutional innovation around which the German system came to be built (in 1897) was inspired by deeply reactionary motives and was mostly designed

to weaken (definitely not strengthen and incorporate) the then-surfing organized labor movement.

The question I asked was “how did we get from there to here?”, and answering that question brought me deeper into a set of extremely fruitful conversations with colleagues at the Wissenschaftskolleg this year. The dominant perspective on institutional change in political science is based on a strong “punctuated equilibrium” model – derived from the work of evolutionary biologists and interpreted for politics by a former Wiko Fellow, Stephen Krasner – that draws a rather sharp line between long periods of institutional “stasis” periodically interrupted by historic “break points” (“critical junctures” in the lingo) marked by radical institutional innovation. However, in the case of German vocational training institutions, I found that institutional arrangements often turn out to be incredibly resilient in the face of huge exogenous shocks of the sort that we might well expect to disrupt previous patterns and prompt dramatic institutional innovation. Germany did not lack for “break points” in the twentieth century – having, after all, experienced several regime changes including into and out of fascism, defeat in two world wars, and foreign occupation. But contrary to models of institutional development that lead us to expect big changes in the context of big historic breaks, what was more striking was the significant continuities in the system through these through historically deeply “unsettled” times.

However, it was not as if nothing had changed; indeed, as indicated above, this is a system that over the past century has evolved from a set of innovations designed mostly to weaken labor into what is today considered a pillar of social partnership between labor and capital. The analytic task, therefore, was to make sense of the incredible stability of some elements of the system through a series of rather major historic breaks, while also, however, capturing the subtle incremental changes that, in political and especially power-distributional terms, had over time turned the system completely on its head. Taking a snapshot of the system in 1897 and 1997, I was confronted with a set of institutions that, in the words of another former Wiko Fellow, Peter Katzenstein (he was referring to his now-grown children), were “completely different ... and exactly the same”.

In making sense of these developments and in defining my own position with respect to existing models of change, I profited immensely from discussions with other Fellows at the Wissenschaftskolleg this year. My project benefited most directly from frequent and very fruitful conversations with resident economic historian Hartmut Berghoff, who helped me navigate the extremely chaotic politics of the Nazi period and who did much more than his fair share in reading and commenting on chapters of my manuscript. Beyond Hartmut

and beyond the Wissenschaftskolleg, I also profited from stimulating interactions with historians at the Wissenschaftszentrum Berlin für Sozialforschung, including especially Gerald Feldman (visiting this year in a most fortuitous coincidence), Hartmut Kaelble, and Jürgen Kocka.

I also had extremely interesting exchanges with the biologists and zoologists in residence at the Wissenschaftskolleg this year, especially but not only Tecumseh Fitch, David Raubenheimer, Steve Simpson, and Georg Striedter. Straight away, I got an earful from Miguel Rodríguez-Gironés about how the original “punctuated equilibrium” model was received among biologists generally and this spurred me on to think more carefully about how the concept had come to be deployed in my own field. In general, the more informal the conversation, the more productive and fruitful it proved to me, though the more formal session that Raghavendra Gadagkar and I organized between social scientists and biologists did bring in its wake a whole new round of conversations in which, among other things, Tecumseh reminded me of the difference (long forgotten after my high school biology class) between mitosis and meiosis – and managed to relate this to the concepts I was developing to describe different modes of institutional reproduction and change in politics –, and in which Georg Striedter and I exchanged notes on unexpected parallels between concepts that he was employing in his book on brain evolution and that I was developing to explain the development of political-economic institutions.

As a result of all these stimulating exchanges, my book became bigger, certainly in one sense, and I hope in the other sense as well. Through all of this the Wiko library and its phenomenal staff offered invaluable assistance, for which I am deeply grateful. There seems to be no end to their resourcefulness, efficiency, and patience in the face of a relentless stream of requests for books and information. Kevin McAleer provided much-appreciated support and reassurance on translations of obscure passages from obscure German archival sources. Susi Laqueur, whose unending warmth radiated throughout the Wissenschaftskolleg this year, seemed as pleased as I when I sent the book for review in April, and it is with a real sense of satisfaction (and closure) that I now leave Berlin with the book complete and forthcoming at Cambridge University Press.

Other projects did not languish completely. Moving to Berlin put me smack in the middle of my field of research, and so I was able to gather many of the materials needed for this year’s intended project on the impact of globalization on contemporary labor politics, even if a good bit of the writing remains to be done. Work on this project was supported by a workshop that I convened and that the Wissenschaftskolleg hosted (in November) on

the impact of globalization on welfare state and labor relations institutions in Germany and Japan. This project also profited from numerous conversations, some around a seminar table, more around the lunch tables, with Fellows whose interests and work dealt with related issues and problems, including especially Walter Mattli, Cornelia Vismann, Steve Vertovec, Rainer Schmalz-Brunns and Grażyna Skapska. I am grateful to Reinhart Meyer-Kalkus, Christine von Arnim, and the entire Wiko staff for their professionalism and warmth, and through the year I marveled at the understated leadership exercised by Joachim Nettelbeck and Dieter Grimm to the immense benefit of all of us Fellows.

For many Fellows, living in Berlin means being mostly disconnected (in a very good way) from their usual scholarly networks and obligations. That was true for me as well, but being in Germany also landed me in the middle of a different set of longstanding networks with which I was only too glad to be reconnected. One of the joys of this year was being able to work more closely with colleagues at the Max-Planck-Institut für Gesellschaftsforschung in Cologne. Together with the institute's director (another former Fellow), Wolfgang Streeck, I convened a conference in December on institutional changes in contemporary welfare states, and since that time we have been working on a jointly edited volume that is also now nearly complete as my time in Berlin ends. I have also thoroughly enjoyed renewing contact this year with the Wissenschaftszentrum Berlin für Sozialforschung, another important institutional and intellectual home for me here in Germany, where I had spent the 1990/91 academic year as well as a couple of very productive and enjoyable summers since then.

And finally, on a more personal note, living in Grunewald with my family gave Berlin a whole new look for me. Sometimes with my heart in my throat, but mostly with great joy and pride I watched my children, Andy (13) and Amelia (9), find their way in a country that, after many years and many return visits, I have come to feel somehow at home in. I had tremendous fun reviving my rusty German with Eva von Kügelgen, and Gerd Riedel's technical assistance (and wry humor) pulled us all through numerous *Pannen* in good shape. The famous Wiko kitchen lived up to its culinary billing, and Christine Klöhn and Katarzyna Speder showered kindness both on us Fellows and on the hordes of children we brought with us. It has been a year that combined intellectual stimulation with collegiality and friendship in a most wonderful mix, and a year much enriched by the presence of those that the Fellows brought with them – Anke Berghoff, Balthasar Hausmann, and Leslie Simpson, among many others – not to mention all those kids who knitted together a most unique and memorable community at the Villa Walther.



FAMILIAR DISTANCES AND UNEXPECTED
PROXIMITIES
BALÁZS TRENCSENYI

Born in 1973. Currently, I am finishing my Ph.D. dissertation in Comparative History at the Central European University, Budapest. I studied Philosophy and History at the Eötvös Loránd University, Budapest (1991–97). M.A. in Nationalism Studies at the Central European University (1998). Research student at the University of Cambridge, King's College (1999–2000). I was a founding member of the international research group “Regional Identity Discourses in Central and Southeast Europe (1775–1945)”, editing a three-volume collection of texts thematizing collective identity (forthcoming in 2004). I was an Associate Fellow of the NEXUS Project at the Centre for Advanced Study, Sofia, 2001–02; a guest scholar at the Geisteswissenschaftliches Zentrum Geschichte und Kultur Ostmitteleuropas, Leipzig, 2002, and a Junior Visiting Fellow at the Institute for Human Sciences, Vienna, 2002. I published articles on East-Central European history of political ideas, comparative historiography, and methodology of history writing and co-edited two volumes: Balázs Trencsényi, Dragos Petrescu, Cristina Petrescu, Constantin Iordachi, and Zoltán Kántor, eds. *Nation-Building and Contested Identities: Romanian and Hungarian Case Studies*. Budapest, 2001. András Czeglédi, Zsolt Novák, Dénes Schreiner, Balázs Trencsényi, eds. *Ész, természet, történelem* (Reason, Nature and History). Budapest, 2002. – Address: Central European University, Department of History, Nádor u. 11, Budapest, 1051 Hungary. E-mail: nphtre14@phd.ceu.hu.

During the three months I spent at Wiko as a Mellon Fellow, I have been working on a project concerning Central and Southeast European discourses of “national characterology”, concentrating mainly on the Romanian, Hungarian, and Bulgarian cases. Eastern

European historiographical traditions usually thematize the evolution of social and political ideas in view of a *discursive autarchy*. This “monadic” perception of a given national tradition can be effectively challenged by introducing alternative models based on comparative research. Studying the generational dynamics or the simultaneous processes of internalizing the same set of “European ideas” makes one aware of the fact that the cross-cultural patterns of similarity might be more important than usually thought, while the discursive discontinuities between different generations and “subcultures” within the same “national” canon might be more significant than usually admitted.

Although the “European” ingredients were almost identical, the respective national canons gave highly divergent responses to the challenges of the inter-war political and cultural crisis. While, in Romania, the anti-historicist modality of characterology became preponderant by the 1930s and engendered a project of national metaphysics; in Hungary, the nationalist idiom was much more embedded in the traditionalist discourse of a normative past, so the issue of national character became the battleground of the two – historicist and anti-historicist – visions. At the same time, in Bulgaria, where the historicist discourse was less integrated in the tradition of characterology, focusing on the “ahistoric” peasantry, collective identity came to be thematized in view of symbolic geography and national psychology. Using the excellent research opportunities provided by the Kolleg, I tried to contextualize my findings from the broader perspective of European intellectual developments of the period, paying particular attention to such phenomena as the “Konservative Revolution” in the German context (which has parallels in many other European cultures), the emergence of “generational ideologies” in the twenties, the “Historismus-Debatte”, and the corresponding French intellectual trends, seeking to reconsider the symbolic basis of collective existence.

Even though it concerns a rather different time frame, my other project that I tried to complete at Wiko has many traits in common with my research on the “national characterologies”. I also worked on the European context of my CEU dissertation research. This project seeks to reconstruct the modalities of “Hungarian discourse of nationhood” in the sixteenth- to seventeenth-century European context of political ideologies. I seek to devise a broader framework of interpretation (transgressing the customary framework of Hungarian historiography), locating these phenomena on the European “map” of the history of political ideas and describing the Hungarian discourses of nationhood in terms of the interplay of the humanist vision of *patria*, the conception of “elect nationhood”, and the

emerging ideology of “territorial statehood” rooted in the pragmatist political prudence of the “ragion di stato” tradition.

One of the most important common traits of these two projects is the concern with the “temporal implications” of political rhetoric: how a discursive tradition frames its temporal horizons and how, in turn, these horizons frame the tradition – locating the collective self in normative historical models. The “external” aspects of the “temporality” of political discourses is equally important – studying the different rhythms of reception, reflecting on the question of how certain traditions can be meaningfully compared and what is possible at all to compare, when we face different cultural canons.

The spontaneously emerging study-group at Wiko, focusing on historiographical cultures, was an ideal context for thinking about some of the fundamental questions of my research and devising a meta-language through which the peculiarities of the individual cases and the broader common traits could become equally tangible. The workshops and the long discussions at lunches and dinners with Hilda Sabato, Abdelahad Sebti, Carlo Severi, and Abdul Sheriff provided a natural context for my projects, creating a splendid possibility for testing my East-Central European sense of relevance on other cases and learning a lot about radically different cultural dynamisms, which are ultimately grappling with the same questions of the “imported” nature of modernity, the urge for the rethematization of collective memory, radical formulations of collective identity, and conflicts over the interpretation of the near – and not so near – past.

While, usually, I am asked to compare my Hungarian, Romanian, Bulgarian, etc. intellectual contexts mostly with Western European, or other East-Central-European traditions, now I was challenged to put my sources into a broader framework, bringing Hungary or Romania together with such different cases as Argentina, Italy, Tanzania, or Morocco. This entailed having to generalize, but seeking to avoid stereotyping (which would have meant either blurring the dividing lines and fusing every case into the diffuse category of the “third world” or contrasting my contexts to my colleagues’ accentuated “otherness” from the West, defining my own contexts simply as “Western”), and asserting divergences without falling into the trap of the narcissism of small differences. As it turned out, exactly the impossibility of finding an incontestable common denominator and having to test relative distances and proximities was the chief result of our endeavor – realizing that every new “story” made us rethink the relative position of our own culture on the symbolic map of “developed” and “underdeveloped”, “central” and “peripheral”, “Western” and “non-Western”, “Northern” and “Southern”, etc., cultures.

In contrast, the Tuesday Colloquia usually left me with the dubious self-confidence of total ignorance, which made it even easier to be carried away only by the sheer “aesthetics” and rhetorical bravado of the lectures by Raghavendra Gadagkar, Tecumseh Fitch, Eörs Szathmáry, Herbert Molderings, or Eric Brian, just to mention the most memorable ones I had the good fortune to attend.

In addition, I also had an opportunity to get to know some of the prominent German scholars dealing with the questions central to my research, i.e., identity formation and early-modern political discourses. This was due to the kindness of Andreas Edel, who was not only an attentive “institutional host”, but also shared with me many of his fascinating insights about early-modern intellectual history, the intricacies of German academia, and, last but not least, the beauties of Potsdam and the arcanum of *Spargel*-eating.

As for my more mundane activities, I have been trying to keep my form in two sports. I think I can be proud of my achievements in the field of long-distance photocopying (running both in “male single”, and, with my girlfriend, Oksana, in “mixed” competitions). I will never forget either the benevolent complicity expressed by some of my fellow Eastern Europeans (Victor Stoichiță, who was doubtlessly the most encouraging fan of my efforts, and also Péter Nádas) or the equally benevolent puzzlement of Westerners, who seemed to infer that I misunderstood something, believing that xeroxing will be introduced at the forthcoming Olympic Games, and I was hoping to earn a gold medal for my long-suffering nation after Imre Kertész secured the Literary Nobel Prize.

The craze of copying (apart from the still rather uneven library situation in my region – we have the very old and the very new books, but it can be sometimes a nightmare to find a “Western” book published, say, in 1984) was also due to the equally breathtaking quickness and accuracy of the library service at the Kolleg – sometimes I had the feeling that I had just dreamt of the book and it already came the very next morning. This illusion was dissolved only at the very end of my stay, when the ever-patient librarians showed me the remaining dozens of *Zetteln* that I dropped at some point into their box, but which they could not read due to my ecstatic handwriting.

The other sporting activity was table tennis, the table being too conveniently located on the way from the Cafeteria to my room. We were playing – even if not on Olympic level, but with a heroic commitment – almost every day with Georg Striedter, and eventually we both came to regret that Irvine and Budapest are not close enough so that we could just drop by each other’s places for another match after we leave the Kolleg.

All in all, my time in Berlin was a splendid opportunity to reflect on some of the central issues of my research, both in professional and in personal terms. Studying discourses of identity is chiefly about how assumed distances and proximities shape the self, and thus the constant shift of perspectives I was exposed to when facing the plurality of life-stories, cultural intimacies, and scientific approaches represented by the Fellows at Wiko meant a formative experience.

My research topics are related to the ambivalent interaction of the representatives of Eastern European cultural elites with “the West”. Both the Hungarian students, accomplishing their year of *Peregrinatio* in Wittenberg, Heidelberg, or Franeker in the 16th–17th centuries, and the young intellectuals traveling (physically and mentally) from their native land to Berlin, Paris, or London in the first half of the 20th century, had a complex experience of “fundamental” differences, even though they were not completely alien to the intellectual paradigms they came to study. This coexistence of familiarity and otherness resulted in highly ambivalent attitudes, which can be described as “mimetic” and “stigmatic”. These attitudes entailed the urge to take home everything wholesale and the frustration rooted in the feeling of incomparability, leading to the rejection of “Western models” under the aegis of autochthonist projects.

The Hungarian predicament of the 21st century is likely to be exactly the “normalization” of this relationship. This can result in a less interesting option – a culture not remaining exotic enough, but not quite becoming “Western” either. There is a more promising scenario as well: being “Western”, but also offering a symbolic, spiritual, and even infrastructural gateway – mediating between pasts and futures, Easts and Wests, different sensitivities and senses of relevance.

The task of the generation reaching maturity during the post-1989 transition years and the EU enlargement process might well be to renegotiate these symbolic frameworks of identification and otherness – i.e., relocating our culture and stepping out of the traumatic constructions of identity. Of course, three months in the Arcadia of Wallotstraße is not quite enough (maybe even 3 years would not be enough) to reflect upon all the complexities of this predicament – it requires, at any rate, the simultaneous efforts of many scholars, artists, teachers, and politicians. But, one way or another, we all have to contribute to this process with our own means, otherwise the structures of stigmatic identification and rejection might well resurface, albeit in new garments.

With my modest means, I plan to pursue such a mediating role between perspectives in the context of my home institution, the Central European University, which was created

exactly to “renegotiate” this regional heritage in view of the post-communist world order. I am sure that the experiences I gathered in Wiko will help me enormously in this: the new friends, ideas, notes, references, books, and photocopies; the familiar distances and unexpected proximities will all remain with me and will be important reference points in the future for locating my own self, and maybe also for raising relevant questions about the collective identity discourses that permeate, for good or for bad, the cultures of Eastern Europe.



ENTANGLEMENTS STEVEN VERTOVEC

Steven Vertovec was born in Chicago in 1957 and educated at the University of Colorado (B.A. 1979), University of California – Santa Barbara (M.A. 1982), and University of Oxford (D.Phil. 1989). Currently he is Professor of Transnational Anthropology at the University of Oxford and Director of the British Economic and Social Research Council's Center for Migration, Policy and Society (see www.compas.ox.ac.uk). He is the author of *Hindu Trinidad*. Macmillan, 1992 and *The Hindu Diaspora*. Routledge, 2000 and editor or co-editor of several books including *The Urban Context*. Berg, 1995. *Islam in Europe*. Macmillan, 1997. *Migration and Social Cohesion*. Elgar, 1999. *Migration, Diasporas and Transnationalism*. Elgar, 1999. *Staat – Schule – Ethnizität*. Waxmann, 2002 and *Conceiving Cosmopolitanism*. Oxford University Press, 2002. His interests include migration, religious minorities, multiculturalism, and transnationalism. – Address: Social and Cultural Anthropology, University of Oxford, 51 Banbury Road, Oxford, OX2 6PE, United Kingdom.

“Entanglement” seems to be the condition best describing my year’s experience at the Wissenschaftskolleg. I think of “entanglement” in two ways. One meaning is “deeply involved and networked” in a variety of intellectual activities, academic projects, social relationships, and new friendships; these forms of entanglement were highly invigorating. The other meaning for me is “ensnared in sticky cobwebs” of work and responsibility – especially outside of Berlin and back at Oxford; these forms of entanglement were mostly frustrating. In positive and negative ways, therefore, these entanglements meant that my sabbatical year was not, of course, how I dreamed it might be. Instead of being filled with long hours with my feet on the desk, gazing out the window thinking or actually getting to read

new books, it often felt like a time of frantic juggling and keeping several balls in the air at once.

My proposed agenda at Wiko was to spend a year variously wrapping up a British national research programme that I directed for the Economic and Social Research Council (ESRC) over the previous five years (the research programme on Transnational Communities; see www.transcomm.ox.ac.uk). This was achieved, I'm glad to say, mainly by writing a substantial final report for the Research Council as well as a comprehensive public report. I also managed to write a number of academic articles drawing on the ESRC programme, including a major piece presented at a conference in Princeton (see below). At the same time as bringing that programme to a close, I have been involved in setting up a new migration research centre at Oxford, also to be funded over the next ten years by the ESRC. This has entailed writing various launch materials, as well as making staff appointments, working with administrators on contract and budget issues, negotiating with designers and architects, and mundane (but admittedly fun) stuff like choosing office furniture and computer systems. Responsibilities around the Programme wrap-up and Centre creation meant that I had to make several trips back to Oxford (at least allowing me fleetingly to see friends and buy favourite foods for the family!). In these ways, the Wiko fellowship provided an extremely valuable time and space to both end and to begin some large-scale academic enterprises.

Other professional entanglements included: ongoing doctoral supervisions (admittedly my heart sank every time one of my students sent an e-mail with a large attachment), project networks (including proposal development for the European "6th Framework" programme) and edited books (I managed to finish three of these during the year at Wiko: *Culture and Economy in the Indian Diaspora*, co-edited with Bhikhu Parekh and Gurharpal Singh, in press with Routledge; *Globalisation, Globalism, Environments and Environmentalism*, co-edited with Darrell Posey, in press with Oxford University Press; and *Civil Enculturation*, co-edited with Werner Schiffauer, Gerd Baumann and Riva Kastoryano, in press with Berghahn). Also, meetings, seminars, and lectures around Germany and elsewhere connected me with old and new colleagues. In all, throughout the year, although I felt productive, I continuously felt very hurried. My own fault of course: I should have been more rigorous in minimizing academic entanglements before coming to Berlin.

For me, during the year perhaps the most satisfactory academic work surrounded a comprehensive paper commissioned by the American Social Science Research Council (SSRC) and the *International Migration Review (IMR)*. As part of a state-of-the-art

conference on migration studies at Princeton University in May 2003, I was asked to prepare a piece on transnationalism and migration (that is, on the various ways migrants maintain social, economic, and political connections with their places of origin). This paper provided the ideal opportunity to draw together many of the findings of the Transnational Communities Programme and to reflect on them in theoretical and methodological perspective. The tremendous library services of Wiko were of great use in developing this work as well. By way of helping me to sharpen my contribution, in February 2003 the Wissenschaftskolleg and the Otto and Martha Fischbeck Foundation very kindly organized for me a seminar of colleagues from Germany, Denmark, Britain, and Spain. Over one and a half days, these colleagues provided invaluable criticism and advice solely on my paper. It was a stimulating and very rewarding event – and one for which I am ever grateful. Subsequently my paper was well received at the Princeton conference, and a revised version will appear in a forthcoming special issue of *IMR* (other material from the original, very long piece will be published in the journal *Global Networks* and elsewhere).

The intellectual stimulation facilitated by the Wiko colloquia, meals, and other occasions has meant a lot to me – a kind of conceptual or mental entanglement that was enriching. This was especially the case with regard to ideas surrounding evolution, which came up in various forms. Such ideas, terms, and approaches that I was exposed to have caused me to think differently about much of my own material concerning forms of social and political change.

While the academic entanglements were rather taxing, social entanglements throughout the year were wholly revitalizing. For my family and me, these largely centred on life at Villa Walther. The large number of children this year at Wiko meant that the Villa became a giant *Wohngemeinschaft*, with friends and children feeling very comfortable in each others' apartments and the garden and on the terrace. It was surprising and pleasing to observe the ways, over the course of the year, all of our uprooted kids crossed linguistic and cultural borders, became a common gang, running around and playing together in a place that importantly provided some sense of home-away-from-home.

Echoing the feelings of my wife and me, our two children have voiced strong sentiments. They express very mixed emotions about having to leave Wiko and Berlin: happy to go back to the place where they feel most attached, but sad to leave the place they've happily experienced.



KURZE CHRONIK ZUR UNZEIT CORNELIA VISMANN

Geboren wurde ich am 26. Mai 1961 in Hankensbüttel (Niedersachsen). Nach dem Studium der Rechtswissenschaft und der Philosophie in Freiburg, Hamburg und Berlin wurde ich 1990 Rechtsanwältin in einer Kanzlei im Ostteil Berlins mit Schwerpunkt Arbeitsrecht, nahm als wissenschaftliche Mitarbeiterin teil an der Gründung des Einstein Forums in Potsdam und ging dann, 1993, an die Europa-Universität Viadrina in Frankfurt (Oder), zuerst in die kulturwissenschaftliche Fakultät und dann in die juristische. 2001 wechselte ich an das Max-Planck-Institut für europäische Rechtsgeschichte in Frankfurt/Main. Veröffentlichungen u. a.: *Akten: Medientechnik und Recht*. Frankfurt/Main, 2001. *Vom Griechenland*, mit Friedrich Kittler. Berlin, 2002. *Widerstände der Systemtheorie: Kulturtheoretische Überlegungen zum Werk von Niklas Luhmann*, mit Albrecht Koschorke. Berlin, 1999. – Adresse: Max-Planck-Institut für Europäische Rechtsgeschichte, Hausener Weg 120, 60489 Frankfurt/Main.

In Verzug

Ein Tatenbericht wird dies nicht gerade. Berichten kann ich allein von dem, was ich schrieb, las und hörte in diesem Jahr im Grunewald. Was mir auch widerfuhr, es geschah zur Unzeit. Gleich zu Beginn lag ich mit der Zeit im Streit. Der Widerstreit begann mit der Aussicht auf zehn Monate geschenkter Zeit, die bekanntlich auch bedeuten: ein Geschenk auf Zeit. Weil kein Tag davon verloren gehen sollte, wollte die Frist von zehn Monaten gut verwaltet sein. Die Planerin in mir setzte also ein strenges Zeitreglement. Morgens: Überarbeitung der Habilitation; die Nachmittage sollten dem Lesen vorbehalten

sein. Das unbekannte Gebiet antiker Rechtsvorstellungen wollte ich lesend einnehmen. Doch durchkreuzten schon diese harmlose Doppelstrategie im Umgang mit der flüchtigen Kostbarkeit irgendwelche Zeitdiebe, die mir – und nicht nur mir, wie ich später erfuhr – dicht auf den Fersen waren.

Der Einzug in die Weiße Villa gestaltete sich nicht in dem unschuldigen Weiß, den diese Adresse erwarten ließ. Ich zog mit rund vierhundert beschriebenen Blättern ein, aus denen besagte Habilitationsschrift hervorgezaubert werden sollte. Der Stapel Papier landete gleich am ersten Tag auf dem Schreibtisch, an dem schon so viele kluge Sätze verfasst worden waren, dass er seine neue Nutzerin immer etwas einschüchterte. Ohnehin standen die Zeichen eher auf Lesen als Schreiben. Verführerisch priesen sich die Lektüren der alten Griechen an. Man hatte mich – mit Bedacht, wie ich mir gern einbilden wollte – zwei Stockwerke über der Bibliothek von Loeks lateinischen und griechischen Klassikerausgaben platziert. Vollständig standen die feinen roten und grünen Bände von Ammianus Marcellinus bis Xenophon dort zur jederzeitigen Entnahme bereit. Von Entscheidungssammlungen der Gerichte oder aktuellen Gesetzeskommentaren war hingegen weit und breit keine Spur. Dass die virtuelle Bibliothek unter der Leitung von Gesine Bottomley, die der Sache schon namensgemäß auf den Grund geht (vgl. Peter Goodrich, „The Omen in Nomen.“ *Cardozo Law Review* 24 (2003): 1323 f.), ihre himmlischen Dienste anbot, die einer Berliner Bibliothekenbetroffenen nur noch himmlischer erschienen, tat ein Übriges, mich ganz und gar für griechische Lektüren einzunehmen.

Zu früh

Die ersten Tage im Kolleg verbrachte ich in ungewohnter Schläfrigkeit. Immer wieder musste ich mich zur Unzeit hinlegen. Mir blieb rätselhaft, was mich vormittags, gleich beim ersten Dienstagskolloquium, in einen so unwiderstehlichen Schlaf zog. Die Lesung des gerade gekürten Nobelpreisträgers war es sicher nicht. Abstrakt kannte ich damals den Grund schon. Gesine Hofinger, die es wissen musste, hatte irgendwann in einem Gespräch die Bemerkung fallen gelassen, dass Schwangere in den ersten Wochen stets müde seien. Dass dieser Grund auch auf mich zutraf, erfuhr ich kurze Zeit darauf. Die unverhoffte Nachricht brachte naturgemäß sämtliche bis dahin verabschiedeten Zeitpläne durcheinander. Zu den Fristen, gegen die ich anschrieb, kam also noch die seit Menschengedenken unverrückbare neunmonatige.

Die Nachricht nahm ich zwar nicht gerade mit Gelassenheit hin. Doch beruhigte mich die Umgebung, in die sie fiel: meine Grunewaldidylle im Turmzimmer der Bibliotheksvilla, die Unbill und Widrigkeiten von mir fernhielt. Zudem bereiteten mir die Powerpointpräsentationen der Evolutionswissenschaftler von da an ein höchst privates Vergnügen. Wunderschöne farbenprächtige Bilder von Embryonen verschiedener Tiergattungen oder von Wal- und Menschenbabyhirnen im Vergleich gaben mir einen Einblick in mein eigenes Inneres und das, was sich darin noch ereignen würde. Erfahrenen Müttern, von denen es am Kolleg mehr gab, als man vermuten konnte, blieb mein „gesegneter Umstand“, um den Theologen Reinhart Kratz zu zitieren, nicht lang verborgen. Frau Sanders nahm mir alsbald auch noch die Illusion, es könne sich dabei um eine Premiere handeln, die in die Annalen des Kollegs eingehen würde, so viele Babys waren auf dem Tisch der Rezeption schon gewickelt worden. Die reichhaltige Erfahrung in Sachen Fellowbabys sollte mir, wie sich zeigte, noch zugute kommen.

Mein Ringen um die Zeit zum Schreiben und Lesen trat mit dieser Nachricht in eine neue Phase. Das Duell zwischen Antike und Habilitation entschied – wie stets – der Dritte. Zu früh kam das erwartete Kind zur Welt. Meine Zeitzählung änderte sich von diesem Tag an. Sie orientierte sich – auch wenn die Vermischung von Krieg und Klinik mir nicht behagte – an den Kriegstagen, die die Frankfurter Allgemeine in einer täglichen Rubrik zum Irakkrieg durchzählte, minus sechs Tagen. Ein Tag um den anderen brachte uns ein Stück weiter aus der Gefahrenzone. Das Kolleg erwies sich, schon wegen der fachkundigen Hinweise der Biologen auf die Überlebensstrategien aus dem Tierreich und auch wegen der allgemeinen Anteilnahme und im Besonderen der Unterstützung von Christine von Arnim, als idealer Ort, diese Zeit der Sorge zu überstehen.

Im Takt

Das letzte Drittel im Kolleg, jetzt mit aus der Klinik entlassener Tochter, war das Drittel der Bilanzen. Meldungen über abgeschlossene Buchmanuskripte und Verlagsverträge häuften sich unter den Fellows. Auch meine Bilanz kann sich, wenn sie denn hier gezogen werden soll, sehen lassen. Die Habilitation geriet trotz bibliothekarischer Verführungen und dank der entschiedenen Intervention Reinhart Meyer-Kalkus', der sie aus dem titel- und gliederungslosen Stadium erlöste, in eine vorzeigbare Form. Die Arbeit beschreibt Auswirkungen des Internets auf die Verfassung. Kaum ein besserer Ort, um daran zu schreiben, ließe sich dafür denken als das unter der Ägide eines Verfassungsjuristen

stehende Kolleg. Immer wieder gab es dort Anlass, über die unabdingbaren Elemente der Verfassung zu streiten, die mit der – zweifellos gravierenden Änderungen unterworfenen – Staats-Souveränität auf dem Spiel stehen. Ist also die Verfassung ohne Staat ein Oxymoron oder einfach ein neues rechtliches Gebilde, das nach einer sprachlichen Fassung verlangt? Dies war eine der Fragen, die gleich zu Beginn des Jahres mit Rainer Schmalz-Brunns' Vortrag aufgeworfen war. Ich wäre geneigt, die Verfassung als Medium zu bestimmen: ein Medium, durch das die Medien des Rechts und der Rechtsunterworfenen hindurchgehen und in der sie reflektiert werden. Demnach wäre die Verfassung stets verbunden mit den Medien, in denen sie kommuniziert wird. Zugleich sind die Medien auch ein Gegenstand der Verfassung. Ausdrücklich erwähnt wird etwa das Rundfunkmedium im Grundgesetz. Mittelbar sind alle Medien darin angesprochen, da sie die Kanäle sind, in denen die Grundfreiheiten verwirklicht werden. Dieses Doppelverhältnis von Medium und Verfassung, einerseits der Medien als Regelungsgegenstand der Verfassung, andererseits der Verfassung als Medium, bringt es mit sich, dass das Internet nicht allein neue verfassungsrechtliche Probleme, wie etwa die viel diskutierten Zugangsrechte, aufwirft. Das Internet ändert auch die Verfassung selbst. Netzwerkkonstellationen treten an die Stelle des klassischen Dualismus von Staat und Individuum. Tragende medienbezogene Unterscheidungen des Grundgesetzes und seiner Interpretation, wie etwa die zwischen Öffentlichkeit und Privatheit, verblassen angesichts des Internetmediums, das alle vorangegangen Medien in sich einschließt. Die Verfassung selbst ändert ihre Stellung von einem Medium des Staats hin zu einem Medium der Nutzer, wie Grundrechtsträger unter den Prämissen des Internet wohl heißen müssten. Diese vom Internet ausgehenden Verschiebungen versucht die Habilitation zu beobachten.

Auch das zweite Projekt, das um die Rechtsvorstellungen der Antike kreist, hat in den vergangenen Monaten Kontur gewonnen. Unter den skeptischen Blicken von Leonid Zhmud und Reinhard Kratz drang ich lesend vor in eine nicht von Rom verstellte Welt, eine Welt vor der Ordnung der Signifikanten, kurz: eine Welt der Dinge, wie ich am Ende des Jahres in einem Vortrag am Kolleg noch angedeutet habe. In dem bekannten Ritual der Buphonien, in dem ein Ochse getötet wird, hatte das Element der Gerichtsverhandlung meine Aufmerksamkeit angezogen. Die ritualisierte Verhandlung endet mit dem Schulterspruch gegen das Messer, mit dem der Ochse getötet wurde. Das Messer bleibt übrig, weil es nicht, wie die anderen, die an der Ochsentötung beteiligt waren, eine Rede zur eigenen Verteidigung führen kann. Der stumme Rest der Verhandlung wird schuldig gesprochen. Mit unseren Vorstellungen von Kausalität und Schuld ist dieser Mythos schwer

vereinbar. Die Wirkmacht stummer Dinge, die etwa darin besteht, zum Thing oder Gericht zu versammeln, ist darin nicht erfasst. Viele solcher vernachlässigten Anfänge unserer Rechtskultur warten in den Materialien, die sich in den vergangenen Monaten angehäuft haben, auf ihre genauere Beschreibung. Und hoffentlich kommt eines Tages ein weiteres „Vom Griechenland“ dabei heraus.

Zu den beiden Projekten gesellte sich noch ein drittes. Unvermutet fügte sich aus einer Reihe von Vorarbeiten ein Buch über den Umgang des Rechts mit Bildern zusammen. Nicht zuletzt waren es Gespräche mit Victor Stoichiță, die den Grund dafür legten. Das Recht hat Bilder stets zu domestizieren gewusst, wenn es sie zu Beweiszwecken oder als Embleme souveräner Rechtsmacht einsetzt. Mit der Invasion von Kameras und Videos in den Gerichtssaal proliferieren diese Bilder. Weil sie ihrer eigenen Logik gehorchen und keiner Prozessordnung, verwildert der strenge Verfahrensablauf mit der Öffnung für Beweisvideos und Fernsehübertragungen von Prozessen. Eine Tribunalisierung des Verfahrens ist die Folge. Eines der Kennzeichen von Tribunalen im Unterschied zu regulären Gerichtsprozessen ist ihre größere Durchlässigkeit für Bilder: Bilder aus dem Gerichtssaal und im Gericht. Tribunale, wie das internationale Militärtribunal in Nürnberg oder das Army-Hearing gegen McCarthy in den fünfziger Jahren, setzen Bildmedien ohne Zögern ein, während sie in regulären Verfahren auf Zurückhaltung stoßen. Die Evidenz von Bildern, welche die Akte der Beweiswürdigung und des Urteilens unterlaufen, begründet die Medienschau des Gerichts, wie Argumente der Richter gegen Übertragungen aus der Verhandlung im Fernsehen bestätigen. Es deutet sich gleichwohl eine Tendenz zu einer Visualisierung innerhalb der Rechtsprechung an. Diese Tendenz war es, die meine Frage nach der Genealogie des Verhältnisses von Recht und Bildern angeregt hatte.

Schließlich soll Bartleby nicht vergessen werden. Dem ewigen Helden aller Schreiber wurde in diesem Fellowjahr, das mit dem fünfzigjährigen Jubiläum der Erstausgabe der gleichnamigen Erzählung zusammenfiel, ein Denkmal gesetzt. Das Vergnügen, aus diesem Anlass eine Quiz- und Filmvorführungsstunde mit Éric Brian vorzubereiten, verlangt geradezu nach Fortsetzung.

Nach anfänglicher Verspätung und zwischenzeitlicher anderweitiger Übereilung wäre ich also zum guten Schluss doch noch in den Takt von Lesen und Schreiben gekommen. Und mir scheint, der Dreitakt des Fellowjahres wäre eines auf Zeiteinteilungen spezialisierten Vico würdig, unter dessen Namen ich dank des Generierungsprinzips für Passwörte im Wiko ein Jahr lang elektronisch kommunizierte.



ORIGINS OF THE HISTORY OF SCIENCE

LEONID ZHMUD

Born in 1956 in Lvov. Education: Leningrad State University, 1977–82. USSR Academy of Sciences, Graduate School, 1985–86. Ph.D. (*Doctorate*) in History, Leningrad State University, 1988. D.Sc. (*Habilitation*) in Philosophy, St. Petersburg State University, 1995. Employment: Russian Academy of the Sciences, St. Petersburg, 1987–. Scholarships: Alexander von Humboldt Foundation, Constance University, 1990–92. Center for Hellenic Studies, Washington, DC, 1995–96. Institute for Advanced Study, Princeton, 1998–99. Wellcome Trust Institute for the History of Medicine, London, 2000–01. Scholarly interests: ancient Greek science and medicine, early Greek philosophy and religion, sociology of science. – Address: Institute for the History of Science and Technology, University of St. Petersburg, Universitetskaja nab. 5, 199034 St. Petersburg, Russia.

Applying for the Wissenschaftskolleg in 1999, I submitted a project on the origin of the ancient Greek historiography of science. When I came to Berlin in 2002, the Russian version of my book was already published in St. Petersburg. This gave me a possibility to look at my subject from a broader perspective. In an additional chapter for the English version of my book that will be published by Walter de Gruyter (Berlin), I try both to trace the development of the historiography of science from the ancient period to the early 19th century and to answer the question why so little was written on this subject till now.

Indeed, unlike the origin of science, which historians of science have always taken seriously, the origin and the early stages of the history of science have never excited any special interest. Although historians of science must be interested in the origins of their discipline, they usually date its beginning to the 17th–18th centuries. However, the history of science

actually goes back to classical antiquity, and by the end of the 18th century it had already become a well-established discipline.

Obviously there is something more here than just lack of historical consciousness. Closer examination of the literature on science and medicine written between 1500 and 1800 reveals as much continuity between ancient Greek and “pre-modern” historiography, as discontinuity between the latter and the history of science in the 19th century. First, this historiography was deeply conservative and antiquarian because it originated as a history of Greek science and focused on this subject until the end of the 18th century. It was more about Euclid, Hippocrates, and Ptolemy than about Kepler and Newton. Second, many of its approaches and methods are borrowed from the Greek historiography of science. Third, it was uncritical, both historically and philologically, and descriptive rather than analytical and explanatory. Hence, this historiography seems a continuation of the Greco-Roman tradition, which around 1800 was transformed into a modern, critical, and source-oriented discipline that took contemporary science as its main reference point.

The historiography of philosophy is quite different. There has been much work done on the ancient and early modern historiography of philosophy, so we know and understand these writings much better. Different approaches to the historical past of both disciplines – the history of philosophy and the history of science – reflect differences between science and philosophy, and specifically reflect that disagreeable but well-known fact that the history of science does not have the same value for scientists as the history of philosophy does for philosophers. Normally, scientists do not need any history of science – indeed some of them have deep suspicions about this discipline – but even those who appreciate it do not regard reading a book on Galileo, Faraday, or Darwin as a part of their regular scientific work. There are historically conscious scientists, but these few are insufficient to change general attitudes, for the simple reason that scientists and historians of science solve different problems, whereas contemporary philosophers often still try to solve problems first posed by Parmenides, Aristotle, or Descartes.

As opposed to the history of philosophy – which is still an integral part of philosophy – or the history of medicine, which was an integral part of medicine up to the 19th century – the history of science becomes really *necessary* for scientists only when, for whatever reason, scientific and cultural traditions are disrupted. One such period was the 9th and 10th centuries, when Greek science was appropriated by the Arabic-speaking world. Muslim scientists had a lively interest in their Greek predecessors, and they tried to find every last bit of information on them, drawing up catalogues of their works, commenting on them,

translating the extant biographies of famous scientists and doctors, and compiling new ones. Later, on the basis of all this, a historiography of Arabic science and medicine arose, which in turn influenced both medieval Jewish and Western traditions.

In the Renaissance we see a very similar situation. To return to Greek science after so many centuries; to edit and translate Euclid, Archimedes, and Ptolemy; to understand “who was who” in ancient science – all this urgently demanded the creation of at least a general historical picture of Greek mathematics and astronomy, whose achievements would be presented in a chronological way. Under such circumstances the question of “who discovered what?” is highly relevant for scientific investigation as such. For the absence of clear answers to this question hinders the development of science, forcing it to spend time and energy in proving what has already been proven or in refuting what has already been refuted. Thus, there was a kind of objective necessity – or at least a very powerful impetus coming from science itself – for the history of science to be born at this time.

In contrast to the Arabic Middle Ages and the European Renaissance, the Greek historiography of science arose not in the scientific milieu where it “should” have arisen, but in the philosophical school, which nevertheless stood close to contemporary science. In the late 4th century BC, Aristotle’s student Eudemus of Rhodes wrote such important works as the *History of Geometry*, *History of Astronomy*, and *History of Arithmetic*. Furthermore, the Greek historiography of science originated not in the course of the restoration of a disrupted scientific tradition, but at that moment when Greek mathematics and astronomy, having laid their foundations, were soon to achieve their most glorious heights. Even more important is that the history of science, unlike other historiographic genres emerging in Aristotle’s school – biography, cultural history, and the historiography of philosophy and medicine – received almost no continuation during antiquity, and especially – not in the scientific community. Biography was addressed to a wide audience and did not avoid scandalous details, the historiography of philosophy and medicine later found new forms answering the intellectual interests of the followers of various philosophical and medical schools. The history of science was written by a philosopher and was read almost exclusively by philosophers, as far as we can judge by the later quotations of Eudemus’ works. Some Greek scientists may have been interested in the history of science – but not interested enough to continue Eudemus’ work.

All this means that, in explaining the appearance of Greek historiography of science, we need to look for the other factors and motivations. Here I would point to just two of them. The main question underlying Eudemus’ histories of science is “who discovered what?”,

and by his time the question was a traditional one. The history of science has one of its “origins” in the attempts of many classical writers to find out who was the first discoverer of all the things that constitute civilized life. Who invented masonry? Ironwork? Who was the inventor of the alphabet, of astronomy, of rhetoric? Originally this quest for the “first discoverers” was not a historical study but rather a rationalization of the mythical past, and many of the discoverers were legendary or mythical figures. But due to the attention paid to the question of priority, human figures also came to light, such as Thales with his prediction of the solar eclipse.

The other important motivation for the Peripatetic history of science was a belief, popular in the classical period, in progress, both social and intellectual. To be sure, the Greek idea of progress differs from the 19th-century ideology, according to which in the *future* we will experience constant improvement in *all* spheres of human life. The Greek idea of progress was more limited, and therefore more realistic. It was related rather to the growth of technology and knowledge, and even within this narrow scope it was concerned with real achievements of the past and present, and not with imagined prospects for the future. A line connecting us with the past, when there was no agriculture, no state, no writing, no medicine, no drama, mathematics, or philosophy – this line does not continue into the future but finishes in the present. Why? Because medicine had already found all that it could for curing diseases, drama had already achieved perfection, rhetoric could not be bettered, and science and philosophy had discovered nearly everything that is was possible to discover.

According to Aristotle, everything in nature, society, and culture develops from a primitive state to a perfect one, and in many things this perfection has already been achieved or is on the verge of being achieved. Luckily for us, Aristotle was not satisfied in just establishing the starting and finishing points of progress and setting its proper direction. As a naturalist, he was deeply interested in details: What happened in between those pinnacles of progress? How exactly does knowledge progress? Which discoveries and names mark its different stages? To answer these questions, Aristotle initiated a wide-ranging historiographic project that was carried out by his students. It included, first, three histories of science by Eudemus as well his other work, *History of Theology*. Then came the doxographical treatise by Theophrastus, *Opinions of the Natural Philosophers*. And the last work was Menon’s *Medical Collection* a medical doxography analogous to Theophrastus’ physical doxography. Thus, the Peripatetic history of science originated as a part of an ambitious

historiographic project that aimed at describing the most important achievements in the field of knowledge.

Apart from this concluding chapter, during this year I was also working on the chapter on Pythagoras and the Pythagoreans for the new edition of Ueberweg-Praechter's *Grundriss der Geschichte der Philosophie* and was editing the book of my late teacher Professor Aleksei Zaicev on Greek mythology and religion.



WENN WEST UND OST, SÜD UND NORD SICH TREFFEN: IN BERLIN

SUSAN ZIMMERMANN

Geboren 1960 in Tübingen/Neckar, eine Tochter, geb. 1997. Studium der Geschichte, Geographie, Soziologie und Politikwissenschaften in Erlangen und Wien. Professorin der Geschichte am Department of Gender Studies und am History Department der Central European University in Budapest, Ungarn. Lehrbeauftragte und Mitarbeiterin des Studienmoduls Globalgeschichte an der Universität Wien. Habilitationen an der Johannes Kepler Universität Linz und der Eötvös Loránd Universität Budapest. Stipendien u. a. am Institut für Höhere Studien in Wien sowie APART-Habilitationssтипendium der Österreichischen Akademie der Wissenschaften; Gastwissenschaftlerin am Zentrum für Vergleichende Geschichte Europas, Berlin; Preis für mitteleuropäische Städteforschung, Käthe-Leichter-Preis, Eduard-März-Preis für hervorragende Arbeiten auf dem Gebiet der Wirtschafts- und Sozialgeschichte. Veröffentlichungen u. a.: *Prächtige Armut: Fürsorge, Kinderschutz und Sozialreform in Budapest; das „sozialpolitische Laboratorium“ der Doppelmonarchie im Vergleich zu Wien 1873–1914*. Sigmaringen, 1997. *Die bessere Hälfte? Frauenbewegungen und Frauenbestrebungen im Ungarn der Habsburgermonarchie 1848–1918*. Wien und Budapest, 1999. Mitherausgeberin und Beiträge in *Ungeregelt und unterbezahlt: der informelle Sektor in der Weltwirtschaft*. Frankfurt/Main, 1997 und *Sozialpolitik in der Peripherie: Entwicklungsmuster und Wandel in Lateinamerika, Afrika, Asien und Osteuropa*. Frankfurt/Main und Wien, 2001. – Adresse: Central European University, Nádor u. 9, 1051 Budapest, Ungarn.

Als Historikerin interessiere ich mich dafür, wie raum-zeitlich gebundene Verhältnisse und Entwicklungen überall in der Welt mit globalen Tendenzen und mit der historischen

Veränderung des Globalen selbst zusammenhängen. Ich möchte also das Lokale aus einer multifokalen und dezentrierten, globalen Perspektive verstehen, möchte es als Konsequenz und als Gestaltungskraft des Globalen begreiflich machen. Ich gehe davon aus, dass eine solche Perspektive dazu beiträgt, Geschichte in der globalisierten Welt, in der wir seit Jahrhunderten leben, besser zu verstehen. Mein Forschungsprojekt zur Globalisierung des Nationalen und zur Historisierung des Globalen im „kurzen“ 20. Jahrhundert, das drei „lokale“ Geschichten erzählt, in denen es um die Auseinandersetzung verschiedener Akteure um Nation im internationalen Raum geht, habe ich am Wissenschaftskolleg wohl doch ein Stück vorangebracht.

Jenseits der eigentlichen Forschung ist mir das Jahr am Kolleg, die befristete „lokale“ Existenz im Berliner Grunewald auch zur gelebten Erfahrung der Nützlichkeit dezentrierter globaler Perspektiven in der Wissenschaft geworden, und dabei habe ich (ebenfalls) viel gelernt. Begonnen hat dies damit, dass ich mich von Anfang an oft gefragt habe, welche Rolle die globalen intellektuellen Konstellationen für das wissenschaftliche Leben an einem Kolleg spielen, das in einem der wichtigsten westlichen Industrieländer mit großer intellektueller Tradition – einem Land, das noch dazu einmal meine „Heimat“ war – angesiedelt ist. Wie prägt die globale Zusammensetzung der Fellows und ihrer Begleiter/innen das intellektuelle Leben im Kolleg und seiner wissenschaftlichen Umgebung? Wie positioniert sich das Wissenschaftskolleg in und gegenüber der globalen Konstellation und wie gegenüber den Interessen und Interventionen seiner vorübergehenden Bewohner/innen, die diese zum Gutteil von „zu Hause“, aus den Lokalitäten ihres wissenschaftlichen Schaffens und Interesses mitbringen?

Ein erstes diesbezügliches Schlagwort, das sich schon im Herbst des Kolleg-Jahres herauskristallisierte, bezog sich auf die deutsche Wissenschaftslandschaft. Wie ich diese im Jahr meiner „Rückkehr“ nach Deutschland und der Einkehr in der alten-neuen Hauptstadt dieses Landes erlebt habe, konnte ich mich des Eindrucks einer selektiven intellektuellen „Amnesie“ nicht erwehren. Zwei brennend heiße Eisen deutsch-transnationaler Zeitgeschichte werden, so scheint mir, selten zum Objekt ernsthafter und kritischer wissenschaftlicher (Selbst-)Reflexion: die höchst asymmetrische und in vieler Hinsicht durch hierarchische und (post)koloniale Merkmale gekennzeichnete Dynamik der wissenschaftlichen Wiedervereinigung in Deutschland; und die Rolle, die Deutschland für die EU-Osterweiterung und in der „anderen Hälfte“ Europas seit 1989 spielt. Oft kam mir hinter meinen Büchern und Kopien, am Computer und im Vortragssaal der Koenigssee in den Sinn, auf dem meine Tochter und ich unbesorgt des tiefen Winterwassers unterm Eis im

strahlenden Wintersonnenschein Schlittschuh laufen konnten: Die Rede von der reflexiven Moderne, von der notwendigen Auseinandersetzung mit den Stimmen der „Anderen“, die sich im je eigenen Land wenig Gehör verschaffen können, von der Denationalisierung der Wissenschaften, schien „zu Hause“, wenn es um „zu Hause“, um Deutschland also, ging, noch nicht angekommen zu sein. Bald begann ich mich zu fragen, wie dieser Befund auf Traditionen und Institutionen der Wissenschaften in diesem Lande verweist und was es für die „örtliche“ Wissenschaft bedeutet, wenn ein Land im Zeitalter der Infragestellung der ererbten Stellung des Nationalstaates zur nationalen Wiedervereinigung schreitet und sich zugleich auf den Weg zur Hegemonialmacht (zum Beispiel) in Zentralosteuropa macht? Ich werde diesen Fragen rund um das Thema Wissenschaft im wiedervereinigten Deutschland im Zeitalter europäischer Denationalisierung in der „Geschichte Nr. 3“ in meinem Buchmanuskript weiter nachgehen.

Nicht minder anregend als mit Blick auf Deutschland gestaltete sich das Jahr im Grunewald hinsichtlich der – ebenso alten wie großen – Frage nach der Beziehung zwischen Europa und der Welt. Das Nachdenken darüber machte sich für mich, im intellektuellen Mikrokosmos „unseres“ Jahrgangs am Kolleg, vor allem an zwei Themen fest: an der US-amerikanischen Intervention im Irak und an der Rolle des Holocaust als Teil der europäischen Geschichte für die Geschichte außerhalb der westlichen Welt. In den Diskussionen, die wir zu beiden Themen übers Jahr geführt haben, richtete sich mein Augenmerk wiederum auf das Zusammen-Denken: Wie spiegeln und verwickeln sich in der Weltsicht Intellektueller Prozesse historischen Wandels, die sich eigentlich getrennt voneinander – zu gleicher Zeit, aber in verschiedenen geographischen Räumen und/oder auf verschiedenen Ebenen des historischen Geschehens – abspielen? Die US-Intervention im Irak wurde mir rasch zum Paradebeispiel dafür, dass intellektuelle Positionierungen in Zusammenhang mit einem bestimmten politischen Ereignis erst in Beantwortung dieser Frage tatsächlich nachvollziehbar und der Kritik zugänglich werden.

Während „unseres“ Berliner Jahres erlangte im Zusammenhang mit der Irak-Intervention in ganz Europa die Identifikation mit der wieder- bzw. neugeborenen Idee des „alten Europa“ einen hohen Stellenwert. Als konstituierende Elemente dieser Identität eines neuen „alte Europa“ durften zwei Ideen gelten. Europa müsse sich forciert an den Auf- und Ausbau einer eigenen Militärmachine machen. Und die durch UNO und Völkerrecht verkörperten geltenden Rechts- und Handlungsnormen sollten weiterhin die Grundlage der internationalen Beziehungen bilden. Bei meinen Bemühungen, diese Sicht der Dinge in den globalen Konstellationen zu Beginn des 21. Jahrhunderts zu verorten,

erschien sie mir bald als eine kuriose Kombination aus vorwärts und rückwärts gewandten Impulsen.

Was das internationale System betrifft, so ist diese Sicht der Dinge offenkundig in einer teilweisen Ausblendung jener heutigen Auseinandersetzungen um die Gestaltung des Globalen begründet, bei denen es sich um die Globalisierung von „Menschenrechten“ dreht. Historisch dem Kontext der Allgemeinen Erklärung der Menschenrechte von 1948 und dem Interesse an der Gestaltung der postkolonialen Welt im Zeichen westlicher Werte entwachsen, stellt die Globalisierung der Menschenrechte mittlerweile ein bedeutendes Element der Infragestellung ererbter Strukturen des internationalen Systems dar. Auf diesem Feld der politischen, diskursiven und auch militärischen Auseinandersetzung treffen jene, die die Rede von den Menschenrechten radikalisieren, diese also von unten, überall, für alle, kontextgebunden und tatsächlich, sowie zur Not auch gegen die vermeintliche Einheit der Nation, verwirklichen wollen, auf jene anderen, die dieselben Menschenrechte bemühen, um ihre Hegemonialinteressen unter Umständen auch unter Ausschaltung oder Umgehung einzelner „postsouveräner“ Nationalstaaten und gegen ererbte Regeln des Völkerrechts durchzusetzen. Diese Auseinandersetzung bildet einen Kern der längst in Gang befindlichen Erosion jenes internationalen Systems, das wir aus dem „kurzen“ 20. Jahrhundert ererbt haben. Die Offenheit, die aus diesem Aufbrechen tradierter Ordnung und ererbter Hierarchie im internationalen System entsteht, öffnet tatsächlich die Tür für eine neue Barbarei – und lässt doch zugleich die Möglichkeit einer gerechteren Weltordnung am Horizont aufscheinen. Die Idee eines neuen „alten Europa“, wie sie im Frühjahr 2003 auf die Bildfläche trat, vermeidet mit ihrer Berufung auf die UNO und das existierende Völkerrecht eigentlich eine eigene Positionierung in dieser Auseinandersetzung. Dies hängt natürlich auf das engste damit zusammen, dass dieses neue „alte Europa“, global gesehen, nicht als anti-hegemonial, sondern als gegen-hegemonial gedacht wird. Es soll eine Alternative zu (den neuen Formen) US-amerikanischer Hegemonie darstellen, zugleich aber keinesfalls eine Infragestellung westlicher Dominanz im internationalen Institutionensystem und in der geopolitischen Auseinandersetzung überhaupt implizieren, wie sie mit einer wirklichen Globalisierung der Menschenrechte einhergehen müsste.

Zu der auf diese Weise zusammen-gedachten Logik der ins „kurze“ 20. Jahrhundert zurückgerichteten Haltung zum internationalen System passt dann auch der ganz offensiv in die Zukunft gerichtete Impuls der EUisierung und des forcierten Ausbaus der vereinten militärischen Schlagkraft der Länder der Europäischen Union, der das zweite Kern-

element der neuen Identität des „alten Europa“ ausmacht. Wenn der in der EU vereinte Teil Europas im Zuge seines anvisierten Aufstiegs zur Hegemonialmacht des 21. Jahrhunderts der amerikanischen Macht Paroli bieten und erfolgreich ein alternatives Modell der Bekämpfung und Befriedung des „internationalen Terrorismus“ im Zeichen fortgesetzter westlicher Dominanz verfolgen will, geht das nicht ohne eigene Militärmaschine. Und so laufen, *summa summarum*, in der neuen Identität des „alten Europa“ die Auseinandersetzungen einer Vielfalt von Akteuren um die sich verändernden geopolitischen und wirtschaftlichen Beziehungen zwischen Europa und den USA, um die Stellung Europas in der Welt und um die Strukturen und politisch-rechtlichen Bezugspunkte des internationalen Systems zusammen: in Gestalt eines neuen EU(ro)zentrismus des 21. Jahrhunderts.

Wo aber bleibt, so habe ich mich im Zuge von Lektüre und Diskussionen in „unserem“ Jahr in Berlin immer wieder gefragt, in den Auseinandersetzungen zwischen dieser Logik und jener des US-Präsidenten Bush jene Perspektive, die sich als „dezentriert global“ kennzeichnen lässt? Welcher Platz kommt in dieser Auseinandersetzung jenen intellektuellen Welten zu, deren *foci* und *loci* nicht in den westlichen Industrieländern liegen? Die Antwort auf diese Frage haben mir, am Wissenschaftskolleg, vor allem Fellows gegeben, die sich mit dem Islam und/oder der arabischen Geschichte beschäftigen. Sie haben mir diese Antwort durch ihre Überlegungen zu einer „anderen“ – in unseren Diskussionen selten direkt im Zusammenhang mit dem Irak zum Thema gewordenen – Frage gegeben: der Frage nach der Rolle des europäischen Holocaust für Geschichte und Gegenwart der außereuropäischen und insbesondere der arabischen Welt. Vor allem Abbas Beydoun stellte diese Überlegung auch umgekehrt an und fragte nach dem Platz der arabischen Welt im europäischen Diskurs über den Holocaust. Seine Antwort, wenn ich sie recht verstanden habe, lautet, dass es in Europa offenkundig auch heute noch möglich und üblich ist, diesen Platz als diskursive Leerstelle zu belassen. Ein integratives Denken in globaler Perspektive, das derartige „Auslassungen“ in Frage stellt, wird, so meine ich mit Walter Mignolo (2000), dann möglich, „when different local histories and their particular power relations are taken into consideration“. Dies bedeutet nichts anderes, als dass die europäische Auseinandersetzung über den Holocaust, wenn sie die genannte Leerstelle besetzen möchte, nicht daran vorbeikommt, die Erfahrungen der arabischen Welt mit den expansiven Konsequenzen europäischer Politik ernst zu nehmen und gleichrangig in ihre Analysen von Geschichte und Gegenwart Europas in der Welt einzubeziehen.

Und nun habe ich über jenen vierten Themenkreis, der mich in der Zeit am Wissenschaftskolleg gefesselt hat und mit der globalen Perspektive nur bedingt zu tun hat,

gar nicht geschrieben: über die Evolutionsbiologie und ihr Verhältnis zu den Geistes- und Sozialwissenschaften. In der Tat ist die Konstellation zwischen diesen Polen grundsätzlich schwierig, und das war sie auch in „unserem“ Jahr am Wissenschaftskolleg. Während sich zwischen positivistischen Ansätzen in den Sozialwissenschaften und „den Biologen“ immer wieder Koalitionen bilden (können), sind die meisten Spielarten eines (Post-)Konstruktivismus geneigt, selbst jener Biologie auszuweichen, die der „Kultur“ im Feld biologischer Forschung einen genuinen Platz einräumen will. Die Biologie ihrerseits beharrt nicht nur auf ihren in den Genen verankerten Universalien, sondern hat über die Rolle des Physiologischen in und seine Formung durch Geschichte und Gesellschaft tatsächlich zu meist wenig Substanzielles zu sagen. Und doch sollten sich, so meine ich, die Geistes- und Sozialwissenschaften sehr viel ernsthafter als bisher an historisch-gesellschaftliche Analysen der Materialität der physiologischen Existenz und Erfahrung von Frauen und Männern machen. Denn wo diese unterbleibt, besteht, darauf hat Gisela Bock am Beispiel der Frauen- und Geschlechterforschung schon 1991 hingewiesen, die Gefahr, dass mit Definitionen von „gender“ operiert wird, „which exclude[s] sexual ,difference‘, meaning women, by classifying it as ‚biological‘ and therefore as socially and historically irrelevant.“ Wenn die Geschlechterforschung an Alternativen (weiter)arbeiten will, dann kommt sie (unter anderem) an den Perspektiven und Ergebnissen der Evolutionsbiologie, wie ich sie am Wissenschaftskolleg kennengelernt habe, nicht vorbei.

Doch der Dialog miteinander hat so recht noch nicht begonnen. Kein Wunder, verlangt es doch von beiden Seiten die – zumindest „experimentelle“ – Infragestellung von Fundamenten des eigenen Denkens und der eigenen wissenschaftlichen Dogmen älteren und jüngeren Datums. Dazu fühlt sich jedoch die in vieler Hinsicht zur Leitwissenschaft aufgestiegene Biologie nicht unbedingt bemüßigt, während die Geschlechterforschung ihr Ringen um einen gleichberechtigten Status in der Wissenschaft mit solchen „Experimenten“ nicht unbedingt belasten kann und will, und jegliche Form der „Biologisierung des Sozialen“ zu Recht auf das Schärfste zurückweist. Indem das Wissenschaftskolleg die „life sciences“ – in Gestalt von Biolog(inn)en, Sozialwissenschaftler(inne)n und Geisteswissenschaftler(inne)n – überhaupt zusammenbringt, schafft es trotzdem Voraussetzungen und Raum für einen Dialog. Dies ist für all jene, die sich an einem solchen Gespräch beteiligen wollen, von kaum zu überschätzendem Wert.

Vorträge und Schwerpunkte

TOWARD A HERMENEUTICS OF THE QUR'ÂN¹

NASR ABÛ ZAYD

*The Qur'ân is in the Mushaf. It does not speak
by itself; people (humans) speak it out.
'Alî Ibn Abî Tâlib, the fourth Caliph*

This lecture does not claim to present all the aspects of the issue of hermeneutics. It aims only to present a very broad perspective on the possibility of creating a paradigm for understanding and explaining Islam through an interpretative framework of its foundational text, the Qur'ân. My point of departure is the phenomenon that has recently dominated contemporary Islamic discourse, which is the political manipulation of the meaning of Islam. Because the Qur'ân is the foundational text of Islam and considered the only source of knowledge, my lecture will focus on the role of the Qur'ân by reexamining the basic doctrines related to its being conceived of as a divine text. The various dimensions of its definition will be historically and semantically analyzed with reference to classical theological dispute about them. Then the question of how to develop some hermeneutical principles based on its textual boundaries will be raised and some suggestions will be introduced.

Qur'anic Exegeses from Manipulation to Hermeneutics

As an Egyptian Muslim citizen, I have witnessed with great concern and anxiety how the meaning of Islam in contemporary religious discourse has been subject to manipulation. My experience of life encompasses divergent interpretations of Islam from the 1960s and '70s. In the '60s, the dominant religious discourse was that Islam is the religion of social justice; a huge body of literature was produced by the eminent scholars who belong to the official Islamic institution in Egypt, the al-Azhar University, dealing with two major

¹ Lecture held at the Wissenschaftskolleg zu Berlin on January 15, 2003.

topics: Islam and Socialism and Islam and Arab nationalism. Besides propagating the social and the national aspects of Islam, the concept of *jihâd* was also propagated, urging us to fight against the threat of imperialism and Zionism. In the '70s, with the adoption of the "open-door economic policy", Islam became the religion that guarded private property. This new trend of discourse went so far that the "law of land reform" (1954), which had been highly esteemed as very Islamic, was reinterpreted as anti-Islamic. The millions of Egyptian farmers who had become owners of the land they cultivate were forced to return the land to the original owners. More than that, the law of inheritance tax was also reinterpreted as violating the norms of *shari'a* and, therefore, was abolished. With the initiation of the peace process with Israel in 1978, Islam became the religion of peace.

The question that started to worry me from the very beginning of my academic career was: Is it possible to escape the impact of the pragmatic exegesis of the Qur'ân, and if so, how? In my first book (1982)², I started to examine the different methods of interpretation applied to the text of Qur'ân in traditional Islamic theology. I investigated the emergent concept of "metaphor" that the rationalist school of theology, known as the Mu'tazilites, introduced to Arabic rhetoric at the beginning of the 9th century in their effort to explain the anthropomorphic images of God in the Qur'ân, on the one hand, and the verses that seem to support a doctrine of "predestination", on the other. The Mu'tazilites employed the concept of "metaphor" as a linguistic tool to interpret those types of verses of the Qur'ân that they considered "ambiguous". This forged a powerful instrument to interpret the qur'anic text in accordance with the Mu'tazilites' transcendentalist standards: where it suited their ideas, the qur'anic text was labeled "clear" and, therefore, not in need of metaphorical interpretation; where it did not, it was considered "ambiguous" and interpreted metaphorically. The main conclusion reached after comparing both the Mu'tazilites' and the anti-Mu'tazilites' discourses was that the Qur'ân was the site of a fierce intellectual and political battle. That battle was sited at one of the most important junctures of the structure of the qur'anic text (Qur'ân, 3:7). Both the Mu'tazilites and their opponents agree on the principle that the Qur'ân includes ambiguous verses as well as clear verses, and that the "clear" should furnish the norms for reducing the ambiguity of the ambiguous. However, they disagree when it comes to practical implementation; thus, the controversy not only

² *Al-Ittijâh al-'aqlî fî al-tafsîr: dirâsah fî qadiyat al-majâz fî al-Qur'ân 'inda al-mu'tazila*. Beirut: Dâr âl-tanwîr li al-tibâ'a wa al-nashr, 1982.

revolves around the meaning of the Qur'ân, it also involves its structure. What the Mu'tazilites considered "clear", their opponents considered "ambiguous" and *vice versa*.

Such intellectual disputes about the structure and the meaning of the Qur'ân constituted the first hermeneutical principle as the dichotomy between clarity and ambiguity. It is important to mention that Mu'tazilism did not start as an intellectual exercise, but rather evolved out of the socio-political as well as theological struggle between the modern and the traditional powers. The idea of divine predeterminedness (*jabr* or *qadar*), for example, was the theological expression of *Ummayad* absolute political rule. The Mu'tazilites' insistence on human free will – or at least on the illegitimacy of making God responsible for human sin – was a means of combating the Ummayads. Another reason for the Mu'tazilites' strong rationalistic stance was that they were forced to defend Islam against other religions, against Christian polemicists in particular. Their argument had to be rationally sound to be accepted.

The intellectual opponents of the Mu'tazilites were the traditionalists, who upheld the literal interpretation of all qur'anic verses, to the extent that they affirmed the existential reality of all divine attributes, all eschatological images, and even the idea that God can be seen by human eyes. The Mu'tazilites objected to their idea that the literal interpretation of the holy text was a religious duty, regarding this as an obstacle to the fulfillment of mankind's destiny. They believed that God Himself imposed on mankind the duty to acquire real knowledge by using his rational faculties.

Ibn Rushd (Averroes), a great Muslim philosopher who contributed to Western enlightenment through his Arabic works as well as through his translations of and commentaries on Aristotle, further developed the Mu'tazilite system in order to open up the meaning of the Text to the findings of philosophy. According to Averroes, the Qur'ân includes three modes of semantic expression. The first, and most common, is the outward poetic (*khâtabî*) form addressing the masses; the second is the argumentative (*jadalî*) form intended to address the theologians; the third and most refined is the philosophical (*burhâni*) form intended for the philosophers. This theory was further developed by Muhyî-Al-Dîn Ibn 'Arabî, which development was the topic of my second book (1983)³. In this book I embarked on investigating the hermeneutics of the Qur'ân within the context of Sufism (mysticism), which is supposedly void of political interests. Muhyî al-Dîn Ibn 'Arabî, the great Andalu-

³ *Falsafat al-tâ'wil: dirasah fî ta'wîl al-Qur'ân 'inda muhyî al-dîn ibn 'arabi*. Beirut: Dâr âl-tanwîr li al-tibâ'a wa al-nashr, 1983.

sian Sufi who was born in Spain, wrote his greatest treatise in Mecca (The Meccan Revelation – al-Futûhât al-Makkiyya) and died in Syria (638 /1279). Ibn ’Arabî’s hermeneutical project constituted an attempt to integrate all knowledge existing up to his time (from Plato to Averroes) in the Qur’ân; he wanted to turn Islam into an open-ended project, one that could reconcile itself with, and indeed include, Christianity, Judaism, and all other religions. Islam has to be a religion of comprehensive love, as Ibn ’Arabî terms it in his poetry. The hermeneutics of the Sufi depends basically on the notion of four semantic levels applicable to every verse: the outward (*zâhir*), the inward (*bâtin*), the limitation (*hadd*), and the upward (*matla'*). This multi-semantic structure of the Qur’ân enabled the Sufis to avoid the dichotomy of clarity and ambiguity employed by the theologians, because every level leads to the upper and contains the lower with no contradiction or dichotomy. It also keeps the Qur’ân accessible to all the believers, regardless of their education or their intellectual capacity.

Nevertheless, Ibn ’Arabî’s project was very much a product of Andalusian society, based on linguistic, cultural, and ethnic pluralism – with Provençal spoken in the streets, Latin in the Church, classical Arabic in the divans, and a multitude of local dialects elsewhere. It was a project of reconciliation between all these elements and groups. Needless to say that, in the end, Ibn ’Arabî attempted to formulate a utopia of his own, a formula that gained impetus from the increasing tension and conflict within his own society, on the one hand, and in the socio-political historical context of the Muslim world during his lifetime, on the other.

I thus became aware that the interpretation of the Qur’ân was not and has never been an innocent maneuver void of socio-political and cultural impact. More than that, it sometimes exceeds that impact to become a deliberate political manipulation of the meaning of the religious text. I therefore felt it was necessary to investigate the very concept of the “text”. The result of this investigation was my third book (1990). It was my intention that, before dealing with the questions of interpretation, one must first define the nature of the text to be interpreted and must examine the laws that govern the study of that text. If religious texts, which profoundly influence social and cultural life, are placed at the mercy of the ideology of the interpreter without defining the extent to which the text lends itself to exegesis and the limits of meaning it offers, the text could be forced to speak any ideology whatsoever. What I am going to discuss in the following parts of my lecture is my recent progress in research on the basic ideas I started to develop in the aforementioned book.

What is the Qur'ân?

The Qur'ân is the word of God revealed to the Prophet Muhammad in plain Arabic language over the span of 23 years. This is the undisputed definition accepted by all Muslims through the history of Islamic thought, regardless of their theological and cultural differences. In this definition we can distinguish three aspects, the word of God *kalâm Allâh*, the Qur'ân, and revelation or inspiration *wahy*. Are these three concepts lexically and semantically identical? Do they denote or connote the same meaning? It seems that they have been dealt with as synonyms in modern Islamic discourse, while in classical theology there was a certain awareness of the different meaning of each, which is also reflected in the qur'ânic usage.

What is the Word of God?

Is it the content of the message expressed in human language? Or does it include language as an essential component? The most obvious qur'ânic expression is in chapter 18:109 and 31:27, where it is emphasized that the Words of Allah are infinite and inexhaustible. Even if all the trees on earth were pens, all the oceans ink, with seven oceans behind them to add to its supply, the Word of God could not possibly be exhausted. Therefore, if the Word of God is impossible to confine, whereas the Qur'ân as a text is limited in extent, the Qur'ân should represent only one specific manifestation of the Word of God.

Although the Qur'ân refers to itself in many passages as the speech of God *kalâm Allâh*, which seems to confirm the identification of the Word of God with the Qur'ân, perceiving God as a speaker creates many complicated theological difficulties, which were in fact vibrantly discussed as early as the 8th century, the second century in the history of Islam. The issue was discussed and debated extensively by Muslim theologians and led to what is known as “the inquisition of the creation of the Qur'ân”, *mihnat khâlq al-Qur'ân*. The discussion centered on the question whether the Qur'ân was eternal or created. The Mu'tazilites in general insisted on the createdness of the Qur'ân in order to save the eternal unity of God from having a second eternal existence beside it. But the Hanbalites refused to ascribe the attribute “createdness” to the Word of God. The political authority initially favored the doctrine of the “created Qur'ân”. So the followers of the “eternal Qur'ân” doctrine were persecuted. When the ideology of the Caliph changed and favored the Hanbalite

trend, the adherents of the Created Qur'ân had to suffer. The dispute was politically dissolved in favor of the “Orthodoxy” against the “Heterodoxy”.

The Ash'arites later developed a theory that differentiated between the eternal Word of God, on the one hand, and its manifestation in human recitation, on the other hand, between the verbal “recitation” and the “recited” content. They ascribed eternity to the Word of God itself, whereas createdness was ascribed to its human verbal vocalization. But the doctrine of the “eternity of the Qur'ân” has been the dominant doctrine in Islamic theology. The parallel issue in the history of Christian theology took another direction. The reason for this, according to Van Ess, is that the notion of eternal speech was an extremist doctrine in Christianity, “where theology worked on the basis of four translated Gospels”.

What is Revelation, *Wahy*?

It is the process of communication, the channel through which the Word of God was revealed to Muhammad. Etymologically, the linguistic root of the Arabic word means “mysterious non-verbal communication”. Its usage in pre-Islamic literature, as well as in the Qur'ân, demonstrates this. It refers to a form of communication involving two beings of different grades of existence.⁴ In the process of revealing the Qur'ân, however, three are involved, i.e., God, the Archangel as mediator, and the Prophet as recipient. Although the connotation of “mysterious non-verbal communication” is not absolutely removed, the existence of a mediator put the concept of non-verbal communication under theological challenge.

The Qur'ân always indicates that *wahy* has been the channel through which previous scriptures were revealed. *Wahy*, therefore, cannot be considered identical to the Qur'ân, as is claimed by Muslim as well as non-Muslim scholars;⁵ it is the channel through which the Word of God in general is revealed to humans. The Qur'ân clearly indicates that there are only three possible channels of communication between God and man: either “by inspiration, or from behind a veil or by sending a messenger to reveal (by inspiration) by God's permission what He wills” (42:51).

⁴ Cf. Izutsu, Toshihiko. “Revelation as a Linguistic Concept in Islam.” *In Studies in Medieval Thought*, vol. V. Tokyo: The Japanese Society of Medieval Philosophy, 1962, 122–167.

⁵ Ibid. p. 138. He starts by identifying “revelation” with concrete speech behavior (*kalâm*) as an essential condition for his analysis, thus confusing different qur'anic terms.

The first channel, inspiration, is obviously a qur’anic form of non-verbal communication. The second channel, from behind a veil, is the channel through which God spoke to Moses from behind the burning bush and/or behind the mountain. But again, the question about “how” God spoke to Moses raised similar difficulties and was present at the heart of the discussion about the Qur’ân, already referred to. The third channel is believed to be the channel of the qur’anic revelation, where the mission of the mediator, Gabriel, was to communicate God’s speech, *kalâm Allâh*, to Muhammad by *wahy*, non-verbal communication. The conclusion then should be that, in the qur’anic usage, *wahy* is not semantically synonymous with God’s speech.

Does God Speak Arabic?

Third, what does it signify when the Qur’ân repeatedly emphasizes that it is revealed in plain Arabic, *bi-lisânin ’arabiyyin mubîn*? According to the Qur’ân, God has chosen Prophet Muhammad to be His messenger in order to convey His message to the people, which introduces the concept of *risâla*, message, obviously denoting the “content” of the Qur’ân as separate from its linguistic expression. As a message, Islam, according to the Qur’ân, is not a new religion brought down to Muhammad to preach to the Arabs, but essentially the same message preached by all the prophets since the creation of the world. (Qur’ân, 42:13 and 4:163–164.) It is, therefore, inferred that all the prophets are considered Muslims in the Qur’ân. (Qur’ân, 6:163; 7:143; 10:72, 84, 90; 27:31, 38, 42, 91; 39:12; 46:15, etc.) In accordance with the lexical meaning of the word, Islam is absolute self-submission to God, the Lord of the universe (2:112).

Though universal and for all humans, as it is claimed, the qur’anic message is expressed in plain Arabic language, simply because God always considers the language of the people to whom a messenger is sent. “We never sent a messenger but with the language of his people, that he might make it clear for them.” (14:4) It is then not likely that the Qur’ân presents literally and exclusively the Word of God. According to this assumption, the Word of God would be limited to the Qur’ân only, thus excluding previous scriptures from the same right of presenting the Word of God in their own original languages. This will automatically lead one to hold Arabic to be a sacred language, as has been in fact been done, at least by the Arab Muslims, a development in Islamic thought that Izutsu was unable to understand or to explain.

The Qur'ân is then one manifestation of the Word of God given through inspiration to the Prophet Muhammad through the mediation of the archangel Gabriel. Thus, we can safely distinguish between three aspects of the Qur'ân, namely its content, its language, and its structure. There should not be any disagreement that the divinity of the Qur'ân is confined to its source. The content, however, is strongly correlated with the linguistic structure, which is culturally and historically determined. In other words, if the divine content of God's Word has been expressed in human language, it is the domain of language that represents the essential human dimension of all scriptures in general and the Qur'ân in particular.

From Orality to Textuality: Canonization

It should be obvious by now that the Qur'ân was originally orally transmitted. It is explained everywhere in Islamic literature that the Holy Spirit first used to convey or inspire some verses to the Prophet during each session of revelation and that the Prophet used to recite them afterwards to his companions.

These verses, or passages, were integrated in chapters and were partially committed to some sort of written form, according to Islamic sources. It was after the Prophet's death that these chapters were collected, then arranged, and finally written down in a book, *al-mushaf*.

But in spite of being committed to written form, the Qur'ân was never dealt with as a written text in the daily life of the early Muslim community. It had to wait till the age of printing to be considered as such. Even now, with the Qur'ân being a printed text, what is more important for every Muslim is the memorization of the Qur'ân by heart and the capability to recite it according to the classical principles of recitation, *tajwîd*.

The human dimension is more obvious when we take into consideration these two facts: first, that the Qur'ân was revealed in installments, *munajjam*, and, second, that the process of canonization depended on human maneuver. Being revealed portion by portion, the Qur'ân responded to community needs and demands. Providing answers to community questions, much of the legal aspect of the Qur'ân was gradually articulated, thus reflecting the dialectical relationship between God's Word and human interest.

The other aspect of the human impact on God's Word can be seen in the process of canonization, which was not limited to the application of the diacritical points and the vowel signs to the originally unreadable text produced during the time of the third caliph and

known as the Uthmanic *mushaf*. The canonization of the Qur’ân also included the rearrangement of the qur’anic verses and chapters in their present order, which is not the same as chronological order. Since the Qur’ân represents a sphere of communication between God and man, the two dimensions of divinity and humanity were the working dynamics in the process of canonizing the Qur’ân. Rearranging the verses and chapters of the Qur’ân in a non-chronological order could be re-examined in the light of this presupposition. It was, after all, a process of integrating texts, which were revealed on different historical occasions, in one text. It was, in other words, a process of transforming the recited Qur’ân into a readable book, *kitâb*, following the development expressed in the Qur’ân itself.

It is important here to refer to the impact of such rearrangement in partially demolishing the historical and occasional context of every portion of revelation, thus elevating its semantic structure above the original reality from which it emerged. Nevertheless, the original content of the Word of God in its unknown absoluteness – I mean before it became expressed in Arabic – is divine and sacred, while its manifested expression is neither sacred nor divine. Whether one follows the Mu’tazilite doctrine of the “creation of the Qur’ân” or prefers the Ash’arite doctrine, the conclusion is the same: the Qur’ân we read and interpret is by no means identical with the eternal Word of God.

Toward Qur’anic Hermeneutics

The Qur’ân is a “message” revealed by God to man through the Prophet Muhammad, who is the Messenger of God and who is human himself. The Qur’ân is very clear about this. A message represents a communicative link between a sender and a receiver through a code or linguistic system. Because the sender of the Qur’ân cannot be the object of scientific inquiry, the analysis of the contextual reality and culture of the qur’anic text is the only avenue to detect the message. Reality is the socio-political conditions of the actions of those who were addressed by the text and of the first receiver of the text, the Prophet and Messenger of God. Culture, on the other hand, is the world of conceptions, which are embodied in the language, the same language in which the Qur’ân is also embodied. In this sense, to begin with the contextual cultural reality in analyzing the qur’anic text is in fact to start with empirical facts.

The analysis of such facts can lead to a scientific understanding of the Qur’ân. It should be very obvious and clearly understood and needs no further proof to say that the Qur’ân is a cultural product. However, the matter is more complicated, because being a cultural

product is only one side of the text, the side of its emergence as a text. The other side is that the Qur'ân has become a producer of a new culture. In other words, the Qur'ân first emerged as a text from within a specific socio-cultural reality embodied in a specific linguistic system, Arabic, and, second, a new culture gradually emerged out of it. The fact that the qur'ânic text was understood and taken to heart has had irreversible consequences for its culture. Speaking about the Qur'ân as a message means that, although embodied in the Arabic linguistic system, the qur'anic text has its own peculiarities. As a unique text, it employed some special linguistic encoding dynamics to convey its specific message.

It will always be necessary, however, to analyze and interpret the Qur'ân within the contextual background in which it originated. In other words, the message of Islam could not have had any effect if the people who first received it could not have understood it; they must have understood it within their socio-cultural context; and by their understanding and application of it, their society changed. The understanding of the first Muslim generation and the generations to follow should not be considered by any means final or absolute. The specific linguistic encoding dynamics of the qur'ânic text always allow an endless process of decoding. In this process, the contextual socio-cultural meaning should not be ignored or simplified, because this "meaning" is so vital in indicating the direction of the "new" message of the text. Having the direction will facilitate moving from the "meaning" to its "significance" in the present socio-cultural context. It will also enable the interpreter to correctly and efficiently extract the "historical" and "temporal", which carry no significance in the present context. Since interpretation is the other inseparable side of the text, the Qur'ân, being decoded in the light of its historical, cultural, and linguistic context, has to be re-coded into the code of the cultural and linguistic context of the interpreter. In other words, the deep structure of the Qur'ân must be reconstructed from the surface structure. Subsequently, the deep structure must be rewritten in another surface structure, which is that of today.

This entails an interpretive diversity, because the endless process of interpretation and re-interpretation cannot but differ in time. This is necessary, because otherwise the message degenerates and the Qur'ân will be always subject to political and pragmatic manipulation. Since the message of Islam is believed to be valid for all humankind, regardless of time and space, diversity of interpretation is inevitable. The validity or the invalidity of a specific interpretation is to be judged according to certain norms. The first is the awareness of the difference between the original contextual "meaning", which is almost fixed because of its historicity, and the "significance", which is changeable. The second norm is the

necessity for the significance to be strongly related and rationally connected to the meaning. A valid interpretation is only possible as long as it does not violate these two methodological norms in order to jump to some “desired” ideological conclusions. If the text is historical though originally divine, its interpretation is absolutely human.

THE EVOLUTION OF LANGUAGE¹

TECUMSEH W. FITCH

In 1866, the Linguistic Society of Paris issued a ban on all further discussion of the evolution of language. At the time, the ban seemed justified: the almost complete lack of relevant empirical data meant that the field was dominated by unfettered speculation, some of it bordering on fantasy. This threatened to undermine the reputation of the then-young field of linguistics. Unfortunately, however, the poor reputation of discussions of the evolution of language has continued to the present, with at least two negative consequences. First, the evolution of one of the most fascinating aspects of human biology, one which is arguably the core capability of our species, remains very poorly understood (indeed, David Premack called the evolution of language “an embarrassment for evolutionary theory”, and his opinion seems widely shared). Second, the peripheralization of the field has seemed to provide a continuing license for unfettered speculation of the sort that led to the ban in the first place. The purpose of this talk is to argue that neither of these consequences is defensible today. The amount of empirical data relevant to the evolution of language is now considerable, flowing from a diverse set of disciplines including animal behavior, theoretical and comparative linguistics, neuroscience, anthropology, evolutionary theory, psychology, neuroscience, and bioacoustics. Indeed, this database is so vast and rapidly changing as to be beyond the mastery of a single individual. In particular, comparative data (data based on other living species) provides a rich but underutilized source of insights and ways to test evolutionary hypotheses. In fact, even a relatively cursory examination of the comparative data serves to call into question some of the most common assumptions about the evolution

¹ This talk was given on April 9, 2003 at the Wissenschaftskolleg zu Berlin as an evening colloquium. Because I gave the lecture spontaneously, without a written text, the text is an overview covering the main points I discussed. It was written several months afterward. This summary omits all of the empirical data presented, descriptions of the videos shown or sounds played, and all references.

of language. Thus, it seems that the time is ripe for the empirical study of the evolution of language to come of age.

I want to illustrate the value of the comparative approach by focusing first on the evolution of speech. Speech is an unusual capacity of our species, and no other primate has vocal capabilities (particularly in the realm of vocal imitation) that even approach those of a two-year-old child. The evolution of speech can and should be considered separately from that of language *per se*, because language is potentially expressible via many different sensory channels (the existence of writing, or signed languages, demonstrates this). Nonetheless, speech is used by all normal human communities as the primary vehicle for language and bears several indications of being a special adaptation. Because the speech signal is an objective, measurable entity and because speech production is well understood, our understanding of speech evolution is relatively advanced compared with other aspects of language evolution.

For many years it has been suspected that a crucial speech-related difference between humans and other animals was a descended larynx. In most mammals the larynx is located high in the throat and can be inserted into the nasal passages during breathing. Indeed, a newborn human infant starts life this way. This allows infants and many other mammals to breathe (through the nose) and swallow (through the mouth) simultaneously. However, early in life (starting at around three months), the human larynx begins to descend toward the lungs, pulling the tongue root with it. Although this presumably increases our risk of choking considerably (everything an adult human swallows must pass over the larynx), the descent of the larynx and tongue root also makes our vocal tract more versatile and allows us to produce speech sounds that would be impossible with a larynx in the normal mammalian position. Because several of these speech sounds are found in all human languages (e.g. the vowels in “beet” and “boot”), the descent of the larynx has been considered a unique human characteristic necessary for modern human speech and a major turning point in the evolution of our species.

But surprisingly, this conclusion was based on very little comparative data. Our prior knowledge of animal anatomy was derived from dead, formalin-fixed specimens that provide an inadequate indication of the physiology of the living animal. I thus set out to discover what animals do with their larynges during vocalization (which is what really matters, acoustically speaking). Working with A. W. Crompton at Harvard, I was able to film animals vocalizing (dogs, pigs, goats, and cotton-top tamarin monkeys). To our great surprise, although all of these animals do engage the larynx in the nasal cavity during quiet

breathing (as suggested by old anatomical studies), they lower the larynx during loud vocalizations, sometimes by a considerable distance. For example, during barking, dogs lower the larynx almost to their collar and thus for a moment attain a vocal anatomy quite similar to that of humans. These data suggest that temporary descent of the larynx during loud vocalization (presumably to increase the loudness of calls, which would be muffled if they passed through the nose) is a primitive mammalian characteristic, shared with most species.

However, the larynx in an adult human is *permanently* lowered, unlike in most mammal species. Thus, the permanently descended larynx is still arguably unique to our species. This idea also turns out, on examination of relevant comparative data, to be incorrect. Working with the French biologist David Reby, I was able to show that adult males in several deer species (red deer *Cervus elaphus* and fallow deer *Dama dama*) have a permanently descended larynx. A few years later, we now know that humans and deer are joined in this odd club by all the big cats (lions, tigers, leopards, and jaguars) and by koalas. Because none of these species use their descended larynx in the service of speech, I have proposed that the descended larynx in other animals serves the purpose of exaggerating the impression of size conveyed by vocalizations by lowering their formant frequencies. This hypothesis is grounded in considerable acoustic and anatomical data. Given that these same principles apply equally well to humans, it is possible that the original force driving the descent of the larynx during human evolution may had nothing to do with speech or language, but instead have simply served a size-exaggerating role, as for other animals. Only later in our evolution did we capitalize on this preadaptation to produce the wider range of phonemes that the descended larynx allows. This hypothesis is supported by the fact that the human larynx undergoes a second descent at puberty, but only in males. Given that this leads to no increase in the speech capabilities of teenage boys, the only plausible explanation is that this second laryngeal descent serves the same function in men as the descended larynx does in deer: to create an exaggerated impression of size (like the beard and broad shoulders developing at the same time).

Several conclusions can be drawn from this research. First, it is pointless to claim that a feature is “uniquely human” before a thorough search for the trait has been conducted throughout the animal kingdom. Though this is logically obvious, it is quite surprising how ready humans seem to be to conclude that some important human trait is unique to our species, even without looking at other species and without noting how often this mistake has occurred in anthropology and the cognitive sciences. Second, the existence of comparative data can provide a rich testing ground for hypotheses about evolution. If we

narrow our view to human evolution alone, any speculation seems reasonable, but once we include animal data (in effect examining the outcome of countless “experiments of nature”, run over millions of years by evolution), the number of plausible hypotheses consistent with the data becomes quite small. Thus, our comparative database must be extended and considered seriously, if our understanding of the evolution of speech and language is to progress.

To highlight the promise of comparative research in understanding speech, I will discuss an important unsolved problem: the evolution of our ability to vocally imitate. Humans learn to produce new sounds based on the utterances of others and excel at this ability from a very early age (indeed we are all better as children than as adults). Vocal imitation is a crucial prerequisite for forming the large and open-ended vocabulary without which speech would be of limited use. Surprisingly, nonhuman primates have virtually no ability to imitate vocalizations (and indeed imitation skills in general are rudimentary in primates: “monkey see, monkey do” is a highly misleading bit of folk ethology). A chimp, raised in diapers alongside a human baby, will not spontaneously learn to say any words at all, and even with diligent reinforcement and teaching can produce only the poorest imitation of a few monosyllabic words. In sharp contrast, many bird species, dolphins and whales, and some seals are gifted vocal imitators. The abilities of mynahs or parrots to imitate speech are well-known. Less well-known is the story of Hoover, an orphaned harbor seal pup who was raised by a Maine fisherman and then donated to the New England Aquarium in Boston. At about five years of age, when he attained sexual maturity, Hoover started to produce speech, which not only was immediately recognizable as English but duplicated the dialect of his original caretaker. Research on birdsong has already catapulted songbirds to the forefront of progress in understanding vocal learning, and we now know that genes are being turned off and on and new neurons being born in the brains of birds as they learn their species-specific song. Thus, perhaps nonintuitively, the best place to look for a better understanding of the evolution of this crucial requirement of spoken language is not our nearest relatives (chimpanzees or other primates), but much more distantly related species such as dolphins, birds, or seals.

For the second part of this discussion, I will turn to the phylogeny of language, focusing on the two key properties of meaning and syntax. Through what process did these aspects of language evolve in our species? Although the very nature of this question might seem to render such discussion irredeemably speculative, I will argue that, even here, the comparative approach provides a crucial, and powerful, tool for evaluating evolutionary

hypotheses. It is not difficult to find comparative data that exclude statements commonly made in the speculative literature. For instance, it is often stated that the assumption of upright posture automatically led to a descended larynx, and this is sometimes quoted as if it were a self-evident fact. But the existence of many species that have upright posture but lack a descended larynx (including birds, kangaroos, and many arboreal primates) suffices to reject this hypothesis. Indeed, it seems that many of the hypotheses that are currently on offer in the literature can be tested and enriched by taking comparative data into account.

Take, as a crucial example, the evolution of propositional meaning in language. By “meaning” I mean our ability to intentionally transmit, honestly and informatively, arbitrarily complex thoughts from one individual’s brain to another. The fact that we sometimes use language dishonestly must not obscure the fundamental fact that language can be used truthfully. This differentiates language from the vast majority of utterances that animals produce, particularly the most complex animal signals (like bird- or whale-song): as far as we can tell, these signals convey no propositional meaning beyond basic information (species, location, quality) about the signaler. How could the capability to convey propositions have evolved? What selective pressures could have favored such an ability? Many researchers have assumed that sexual selection could have sufficed, supposing that choosy mates (presumably females) would automatically prefer informative vocalizers over non-informative ones. This suggests that such mate choice would automatically drive more complex and ever more informative communication systems. However, a vast literature on sexual selection and sexually-selected communication systems is incompatible with this assumption. In fact, both theoretical considerations and a mass of empirical data suggest that the very nature of sexual selection drives sexually-selected signals inevitably toward exaggeration, false bluster, and outright deceit. Furthermore, sexual selection alone is clearly inadequate to explain the evolution of language: it is falsified by two everyday facts. First, sexually-selected traits are typically much more pronounced in the displaying sex. In mammals, virtually universally, this means males (hence it is males that sport antlers, manes, and bright colors, males that perform elaborate displays, and males that do the singing among most birds, whales, and seals). However, human language abilities are sexually egalitarian and, if anything, more highly developed in females. Second, sexually-selected traits are almost always expressed only at puberty, but language is remarkable for its precocity: a human ten-month-old already has remarkable language skills. Thus, from a

comparative perspective, it is clear that these facts are incompatible with the notion that sexual selection could drive meaningful communication.

I have proposed an alternative that, although it seems intuitive, appears to have remained unexplored by previous theorists. The idea is simple: that propositional meaning evolved in a context of communication among kin and particularly between parents and their offspring. I call this idea the “mother tongues” hypothesis. Primates in general and humans and apes in particular have an extremely long childhood, during which the offspring are completely dependent on their parents. Because of this, each individual offspring is of great importance in species of our hominid line. Indeed, chimps appear to be barely able to maintain current population levels, given their slow birthrate, and our early ancestors presumably faced a similar situation. Thus, a unique feature of the hominid line that differentiates us from other animals with complex vocalizations like birds or seals is the high premium on the individual offspring combined with a very long period of childhood learning, when a huge amount of information can be passed from parents to offspring. The animal world offers us ample testament that kin selection can drive parent/offspring communication to become honest, meaningful, and informative. Indeed, one of the few examples of propositional meaning in animal communication is alarm calls: vocalizations made to alert conspecifics, typically close kin, of the proximity of a predator. These calls seem to have evolved in many different species including birds, primates, and rodents largely in a context of kin selection. Perhaps the most striking system of kin communication is the dance language of honeybees, which allows one honeybee to convey highly accurate information about the location and quality of food, shelter, or water to another honeybee, invariably her sister (since all the bees in a hive share the same mother). The mother tongues hypothesis builds upon this comparative data, and unlike the sexual selection hypothesis, it is compatible with current evolutionary theory. What’s more, two of the peculiarities of language are obviously understandable within this framework: the young age at which language acquisition starts, and the slight advantage of women’s linguistic abilities over men’s.

In closing, I want to consider an aspect of language that many commentators consider most central and most unique: syntax. I use this term, as do most theoretical linguists, to single out the particular and very highly-developed human ability to combine low-level units into hierarchically-structured larger units (syllables into words, and words into sentences). Syntax entails the ability both to perceive and learn the complex structure inherent in other’s utterances and to generate novel, structured utterances oneself. This ability is

critical if we are to be able to create structures of adequate complexity to convey complex thoughts. Note that syntax goes far beyond simple rules of concatenation, or word order. Joining utterances together in a sequence is a commonplace in animal communication, and some empirical evidence supports the idea that different orders are interpreted differently by listeners. However, human syntax generates hierarchical structures that can be mapped onto structured meanings, going far beyond simple word-order rules. Such hierarchical structures, typically diagrammed by linguists with tree diagrams, are crucial in all human languages. Often this structure is not denoted via word order: in German, for example, such structures are indicated mainly by grammatical inflection (the infamous “der” vs. “den” vs. “dem” distinctions), and word order can be varied for thematic emphasis. I now will turn to the question of how such structure-making abilities might have evolved.

Contemporary theorists of language evolution generally agree that it is impossible to explain language evolution via a single factor. Thus, most of the theories currently in the offing are what I call “dual stage” theories, which posit an intermediate stage of hominid evolution in which some sort of “protolanguage” evolved and was selected and perfected. Beyond this basic agreement, however, theories vary considerably. One popular theory, advanced by Étienne Bonnot de Condillac and lately championed by Michael Corballis, is that early language was gestural, rather than (or at least more than) vocal. However, this theory leaves unexplained how the transformation to a fully vocal form (speech) took place, or what might have driven it, and adds nothing to the search for the path to meaning or to syntax. A second theory, promulgated by Derek Bickerton (who coined the term “protolanguage”) suggests that, quite intuitively, protolanguage involved meaningful words, perhaps with quite a large vocabulary, but with no syntax. This fits our prejudice of how cavemen spoke: “Og big” or “big Og” meaning the same thing. While popular, this theory is not particularly explanatory: it takes the origin of meaning for granted, while leaving the origin of syntax quite mysterious. (Bickerton suggests that some aspects of syntax may have been inherited from a kind of primitive economic scorekeeping: who gave what to whom?) The intuitive appeal of the “words-first” theory derives mainly from the fact that this is more or less what children do ontogenetically. However, this appeal may be superficial. First, it is unlikely that a child’s one-word utterance (say, “up”, used as a request to be picked up) in fact maps onto an adult’s understanding of that word (as a preposition of place). Second, human babies are born with modern human brains, already designed by long evolution to learn modern language. There is no guarantee in this case that “ontogeny recapitulates phylogeny” and indeed good reason to doubt it. Thus, despite the intuitive

appeal of “words-first” theories (which form the general class of “synthetic” theories of language evolution), it seems worthwhile to consider some alternatives.

A broad class of alternative theories, termed “analytic” theories, put the intuitive cart before the horse, suggesting that complex structures *preceded* meaning in our evolution. The particular hypothesis that I find most plausible and most consistent with the comparative data was advanced briefly by Rousseau and later independently elaborated by Darwin. It is that protolanguage, rather than being a simpler version of modern language with less structure and simpler propositional capacity, was structurally quite complex but lacked meaning almost entirely. In short, protolanguage was more like music than like modern language. Quoting Darwin, “primeval man, or rather some early progenitor of man, probably first used his voice in producing true musical cadences, that is in singing”. While I believe the limitation to singing is too strict (the production of rhythms, with hands or other objects, is equally important), I find an updated version of Darwin’s hypothesis, which I call the “prosodic protolanguage” hypothesis, rather compelling. According to this model, both modern music and modern language are descended from an ancestral ability that had features in common to both: “prosodic protolanguage”. These features include considerable structural complexity, a dependence on the auditory channel, the ability to convey gesture and emotion, and a thoroughly cultural basis (they are both learned by imitation and transmitted across many generations). The crucial missing feature in this prosodic protolanguage was, by hypothesis, the ability to convey propositionally-structured meanings. This hypothesis suggests that complex syntactic structure (paralleling that found in music) preceded the use of this structure in meaningful, propositional discourse. Thus, the first step in language evolution was to evolve a complex, songlike communication system, quite analogous to that of birds or whales. Then, the work of mapping these complex sonic structures onto meanings happened in a second stage, driven, as I have already argued, by kin selection.

There are several reasons that biologists should find this hypothesis appealing. First of all, we are positing a theoretical entity (prosodic protolanguage) that is similar in form to known, existing communication systems like birdsong. It is clear that such songlike systems, lacking in meaning, can evolve, because it has happened repeatedly in many independent lines during vertebrate evolution. Sexual selection provides an obvious way to ratchet up the complexity of such systems. Thus, studies of bird and whale song can provide valuable empirical data for understanding the evolution of complex sonic structures in human language and the mechanisms underlying such structural capabilities. Further-

more, there is no theoretical problem with supposing that the evolution of prosodic protolanguage was driven by sexual selection, as in bird- and whale-song. According to this theory, it was only when the selection regime switched from sexual selection to kin selection that children needed to have their language abilities come “on line” at an early age, instead of at puberty. However, note that female birds of many species can and do sing, both alone or in duets with males, and that in “singing” primates like gibbons, both males and females sing (in complex duets that serve joint territorial defense). Thus, even the initial stages of prosodic protolanguage need not have been male-dominated.

Thus, as for vocal imitation, it may be that the best place to look for hierarchical structural abilities is not in nonhuman primates, but in birds or whales. Indeed, with Marc Hauser, I have gathered data suggesting that one species of nonhuman primate (cotton-top tamarins) are quite limited in their ability to perceive hierarchical structures in sounds. While other primates (e.g. chimps) may be more capable (the research has yet to be done), the most likely place to look for structure-parsing abilities is in species that themselves produce hierarchically-structured vocalizations, like some songbirds. Note, however, that whatever form the hierarchical structure in birdsong takes, and this remains poorly understood, it will still be considerably simple than human syntax at the sentential level, because of its lack of meaning. Such phenomena as movement or anaphora, which form the central problems in syntax for theoretical linguists, require a mapping between sound and meaning that neither birdsong nor, by hypothesis, prosodic protolanguage has. Thus, the level of syntax I am positing here is akin to phonological syntax in modern languages.

A second advantage of the prosodic protolanguage hypothesis is that, rather than relying on a hypothetical, long-extinct protolanguage that cannot be studied experimentally, this hypothesis directs our research attention quite squarely to music. Music is a human universal, and a rather puzzling one for evolutionary biologists given its tenuous connection to anything obviously adaptive. However, if we consider music as a kind of “living fossil” of an earlier stage of our evolution, many of its curious aspects become understandable. Unlike language, musical ability varies immensely among individuals, and although no human culture lacks music, many individuals lack even basic musical abilities. Despite this, most people enjoy music and indeed are willing to spend considerable time and money to experience it (as might be expected if music played a more crucial role in our recent evolutionary history). Comparative study of musical traditions (ethnomusicology) will teach us about the various contexts in which music is used (e.g. sexual selection vs. group synchronization or solidarity) and can provide important data toward an eventual “universal

grammar” of music. Methodologically, the variability of musical skill makes it perfect for empirical research on the genetic, neural, and behavioral correlates of musical ability: it is quite easy to find normal humans who either excel at or lack musical ability. This is in sharp contrast with language, where a “normal” human lacking language is virtually an oxymoron. It is important to stress that modern music is NOT identical to prosodic protolanguage, any more than modern chimps are identical to our shared ancestor with chimps (they have been separately evolving for six million years, just like us). With this caveat in mind, however, the study of our human “music faculty” can be expected to teach us much about the language faculty. Even if the prosodic protolanguage hypothesis is eventually falsified (if for instance, music and language are found to rely on fundamentally different computational mechanisms, implemented via disjunct neural mechanisms and controlled by independent genes), we will have learned much of value by exploring it.

To summarize my phylogenetic argument, I have argued that we can explain three critical components of language evolution – vocal imitation, syntax, and meaning – via a dual-stage hypothesis. First, vocal imitation and a basic combinatoric syntax (with hierarchical structure but no meaning) evolved during an initial protolanguage stage to create a relatively complex prosodic protolanguage that was shared in a community, passed on and elaborated over many generations, and probably played a role in mate choice, group solidarity, and perhaps synchronization of group activities. Although language does not fossilize and it is hard to say much about the precise timing of this stage, it is tempting to speculate that such a prosodic protolanguage characterized *Homo erectus*, the first hominid to expand out of Africa and to occupy most of the Old World. To the extent that sexual selection played the crucial role during this stage, comparative data suggest that males would have dominated this domain and that productive skills would be expressed around puberty. At the end of this evolutionary period, the stage was set for the evolution of true language: learned sounds of adequate complexity existed, along with complex thoughts to be expressed, but the connection between the two had not been made. In the second stage of language evolution, we entered a completely different “mother tongues” selective regime. Here, the need to communicate propositional information to children, thus increasing their chance of survival, predominated. This led to the precocial, female-biased distribution of contemporary linguistic skills. While the protolinguistic stage in this theory is closely analogous to birdsong, the evolutionary move to the second stage was driven by the low birthrate and peculiarly long period of childhood dependence typical of the human/ape line (it is hard to imagine that the month-long nestling period of most birds provides

adequate scope for detailed tutelage: from an evolutionary viewpoint, it is easier to lay a few more eggs or gather a bit more food).

To end, I want to return to the Paris Linguistic Society's ban. I hope to have convinced you in the course of this talk that there are many sources of solid empirical data that are directly relevant to language evolution. Foremost among them are comparative data, gathered from the many other living species that share our planet and are related to us at varying degrees. Thus, I think the "data-poor" situation that led to the century-old ban on the discussion of language evolution is over. Future workers in this field need to overcome the old assumption that discussions of language evolution provide an automatic license to speculate freely and to entertain whatever hypotheses might seem intuitively appealing. On the contrary, the contemporary database is already rich enough to exclude many currently popular theories, and we stand to learn much more if researchers in this field focus on gathering relevant comparative data. Convergent evidence from ethology, linguistics, neuroscience, and bioacoustics, along with the constraints imposed by modern evolutionary theory, will allow us to build theories that are consistent with existing data and point the way to gather new data that can test (and potentially refute) these theories. Although many of the ideas I have advanced above may turn out to be incorrect, they are at least consistent, and (more importantly) they highlight relevant areas for future empirical research. Thus, I hope you will agree that language evolution is not only a fascinating topic, but a topic ripe for empirical scientific exploration. I believe the next ten years of research on this topic, central to what it means to be human, could be quite exciting.

WAS HAT AUS PRIMATEN EINEN MENSCHEN GEMACHT?
DIE MOTORISCHE INTELLIGENZ¹
GERHARD NEUWEILER

Einleitung

Das Thema dieses Aufsatzes, das seit Darwins Zeiten bis heute auf der Tagesordnung der Biologen geblieben ist, hat zwei Väter: den Verfasser eines Lehrbuchs für vergleichende Neurobiologie – mich selbst – und den Komponisten György Ligeti.

Mein Drang, ein dickes Buch zu verfassen – der Sohn war längst geboren und der Baum gepflanzt –, führte mich in die vom Universitätsalltag abgeschiedene und anregende Atmosphäre des Wissenschaftskollegs. Ein Lehrbuch schreiben? Lohnt es sich denn, in einer Zeit der uferlosen Verfügbarkeit jeglichen Wissens bei Google im Internet überhaupt noch ein Lehrbuch zu schreiben? Im Übrigen gibt es in der Neurobiologie schon gute, dicke Lehrbücher, herausgegeben von Wissenschaftlern mit berühmten Namen. Wer diese Kompendien durchblättert, stößt alle zwanzig bis dreißig Seiten auf einen neuen Autor, einen Experten, der „sein“ Fachkapitel geschrieben hat, und jedes Mal muss man sich in einen neuen Denkstil und in neue Idiosynkrasien einarbeiten. Der „Kandel“², die Bibel der Neurobiologen, wurde von 29 Autoren geschrieben. Als Lehrbuch mag ich deshalb diese Multiautoren-Kompendien nicht.

¹ Gerhard Neuweiler, Zoologe an der Ludwigs-Maximilians-Universität München, war Fellow des Wissenschaftskollegs 2000/01 und ist seitdem Mitglied seines Wissenschaftlichen Beirats. Sein Buch *Vergleichende Tierphysiologie*. Bd. 1: *Neuro- und Sinnesphysiologie*. Berlin u. Heidelberg, 2003 ist am Wissenschaftskolleg entstanden. In seine Überlegungen sind Gespräche eingegangen, die er mit György Ligeti während des gemeinsamen Aufenthalts geführt hat. Der Vortrag ist György Ligeti zu seinem 80. Geburtstag am 28. Mai 2003 gewidmet.

² Kandel, E. R., J. H. Schwartz und T. M. Jessell, Hrsg. *Neurowissenschaften*. Heidelberg: Spektrum-Verlag, 1995.

Mir schwebte ein Lehrbuch vor, das von der ersten bis zur letzten Zeile einen Grundgedanken durchhält. Ich folgte der These, dass die neuronalen Netzwerke in den Gehirnen das Gesicht der Evolution geprägt haben. Die Triebfeder der Evolution sind nicht die Gene, sondern die individuellen Dialoge zwischen Umwelt und Organismus. Um Missverständnissen vorzubeugen: Natürlich brauchen wir Gene für die Evolution, aber sie sind die Buchhalter, die Ergebnisse dieser Dialoge für künftige Generationen festhalten. Dieser immer währende, unermessliche Strom von Dialogen wird von den Neuronen geführt.

Diese Vorstellung von der Gestaltung der Evolution durch neuronale Systeme entspringt einer jahrzehntelangen vergleichenden Beschäftigung mit den Sinnen und Gehirnen der Tiere. Wenn ich Studenten von dieser Sicht der Evolution überzeugen wollte, musste ich mein zusammengetragenes Beweismaterial, von den neuronalen Welten der Quallen bis zu den Primaten, zwischen zwei Buchdeckeln selbst und alleine präsentieren. Das fordert allerdings den Mut und das Risiko heraus, auch Tatbestände einzubeziehen, die man aus dem eigenen Labor nicht kennt.

An diesem Punkt kommt der andere Vater des heutigen Abends ins Spiel. Eines der Nachbarappartements in der Villa Jaffé des Wissenschaftskollegs, wo ich schrieb, wurde von einem Komponisten bewohnt, György Ligeti. Da er damals schon gehbehindert war, habe ich ihn öfters begleitet. Bei solchen Gängen zeigte György Ligeti zwei Eigenschaften, die man weniger bei Künstlern als bei Wissenschaftlern erwartet: unstillbaren Wissenshunger und das Beharren auf exakten Antworten auf seine klaren Fragen. So entwickelten sich die gemeinsamen Wege, die öfters im Garten oder am Frühstückstisch von Reinhard's Landhaus in der Koenigsallee endeten, zu weit gespannten neurobiologischen Kollegs. Natürlich führten die Gespräche immer wieder auf die Frage, wieso das menschliche Gehirn so ungleich kreativer ist als das unserer nächsten Verwandten, mit denen wir doch nahezu alle Gene teilen. Als Biologe war mir klar, dass der entscheidende Unterschied zwischen Affe und Mensch nicht dort liegt, wo intuitiv gesucht wird, nämlich bei den kognitiven Fähigkeiten, unserer Assoziationskraft, unserer Logik und unserer Neugier, sondern in unserer motorischen Intelligenz, die auf Besonderheiten der Primatenmotorik aufbaut.

Die motorische Fähigkeit zu sprechen und die Fingerfertigkeit sind die beiden einzigartigen Eigenschaften, die Kulturen und Zivilisationen entstehen und unsere sprachlosen Verwandten in der Natur, im Tierreich zurückließen.

Was wüssten wir vom Gedankenreichtum eines Charles Darwin ohne die Sprachmotorik? Was wüssten wir von den musikalischen Ideen eines Komponisten, wenn sie nicht

niedergeschrieben wären und durch die Fingerakrobatik der Musiker zu Gehör gebracht würden? Nichts. Genauso wenig wie von all den Gedanken, Phantasien und Einsichten, die mit dem Gehirn, das sie dachte, zu Staub zerrannen, weil kein Zungenmuskel sie artikulierte, kein Handmuskel sie niederschrieb und keine Fingerwerke sie zu Gegenständen, Werkzeugen, Maschinen formten.

Wieso also sprechen und „handwerken“ wir und die Affen nicht? Das Insistieren György Ligetis auf präzisen Antworten zwang mich, die eingangs zitierten Nachschlagewerke zu wälzen und vor allem in der aktuellen Fachliteratur nachzuforschen. Was ich bei dieser Suche nach Antworten auf Ligetis Fragen, die im Titel dieses Aufsatzes zusammengefasst sind, gefunden und an Einsichten gewonnen habe, möchte ich im Folgenden berichten.

Grundlagen der neuronalen Bewegungssteuerung

Motorik ausgerechnet als Spezifikum der Menschwerdung? Wissen wir nicht alle aus eigener Anschauung, dass Tiere im Zweifelsfall schneller, geschickter, geschmeidiger springen, laufen, klettern als der Mensch? Bewegung ist das Privileg des Tierreichs und dieses Privileg wurde in der Erdgeschichte zu einer Vielfalt der Bewegungsformen, vom Fliegen bis zum Tauchen, in höchster Präzision perfektioniert. Auf der neuronalen Intelligenz dieser effizienten Fortbewegungsformen der Tiere baut unsere spezifische motorische Fähigkeit zu sprechen und zu manipulieren auf. Deshalb soll zuerst das generelle neuronale Programmier- und Kontrollschema dargestellt werden, das für das Sprechen genauso gilt wie für das Laufen, Schwimmen, Fliegen etc.

Wenn ein Fisch schwimmt, eine Raubkatze sich anschleicht oder ein Pferd galoppiert, sind kontinuierlich hunderte von Neuronen damit beschäftigt, in einer zielgerichteten Zeitfolge tausende von Muskelfasern synchron zu erregen und andere zu hemmen. Das räumlich-zeitliche Aktivitätsmuster dieser hunderten von Neuronen muss sich ständig nach vorgegebenem Plan ändern, wenn eine fließende Bewegung entstehen soll. Wer schreibt diese Partitur und wer führt sie auf? Eine Kaskade neuronaler motorischer Zentren, die im Rückenmark beginnt und im frontalen Kortex endet.

Das Grundprinzip neuronaler Bewegungssteuerung will ich am Beispiel des Beines erklären (Abb. 1). Das alternierende Strecken und Beugen von Gelenken ist das Grundelement jeder Fortbewegung und durch das Verbinden mehrerer Gelenkbewegungen entstehen mehr oder weniger grazile Bewegungen. Jedem Bewegungselement, in erster Linie

also den Gelenken, ist relativ nahe am Geschehen, also in der Wirbelsäule, ein lokales Nervennetz, ein so genannter zentraler Mustergenerator, zugeordnet. Er sorgt dafür, dass beim Bewegen die Beuger- und Streckermuskeln, Agonist und Antagonist, sich alternierend kontrahieren oder aber beim Halten Agonist und Antagonist sich gleichzeitig so kontrahieren, dass eine bestimmte Position eingehalten werden kann.

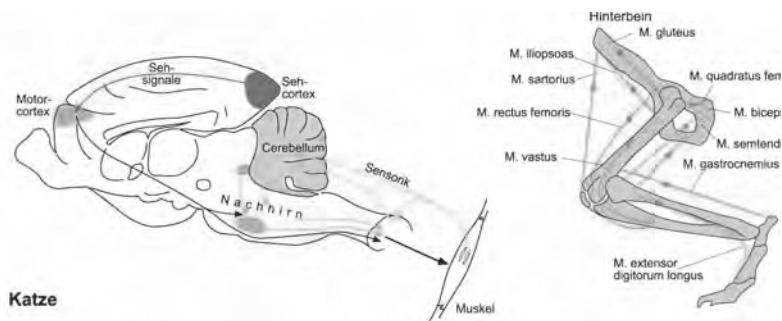
Eine Grundverschaltung des Mustergenerators erzeugt einen Wechselrhythmus durch reziproke Hemmung, das heißt die Neurone, die Beuger aktivieren, hemmen gleichzeitig die Neurone für die Streckermuskeln und umgekehrt. Dieser Rhythmkgenerator ist in ein Netz von Neuronen eingewoben, die den Grundrhythmus modulieren können durch Rückmeldungen von Sinnesorganen, die den Bewegungsrhythmus an Stolpersteine, Zieländerungen etc. anpassen. Ob der zentrale Mustergenerator alternierende Muskelbewegungen erzeugt oder ob die Motoneurone gleichzeitig feuern, um das Gelenk in einer bestimmten Position zu halten, entscheiden übergeordnete Bewegungszentren im Nachhirn.

Diese Mustergeneratoren einzelner Gelenke müssen zu einer kohärenten Gliedmaßenbewegung zusammengeführt werden. Das geschieht durch neuronale Koordination der Generatoren im Rückenmark untereinander, vor allem aber durch übergeordnete motorische Zentren im Nachhirn, die sensorische Rückmeldungen über den aktuellen Stand des Bewegungsablaufes mit berücksichtigen. Diese Nachhirnzentren geraten im Verlauf der Evolution immer mehr unter den Einfluss des Vorderhirns. Jede bewusste und absichtsvolle Bewegung hat ihren Ursprung im motorischen Cortex des Vorderhirns (Abb. 2). Jeder kennt aus Lehrbüchern und populärwissenschaftlichen Darstellungen den Homunculus, der sich über den motorischen Cortex erstreckt und angibt, wo die Neuronen liegen,

Abb. 1. Das Prinzip neuronaler Bewegungskontrolle. In Rückkopplungsschleifen sind zentrale Mustergeneratoren (grau, CPG) im Rückenmark, die einzelne Gelenke kontrollieren, mit übergeordneten, koordinierenden Zentren des Nachhirns (rot) verknüpft. Diese Nachhirnzentren geraten im Laufe der Wirbeltierevolution zunehmend unter den Einfluss des Motocortex (grün), der einerseits von initierenden Zentren des Vorderhirns beeinflusst und anderseits über die Sehcortices in die räumlichen Zusammenhänge des Handelns eingebunden wird. Das Cerebellum begleitet als lernender Zeitcomputer die zeitlich-räumliche Orchestrierung der Muskeln zu einer kohärenten, zielgerichteten Bewegung.

Oben: Die Lage der wichtigsten Bewegungszentren im Katzengehirn. Rechts: ein Hinterbein mit seinen wichtigsten Gelenken und Muskeln (blaue Pfeillinien).

Unten: In den zentralen Mustergeneratoren sorgen entweder gekoppelte Schrittmacherneurone (links) oder reziproke Hemmungen dafür, dass bei Bewegung die jeweiligen Antagonisten gehemmt bleiben (nach Neuweiler 2003).



Katze

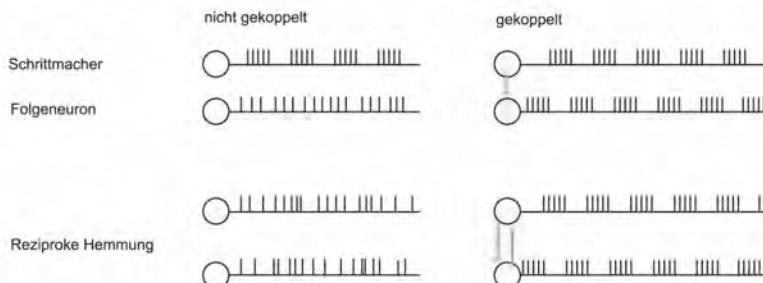
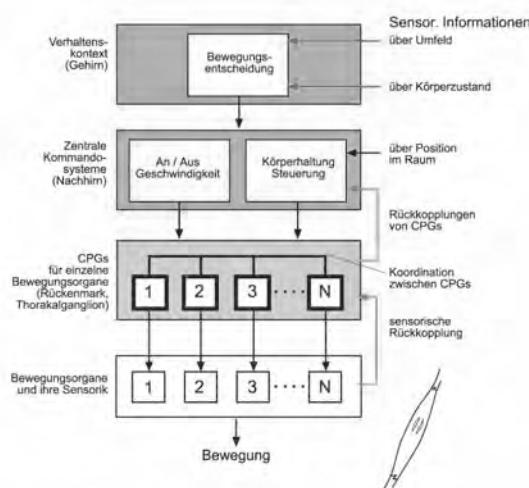


Abb. 1

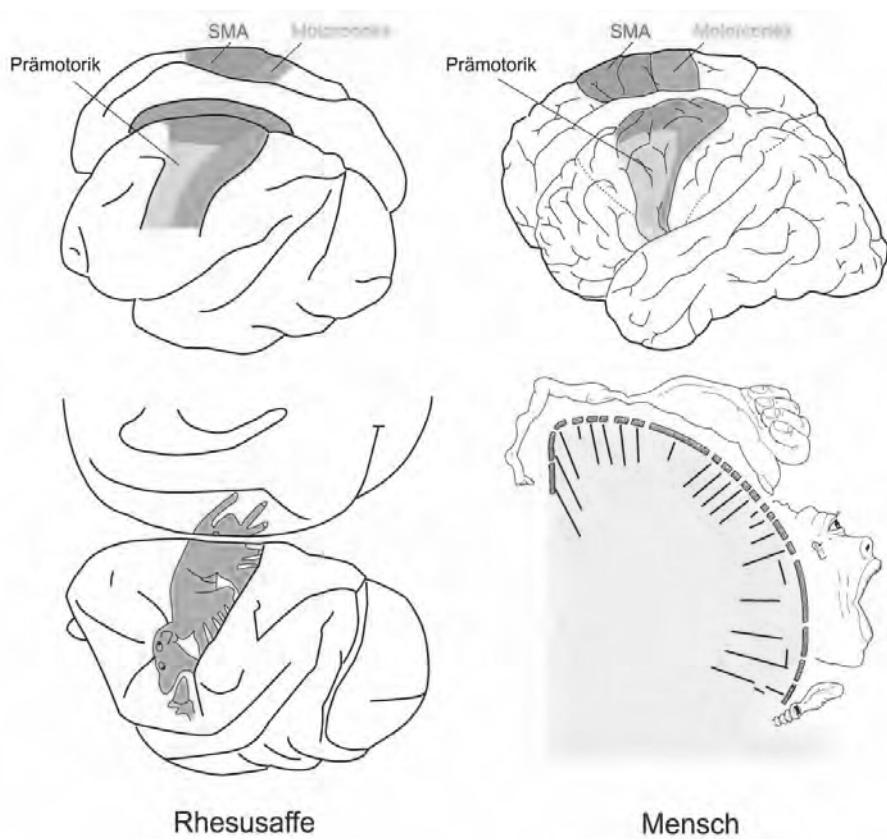


Abb. 2. Der Motocortex und prämotorische Areale (SMA supplementary motor area) bei Rhesusaffen (links) und Mensch (rechts).
Unten: Lage der Motoneurone im Motocortex, die Bewegungselemente der entsprechenden Muskelorgane steuern. Gegenüber den Affen sind beim Menschen die Motoneurone für die Hände und der Artikulation (Gesichtsmotorik, Zunge, Kehlkopf) riesig überrepräsentiert. Motorisch gesehen ist der Mensch ein „Manipulations/Sprech-Primat“ (aus Kandel et al. 2000).

welche die entsprechenden Muskeln kontrollieren. Die überdimensionale Repräsentation der Finger-, vor allem der Daumenmuskulatur und die riesige Darstellung der Zunge zeigen, dass beim Menschen die Muskeln des Sprechens und „Handwerkens“ so dicht innerviert sind wie bei keinem anderen Primaten.

Reizt man den Cortex an einer der Stellen elektrisch, so wird der entsprechende Muskel aktiviert. Wo kommen natürlicherweise die Erregungsprogramme her, die solche muskelspezifischen Neurone zu einem räumlich-zeitlichen Kontraktionsablauf, z. B. der Schulter-, Arm- Hand- und Fingermuskeln, orchestriert? Diese Programme stammen aus Cor texarealen, die unmittelbar vor diesem motorischen Cortex zu finden sind, den prämotorischen Arealen. Dort laufen Informationen aus den Sinnesorganen, aus der Motorik und von frontalen Assoziationszentren zusammen und dort entstehen die mentalen Absichten und die dafür benötigten zeitlich-räumlichen Bewegungsprogramme für Handlungen, die wir dann durchführen oder auch nicht. Für die beabsichtigte, zielorientierte Bewegung, die so genannte Willkürmotorik, gibt es also eine Hierarchie der Handlungsgenerierung (Abb. 1), die bei allen Säugetieren im prämotorischen Cortex beginnt und über den motorischen Cortex in die verwirrende Vielfalt von Nachhirnzentren führt, die ihrerseits im Rückenmark die Mustergenerator für die Gelenkmuskeln steuern.

Die lernende Zeitmaschine

Eine Bewegung erreicht ihr Ziel nur, wenn das zeitliche Ablaufmuster der vielen beteiligten Muskeln präzise nach Plan verläuft. Dabei kommt es nicht nur darauf an, welche Muskeln wie stark und in welcher Reihenfolge kontrahiert werden. Wenn eine Bewegung präzise und schnell ihr Ziel oder ihren Zweck erreichen soll, muss die Zeitrelation zwischen den Muskelaktivitäten, ihre Phasenbeziehung, auf Millisekunden genau orchestriert sein. Wenn ein Frosch sein Bein nach hinten kickt, sind zwar nur drei verschiedene Muskelgruppen aktiv. Die Phasenbeziehung, die Zeitrelation zwischen der Aktivität der drei Muskeln entscheidet, ob die Beine wie bei einem Schwimmer in der Mitte zusammenge schlagen werden, ob sie senkrecht nach hinten stoßen oder die Füße weit seitlich ausschlagen. Wenn man sich die Präzision und Vielschichtigkeit der Phasenbeziehungen nicht beim Froschbein, sondern bei einem Klavierspieler anschaut, z. B. wenn die zehn Finger von Pierre-Laurant Aimard über die Tasten springen, wenn er eine von Ligetis Klavieretüden spielt, so ist die Zeit/Raum-Komplexität eines solchen motorischen Programms schlicht nicht mehr vorstellbar.

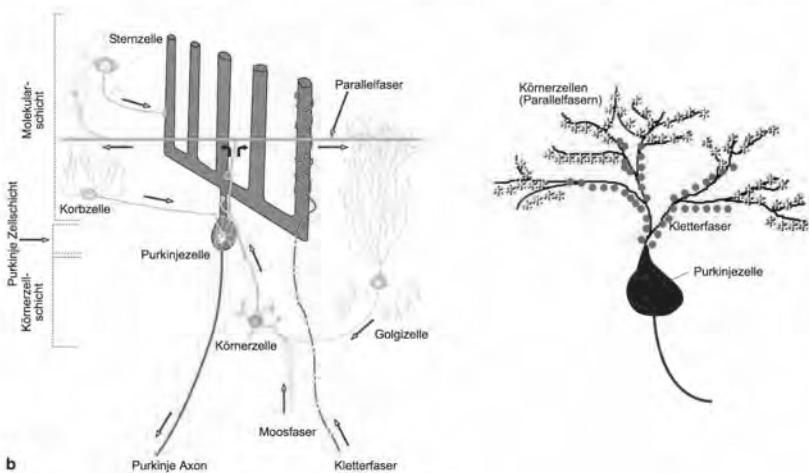
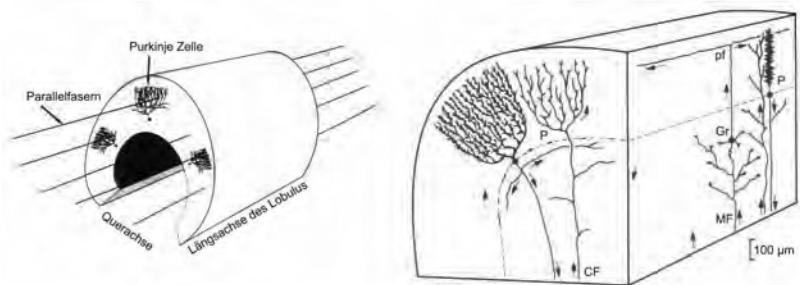
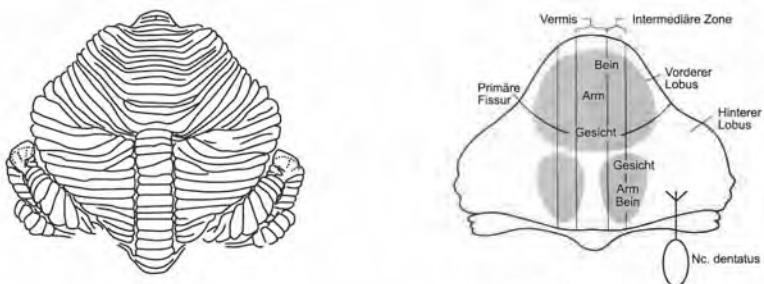


Abb. 3 a

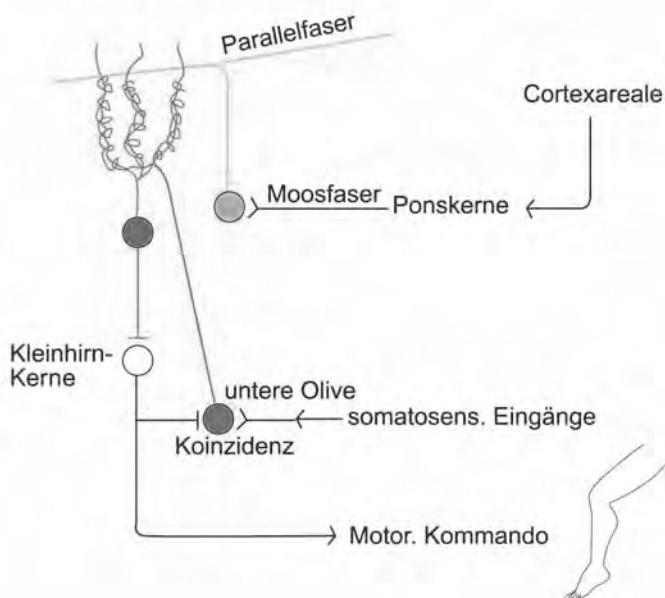
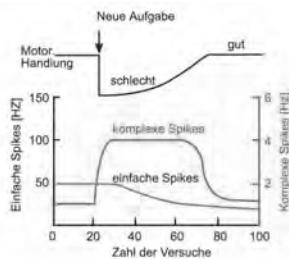


Abb. 3 b

Unsere Vorderhirne sind freilich nicht so genial, dass sie solche komplexen Zeit-Raum-Programme auf Befehl zur Verfügung stellen. Bewegungen sind komplex und fehlerbehaftet. Wir alle wissen, auch wenn es nur zu Muzio Clementi reicht, dass wir diese Finger- und Handbewegungen erlernen und wiederholend einüben müssen. Das gilt für ein Kind, das Gehen lernt, genauso wie für Jungtiere. Das intensive Spielen vieler Tiere verfolgt keinen anderen Zweck, als lebenswichtige Handlungsabläufe bis zur Perfektion einzuüben. Für die Fehlerkorrekturen beim Einüben und die Konservierung der schließlich perfekt ausgeführten motorischen Raumzeitpartitur, orchestriert im Millisekudentakt und von hunderten von Orchestermitgliedern – den Muskeln – aufgeführt, gibt es einen begleitenden online Zeitkontrolleur, das Kleinhirn (Abb. 3 a, b). Versagt das Kleinhirn, werden Bewegungen abgehackt, stockend und ungenau, und unser Sprechfluss zerfällt in zäh aufeinander folgende Einzelworte.

Bei allen Vorgängen, die einen komplexen zeitlichen Ablauf beinhalten, also bei allen Bewegungen, aber auch beim denkerischen Planen und selbst bei der Kognition, z. B. die

Abb. 3 a. Das Kleinhirn begleitet alle vom Cortex erstellten, komplexen Zeitprogramme, vor allem also die der Bewegungen.

Oben: Bei Primaten und beim Menschen sind die lateralen Areale der Kleinhirnrinde, wo die Gesichts- und Arm/Hand-Muskulatur repräsentiert werden, besonders groß.

Mitte: Das Verschaltungsschema zwischen Parallelfasern (u. a. corticale Bewegungsprogramme) und den Hauptzellen des Kleinhirns, den Purkinjezellen. Blau: Purkinjezellen, grün: Parallelfasern (= Axon der Körnerzellen), rot: Kletterfasern aus der unteren Olive, die korrigierende, sensorische Rückmeldungen vom aktuellen Stand der Bewegung liefern.

P Purkinjezelle, CF Kletterfaser, MF Moosfaser, Gr Körnerzelle, pf Parallelfaser.

Unten: Verschaltungsprinzip zwischen den verschiedenen Neurontypen (nach Neuweiler 2003).

Abb. 3 b. Verschaltungsschema zwischen Purkinjezellen (blau), den Parallelfasern (grün), die vom Cortex erstellte Programme einspeisen, und schließlich den korrigierenden Kletterfasern (rot) der unteren Olive. Die Kletterfasern verändern die Synapsenstärken zwischen Purkinjezelle und Parallelfasern so lange, bis in der unteren Olive die Kleinhirnäusgänge genau gleichzeitig (Koinzidenz) mit den Meldungen von den Bewegungsorganen ankommen. Dann verstummt die Kletterfaser und das in den Synapsen Purkinjezelle/Parallelfaser festgelegte zeitliche Bewegungsprogramm wird als richtig bewertet und festgehalten.

Oben: Wenn ein Tier eine neue motorische Aufgabe bekommt, wird es diese Aufgabe zunächst schlecht und mit der Zahl der Versuche immer besser durchführen. Erst wenn die Aufgabe gemäß corticalem Programm gut ausgeführt wird, verstummt die korrigierende Aktivität der Kletterfasern (rot, komplexe Spikes) und die Aktivität der Purkinjezellen verändert sich nicht mehr (blau, einfache Spikes).

Dauer von Reizen oder von Pausen abzuschätzen, Geschwindigkeiten zu vergleichen usf., wird das Kleinhirn als lernende Zeitmaschine in Schleifen zugeschaltet (Abb. 4). Diese Schleifen geben einerseits den unmittelbar durchzuführenden Bewegungsablaufplan vor, man spricht von Feedforward-Kontrolle, und wirken andererseits rückkoppelnd korrigierend auf die Bewegungszentren zurück. Solche Aktivitätsschleifen unterhält das Kleinhirn mit nahezu allen Gehirngebieten.

Das Kleinhirn besteht aus Abermillionen völlig gleichartiger Mikroverschaltungen. Dieser Computer (Abb. 3 a) aus parallel arbeitenden Mikroprozessoren übernimmt von Cortexarealen, wo die Bewegungsabsichten entstehen, das dort generierte räumlich-zeitliche Bewegungsprogramm und vergleicht es online mit der tatsächlichen, momentanen Bewegungsausführung.

Stimmen die sensorischen Rückmeldungen über die Ausführung mit dem beabsichtigten Programm nicht überein, d. h. unsere Hände machen z. B. beim Klavierspielen Fehler, so korrigiert das Kleinhirn die Bewegungsabläufe so lange, bis die neuronale Absicht und der motorische Ablauf identisch sind (Abb. 3 b). Durch Veränderungen an ihren Synapsen prägt sich das Kleinhirn den eingetübtten, nunmehr mentalen Absichten entsprechenden Bewegungsablauf ein, so dass der gebildete Bürger nach mehrwöchigem Üben nunmehr ohne bewusste Kontrolle der Fingerbewegungen die Goldberg-Variationen von Bach technisch fehlerlos spielen wird.

Der neuronale Mechanismus dieser phänomenalen, lernenden Zeitmaschine, die Bewegungsabläufe in Zeittakten von Millisekunden kontrollieren und behalten kann, ist bis heute nicht ganz verstanden. Das Grundelement des Kleinhirn-Mikroprozessors sind die sog. Purkinjeneurone, die topographisch geordnet die Willkürmuskulatur repräsentieren (Abb. 3 a, b). Die Nervenfasern der Purkinjezellen enden in den Kleinhirnkernen, die ihrerseits auf die spezifischen Muskeln projizieren, aber auch gleichzeitig dem Mentor im Cortex über Rückkopplungsschleifen berichten, wozu sie welche Muskeln veranlassen möchten. Über die so genannten Brückenkerne werden den Purkinje-Neuronen über Parallelfasern die im Cortex generierten räumlich-zeitlichen Programme zugespielt, so dass in der topographischen Muskelkarte, diejenigen Purkinjeneurone und damit diejenigen Muskeln in der richtigen zeitlichen Reihenfolge aktiviert werden, die zur Bewegungsumsetzung des Programms führen.

Die Rückmeldung über das, was sich an den Gelenken tatsächlich abspielt, erhalten die Purkinjezellen über die so genannten Kletterfasern (Abb. 3 a). Diese Kletterfasern spielen den Trainer des Kleinhirns, sie melden Ausführungsfehler. Sind an der Purkinjezelle die

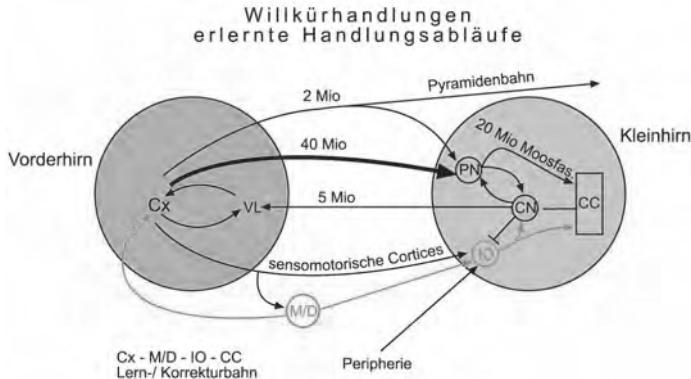


Abb. 4. In vorwärts und rückwärts koppelnden Schleifen ist das Kleinhirn mit nahezu allen Hirnteilen verbunden, besonders intensiv mit den motorischen Cortexarealen (Cx). Vom Cortex laufen ca. 40 Millionen Nervenfasern über die Brückenkerne (PN) und deren Moosfasern in die Kleinhirnrinde (CC). Die Rückschleife verläuft über die Kleinhirnkerne (CN) und den ventrolateralen Kern (VL) des Thalamus (Zwischenhirn) zurück zum Cortex. Eine weitere, wichtige Schleife läuft von den Cortexarealen über meso-/diencephale Kerne (M/D) und die untere Olive (IO) als Lernbahn (rot) zum Kleinhirn. Die untere Olive wird zusätzlich durch sensorische Eingänge aus den handelnden Organen (Peripherie) über den tatsächlichen Bewegungsablauf informiert (nach Neuweiler 2003).

Parallelfasern, also das beabsichtigte Programm, und die Kletterfasern, der schimpfende Trainer, ungefähr gleichzeitig aktiv, verändern sich die Synapsenstärken an den Parallelfasern/Purkinjezellen so lange, bis der Trainer schweigt (Abb. 3 b). Das dann erreichte zeitlich-räumliche Muster der Bewegung wird dann als das richtige, Eingeübte konserviert.

Aber wie wird der Trainer, die Kletterfaser, zum Verstummen gebracht? Das geschieht dort, wo die Kletterfasern herkommen, in der so genannten unteren Olive des Nachhirs (Abb. 3 b). Dort begegnen sich zwei wichtige Informationen: aus der Peripherie, d. h. von den Gelenken und Muskeln kommen Sinnesinformationen „über den letzten Stand der Dinge“ an erregenden Synapsen an.

Andrerseits melden hemmende Synapsen, welchen Zeitrhythmus das Kleinhirn an die Motorik weitergibt. Wenn diese hemmende Meldung nicht synchron mit der Zustandsmeldung aus den Gelenken ankommt, feuert die Kletterfaser los, und der Trainer meldet somit einen Fehler. Auf diese Weise wird so lange nachjustiert, bis die Meldung von der Bewegungsdurchführung mit dem Steuersignal aus dem Kleinhirn in der unteren Olive

zeitgleich eintreffen. Wenn dort das Motorikprogramm synchron auf die Meldung über die Bewegungsausführung trifft, hat der Trainer sein Ziel erreicht, neuronales Musterprogramm und Ausführung sind zeitidentisch, der Trainer verstummt.

Bei Primaten und beim Menschen ist der laterale Cortexbereich des Kleinhirns enorm vergrößert. Dort werden nicht nur die Finger- und Artikulationsbewegungen in ihrem Zeitablauf kontrolliert, sondern auch andere Vorgänge mit komplexem Zeitprogramm, wie das Planen von Handlungen, planerisches Denken, Kognitionsleistungen etc.

Die bislang vorgestellte Grundstruktur neuronaler Programmerstellung für die Erstellung und Durchführung von Handlungsabläufen, von der Intention und Programmerstellung im präfrontalen Cortex bis zu Durchführungsbefehlen vom Motocortex über die Nachhirnzentren zu den Mustergeneratoren im Rückenmark unter ständiger Kontrolle der lernenden Zeitmaschine gelten für alle Wirbeltiere einschließlich den Menschen. Wo bleibt seine spezifische motorische Intelligenz?

Die Pyramidenbahn

Es sei daran erinnert, dass alle corticalen Motoprogramme die Muskelneurone im Rückenmark nur durch die Kerne des Nachhirns erreichen. Bei den Säugetieren bahnt sich eine ganz neue Verbindung ihren Weg von den Neuronen des Motocortex unter Umgehung des Nachhirns direkt zu den Muskelneuronen des Rückenmarks (Abb. 5). Diese direkte Verbindung zwischen Motocortex und den Muskel steuernden Neuronen, die so genannte cerebrospinale oder Pyramidenbahn, gewinnt erst bei den Primaten und beim Menschen an Bedeutung. Die Fasern dieser Pyramidenbahn kommen zur Hälfte von großen Neuronen des primären motorischen Cortex (Area 4) und zur anderen Hälfte von prämotorischen Arealen, vor allem vom supplementären Motorareal (Area 6), das für die Programmerstellung eines Handlungsablaufes wichtig ist (Abb. 10). Bei unseren Vorfahren und beim Menschen innervieren diese Pyramidenbahnen vor allem Motorzentren der Hände und Finger. Beim Menschen werden zusätzlich Schulter- und Armmuskeln direkt von diesen Cortexneuronen angesteuert. Durch einen Ast der Pyramidenbahn (corticobulärer Trakt) werden vor allem die für das Sprechen so wichtigen Gesichts-, Lippen- und Zungenmuskeln unter direkte corticale Kontrolle gestellt. Während diese Direktbahnen aus dem Vorderhirn in erster Linie die Mustergeneratoren des Rückenmarks ansteuern, werden diejenigen Motoneurone, die Hand- und Fingermuskeln kontrollieren, sogar direkt von diesen Cortexneuronen innerviert. Die Automatik zentraler Mustergeneratoren

wird links liegen gelassen zugunsten direkter, bewusster, willentlicher Kontrolle. Wie wichtig diese direkte Innervation ist, erkennt man daran, dass Affen und wir die Finger unabhängig voneinander bewegen können; eine Katze, der diese direkte Pyramideninnervation fehlt, kann die Zehen nur gemeinsam bewegen. Vom Schimpansen zum Menschen steigert sich die corticale Innervation der Finger und Hände und vor allem der Sprechmuskulatur des Gesichts, der Lippen und der Zunge um ein Mehrfaches, wie deren Repräsentation auf dem Motocortex eindrucksvoll belegt (Abb. 2). Je mehr solcher Pyramidenfasern vorhanden sind, desto größer ist die motorische Geschicklichkeit. Die corticalen Motoneurone repräsentieren nicht einfach einzelne Muskeln, wie die Abbildung suggeriert, sondern ganze Bewegungselemente der entsprechenden Organe. Da wir Finger- und die ganze Sprechmuskulatur besonders variabel und differenziert einsetzen können, sind dort im Motocortex besonders viele Bewegungsbausteine repräsentiert. Deshalb nehmen die Neurone für Gesicht und Hände beim Menschen 2/3 der Motocortexoberfläche ein und beim Schimpansen weniger als die Hälfte. Im Vergleich zu den Menschenaffen zeigt diese fast schon groteske Überpräsentation der Hände und der Gesichtsmotorik, dass aus Hominiden ein ganz neuer Primat, ein „Manipulations-/Artikulationstier“ entstanden ist. Alle anderen Körperbereiche sind beim Menschen vergleichsweise dünn innerviert. Die erstaunlich winzige Repräsentation der Beinbewegung scheint Gottfried Benn geahnt zu haben, denn er schrieb in einem Brief an seine Tochter: „Ich finde schon Gehen eine unnatürliche Bewegungsart, Tiere sollen laufen, aber der Mensch soll reiten oder fahren.“ Der menschliche Motocortex gibt ihm völlig Recht.

Die neue und besondere Bedeutung der direkten Cortexbahn der Bewegungskontrolle wird sofort klar, wenn man bei Primaten das Leistungsprofil der konventionellen motorischen Kontrolle über die Nachhirnkerne dem der Pyramidenbahn gegenüberstellt: Ist die Pyramidenbahn unterbrochen, können die Affen nach einer kurzen Erholungsphase ganz normal laufen und klettern, können aber die differenzierten Fingerbewegungen zum Anfassen und Ergreifen von Gegenständen nicht mehr bewältigen. Ist die Verbindung zu den Nachhirnkernen unterbrochen, können die Affen nicht mehr gehen, sind aber nach wie vor in der Lage, mit ihren Fingern Futter aus Verstecken herauszupulen.

Es muss den Evolutionsbiologen geradezu elektrisieren, dass ausgerechnet diejenigen motorischen Neurone unter direkte corticale Kontrolle gestellt werden, die für die einzigartige Manipulier- und Fingerfertigkeit, für die Mimik und vor allem und zuvörderst für die Artikulationsmuskulatur der Lippen, der Zunge und des Mundraums zuständig sind. Zunächst einmal ist diese aufregende Besonderheit wiederum nicht humanspezifisch, weil

Corticospinale Bahn (Pyramidenbahn)

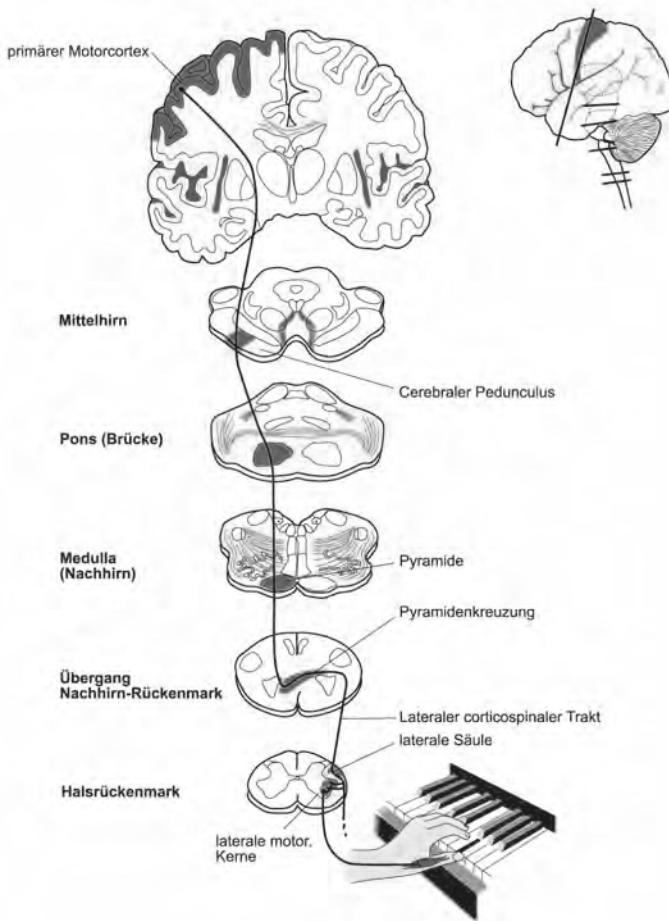
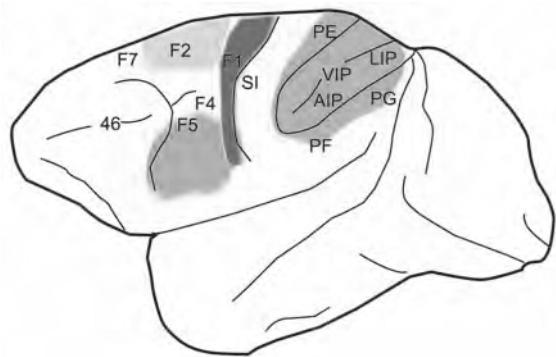
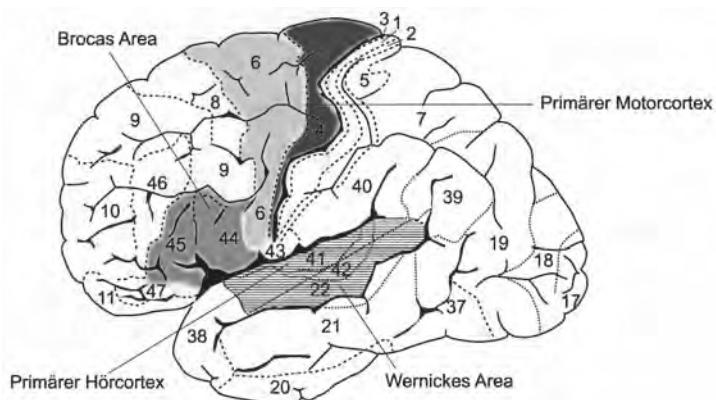


Abb. 5. Die Pyramidenbahn. Bei Säugetieren bildet sich zum ersten Mal eine direkte Bahn von den Motorcortices (grün) ins Rückenmark zu den zentralen Mustergeneratoren (vergleiche Schema in Abb. 1). Diese so genannte Pyramidenbahn erhält bei den Primaten und beim Menschen ein besonderes Gewicht. Ihre Fasern innervieren dort die Motoneurone der Gesichts- und der Handmuskulatur (beim Menschen auch der Armmuskulatur) direkt unter Umgehung der zentralen Mustergeneratoren. Je dichter die Innervation durch die Pyramidenbahn, desto differenzierter können die betreffenden Muskeln kontrolliert und bewegt werden (aus Kandel et al. 2000).



a) Affe

Abb. 6 a



b) Mensch

Abb. 6 b

Abb. 6 a und b: Handlungssteuernde corticale Zentren bei Primaten (a) und beim Menschen (b). Dunkelblau: primärer motorischer Cortex (F1 bzw. 4). Rot unterlegt: visuelle Cortexareale, die eng mit motorischen Cortexarealen verknüpft sind. F2, F4, F5 und F7 sind wichtige prämotorische Cortexareale für die Handlungsgenerierung. F5 bei den Primaten entspricht dem Brocaareal des Menschen, das ein dominierendes Sprech- und Manipulationszentrum ist. Wernickes Area: wichtiges Zentrum für das Sprachverständnis. Zahlen: Nummerierung der Cortexareale nach Brodmann.

sie sich schon bei unseren Vorfahren, den Primaten, findet. Aber auf dieser Errungenschaft der Primaten baut unsere Sprech- und Fingerfertigkeit auf.

Handlungs- und Spiegelneurone

Auf dem Weg zur motorischen Intelligenz des Menschen müssen wir noch einmal bei Primaten Halt machen, von denen wir am ehesten Anhaltspunkte bekommen, woher die unerschöpflichen Handlungsketten stammen, mit denen unsere Hände durch Zuhilfenahme von Musikinstrumenten Konzertsäle mit komplexesten Klangwelten füllen oder z. B. meine Artikulationsmuskulatur bei Vorträgen neurobiologisches Wissen in endlosen Satzverzweigungen kommuniziert.

Die Handlungsabsichten und die auszuführenden Motoprogramme kommen aus Arealen, die unmittelbar vor dem Motocortex liegen, den prämotorischen Arealen (Abb. 6 a, b). Dieser prämotorische Bereich erhält einerseits Eingänge von Assoziationscortices des Stirnhirns, andererseits aber auch von parietalen Cortexbereichen des Sehens. Diese prämotorisch-parietalen Erregungsschleifen sind von zentraler Bedeutung, weil alle Primaten, und biologisch gesehen ist der Mensch eine Primatenart, Handlungen unter visueller Führung ablaufen lassen. Der Parietalcortex liefert Informationen über den Handlungsräum, seine Gegenstände und die Lage der Handlungsziele.

Bei den Primaten gibt es ein prämotorisches Cortexareal, F5, das für unsere Frage von zentraler Bedeutung ist (Abb. 6 a). Dort sind Neurone, die bei Hand- und Mundbewegungen feuern, und diese Area F5 der Affen ist weitgehend deckungsgleich mit dem Sprechzentrum des Menschen, der Broca Area (Abb. 6 b).

Abb. 7. Handlungsneurone. Im corticalen Feld F5 der Primaten gibt es Neurone, die für zielgerichtete Handlungen, vor allem für das Greifen zuständig sind. Das Beispiel zeigt ein Neuron, das nur aktiv ist (blau), wenn der Affe mit Daumen und Finger zwei leicht bzw. schwer gefederte Hebel zusammendrückt. Rechts die Aktivität eines beteiligten Muskels (grün). Die Aktivität des Neurons ist unabhängig von der aufzuwendenden Muskelkraft.

Wenn der Affe mit der ganzen Hand einen Hebel greift (Power-Greifen), bleibt dieses Neuron stumm, während der Muskel besonders stark aktiv ist.

Unten: in einem benachbarten Cortexareal gibt es Neurone, die beim Betrachten ganz spezifischer Handlungen aktiv sind. Neuron 1 reagiert nur beim Papierzerknüllen, Neuron 2 nur auf Zupfen und Neuron 3 nur auf Zerreissen. Keines der drei Neurone reagiert auf handlungsfreies Darbieten von Papier (nach Kandel et al. 2000; Neuweiler 2003).

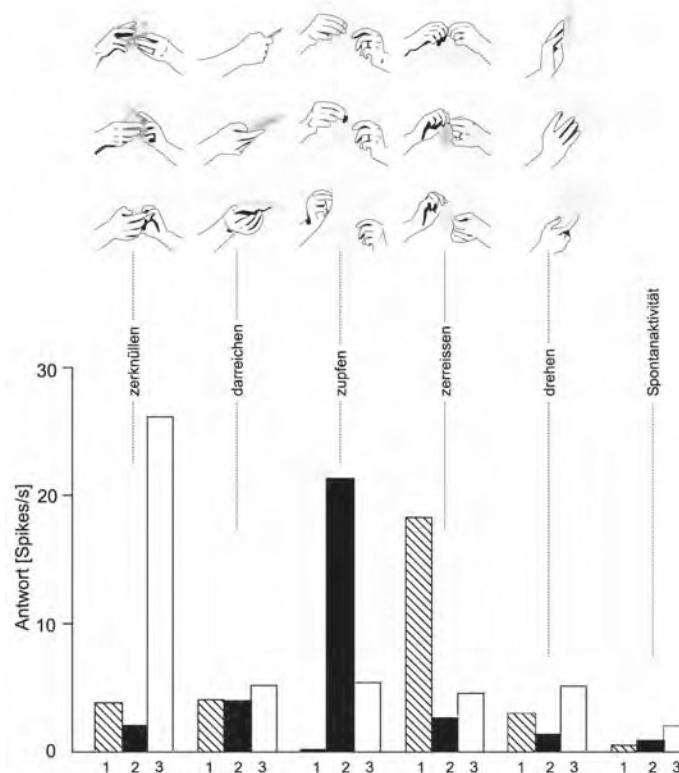
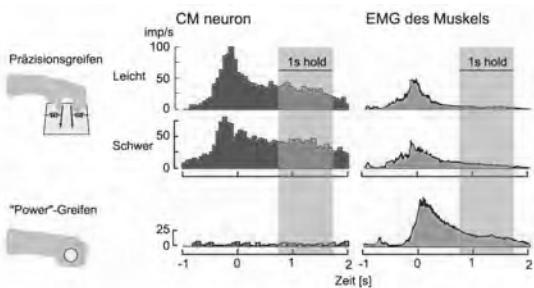


Abb. 7

Handlungsneurone

Die Neurone in der Area F5 der Affen feuern nicht einfach bei irgendwelchen Hand- oder Mundbewegungen. Sie sind vielmehr nur aktiv bei ganz bestimmten, zielgerichteten Bewegungsabläufen (Abb. 7), bei Handlungen also, die auf ein Ziel gerichtet sind, das Ergreifen einer Rosine z. B. Die F5-Neurone sind also keine Bewegungs-, sondern Handlungsneurone, die nur bei ganz spezifischen Handlungen aktiv sind. Der F5-Cortex stellt eine Art Handlungslexikon dar, in dem die wichtigsten Alltagshandlungen verfügbar sind. Die meisten Handlungsneurone repräsentieren das Greifen mit der Hand, wobei sie zwischen der Art des Greifens unterscheiden. Viele Neurone repräsentieren nur das vorsichtige Greifen zwischen Daumen und Zeigefinger (Abb. 7), andere das kraftvolle Zupacken mit der ganzen Hand usf. Wieder andere Neurone repräsentieren dagegen das Greifen mit dem Mund oder generell Greifen, egal wie. Neben Greifneuronen gibt es Neurone für das Zerreißen, für das Halten, für das Hinstellen eines Gegenstandes, für das Pulen oder generell für jede Art der Manipulation eines Gegenstandes. Manche Neurone repräsentieren Fragmente einer Handlung, z. B. das Schließen von Daumen und Zeigefinger usf.

Der F5-Cortex hält also einen Satz von gängigen, zielgerichteten Handlungen bereit, die – zumindest theoretisch – zu beliebigen und in der Länge offenen Handlungsketten verknüpft werden könnten, wie Wörter, die man zu Sätzen zusammenkettet. In einem anderen prämotorischen Areal (SMA) gibt es Neurone für eingebühte, kurze Handlungsketten (Abb. 10). Auf dieses Areal werde ich im Zusammenhang mit der Sprache zurückkommen.

Spiegelneurone

F5 enthält noch eine weitere Klasse von Neuronen, die zurzeit die Neuropsychologen in Atem hält. Für das motorische Erlernen spielt die einfache Nachahmung einer beobachteten Handlung eine wichtige Rolle. Wir lernen diffizile Manipulationen durch Abschauen. Ich erinnere mich noch heute, wie in meiner Werkstudentenzeit ein freundlicher Meister mir geduldig immer wieder und wieder vorführte, wie man eine Feile anzusetzen hat, damit auf dem Werkstück eine glatte Fläche ohne Feilenrillen entsteht. Kinder lernen das Sprechen nicht nur durch Hören, sondern mehr noch durch das Abschauen der Mundbewegungen.

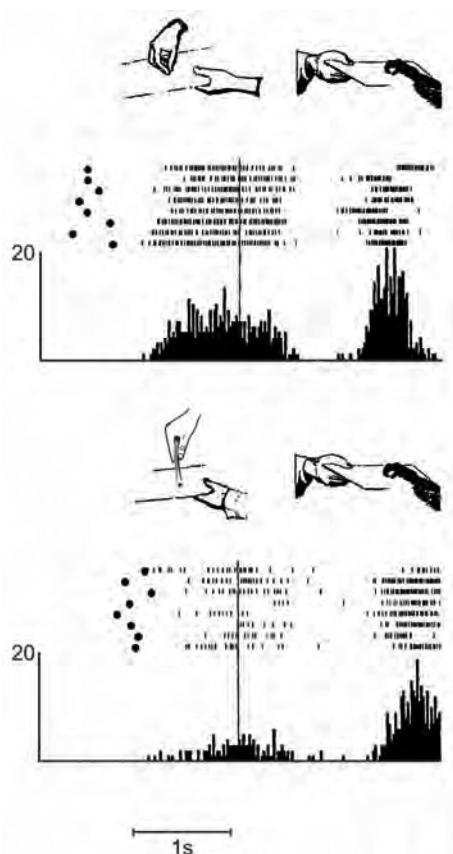


Abb. 8. Spiegelneurone sind Neurone aus dem Cortexareal F5 der Primaten, die bei der Durchführung einer spezifischen Handlung (rechts, hier Greifen einer Frucht) ebenso aktiv sind wie beim bloßen Betrachten der gleichen, von einem anderen durchgeführten Handlung (links).
 Oben: Das Neuron ist aktiv, wenn der Affe einen dargebotenen Leckerbissen greift, aber auch, wenn der Affe zuschaut, wie der Experimentator die gleiche Handlung ausführt. Unten: Greift der Experimentator aber den Gegenstand mit einer Pinzette, bleibt dieses „Handgreifneuron“ stumm (nach Gallese et al. 1996).

Im F5-Cortex der Affen gibt es nun viele Neurone, die nicht nur feuern, wenn das Tier eine bestimmte Handlung durchführt, sondern auch dann, wenn es regungslos dasitzt und nur zuschaut, wie ein anderer genau diese Handlung vollzieht (Abb. 8). Ein F5-Neuron, das aktiv ist, wenn der Affe mit der Hand ein Objekt ergreift, feuert auf genau dieselbe Weise, wenn es „zusieht“, wie ein anderer Affe genau dasselbe macht oder der Experimentator das Greifen mit der Hand vorführt. Es bleibt jedoch stumm, wenn der Versuchsleiter das Objekt nicht mit der Hand, sondern mit einer Pinzette greift. Diese beobachteten oder ausgeführten Handlungen müssen stets auf ein Objekt gerichtet sein. Fehlt ein solches Objekt, wird z. B. ins Leere gegriffen, bleiben die Spiegelneurone stumm. Diese Objektbezogenheit bleibt selbst dann bestehen, wenn das Objekt hinter einer Sichtblende versteckt wird (Abb. 9). Diese Spiegelneurone repräsentieren also ein zielgerichtetes Handlungskonzept, gleichgültig, ob diese spezifische Handlung ausgeführt oder nur beobachtet wird oder sogar nur in Fragmenten gesehen wird.

Diese im F5-Cortex sehr zahlreichen Spiegelneurone können erklären, warum Nachahmen durch bloßes Beobachten beim Erlernen unserer Geschicklichkeiten eine so dominante Rolle spielt. Es gibt Belege, dass es gerade bei dem Meister-Imitator Homo sapiens solche objektbezogene Spiegelneurone im entsprechenden Cortexareal, der Broca-Area, unserem Sprechzentrum, gibt. Es sei noch einmal daran erinnert: Wir lernen sprechen vor allem durch Nachahmen. Inzwischen werden die Spiegelneurone sogar im Zusammenhang mit Autismus diskutiert. Kleine Kinder sind geradezu Weltmeister in motorischer Imitation. Autistische Kinder haben dagegen ein ausgeprägtes Defizit im Nachahmen von Bewegungen und Handlungen und bei der Planung von Handlungen. Imaging-Studien beim Menschen sprechen dafür, dass bei autistischen Kindern das Cortexareal mit den Spiegelneuronen weit weniger aktiv ist als bei normalen.

Das Bühnenbild für den letzten Akt ist aufgestellt

Wir haben bei Primaten inklusive dem Menschen ein Cortexareal motorischer Intelligenz, den F5-Cortex bzw. das Brocaareal. Dort wird ein Satz von Handlungskonzepten für die Hände und für den Mund bereitgestellt. Diese Handlungsprogramme können bzw. könnten in variabler Abfolge und im Prinzip unbegrenzter Länge zu Handlungsketten, komplexen Manipulationen und Mundbewegungen zusammengekettet werden. Für das soziale Lernen gibt es die Spiegelneurone, die uns das motorische Imitieren erleichtern.

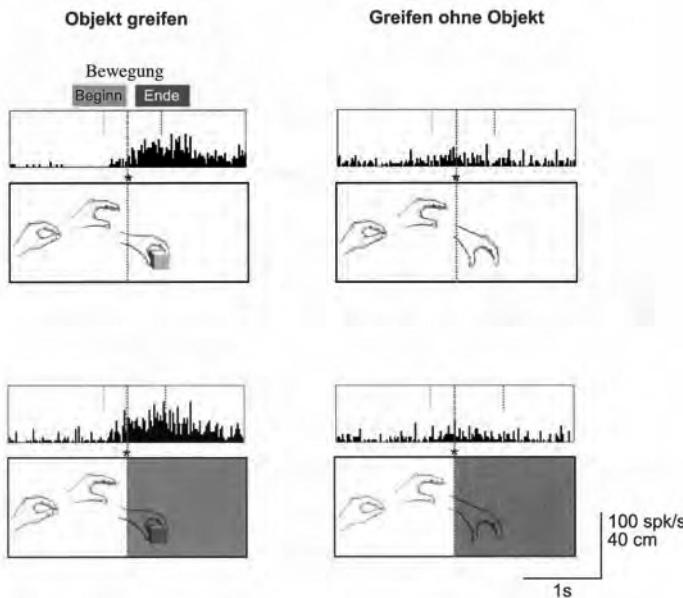


Abb. 9. Spiegelneurone sind zielorientiert und werden z. B. nur aktiv, wenn ein Objekt gegriffen wird. Greift der Experimentator ins Leere (oben rechts), so bleibt das Neuron stumm. Nach der ersten Erfahrung lässt sich das Neuron auch durch eine Blende, die die Sicht auf das Objekt bzw. auf das Fehlen des Objekts verdeckt, nicht täuschen. Vertikale Striche markieren Beginn und Ende der Greifbewegung (nach Rizzolatti und Luppino 2001).

Wenn das so ist, warum können wir Menschen diesen Werkzeugkasten nutzen und unsere Finger in schwierigsten und endlos langen raum-zeitlichen Abfolgen in die Klavier-tasten greifen lassen, ein Affe kann das niemals; warum können wir mit dem Pinsel in der Hand die feinsten Gebilde in präziser Linienführung zu Papier bringen, ein Affe kann das nicht; warum können wir Bewegungselemente unserer Arm- und Schultermuskulatur so präzise zu einem Aktivitätskonzert zusammensetzen und vorausplanen, dass die ballistische Wurfbaahn ziemlich genau ins Ziel trifft, und ein Affe kann das niemals, er trifft nicht einmal mit einem Hammer einen Nagel; warum können wir Laute, Phoneme, rasch zu Worten zusammenketten und Worte zu sich verzweigenden Sätzen aneinander reihen und ein Affe kann das niemals?

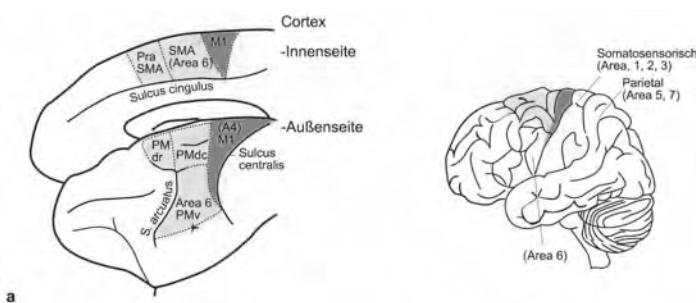
Die neuronale Steuerung von Vokalisationen

Die bislang aufgezählten neuronalen Attribute besonderer Finger- und Artikulationsfähigkeit, der direkte Zugriff des Cortex auf die Motoneurone, die Handlungs- und die Imitationsneurone, gelten für Primaten und den Menschen. Wo sind also die Neurone, die den Menschen zum sprechenden Primaten machen?

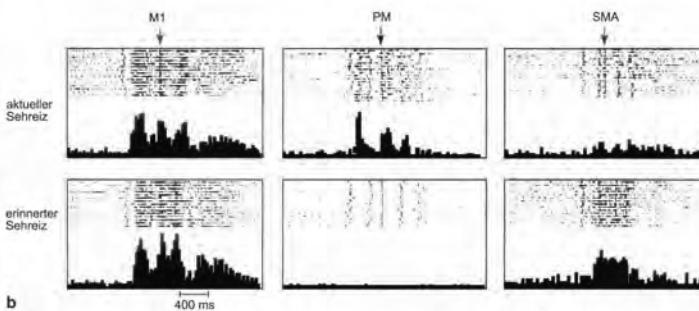
Man kann durch elektrische Reizung diejenigen Gehirngebiete identifizieren, von denen aus sich Vokalisationen auslösen lassen (Abb. 11). Solche Versuche führten zunächst zu verwirrenden Ergebnissen, weil von ganz unterschiedlichen Hirnbereichen Vokalisationen ausgelöst werden konnten. Ein Tor, durch das alle Befehle für arteigene Laute hindurch müssen, ist das sog. periaquäduktale Grau (PAG). Nicht nur bei Primaten, sondern bei allen Säugern wird dort durch elektrische Reizung immer Vokalisation ausgelöst. Wo allerdings die Erregungsmuster für die verschiedenen artspezifischen Laute herkommen, ist bis heute nicht klar. Ein zentraler Auslöser solcher Laute ist ein Cortexareal auf der Innenseite jeder Cortexhemisphäre, dem Gyrus cinguli. Von dort aus lässt sich fast das ganze Lautrepertoire eines Affen auslösen. Affen müssen ihre Laute nicht als Jungtiere von ihren Müttern erlernen, sie sind vielmehr angeboren. Über die Laut gebende Funktion des Gyrus cinguli weiß man beim Menschen wenig, mit Sicherheit werden von dort keine Sprachelemente initiiert.

Abb. 10. Die Rolle des Motocortex und prämotorischer Areale.

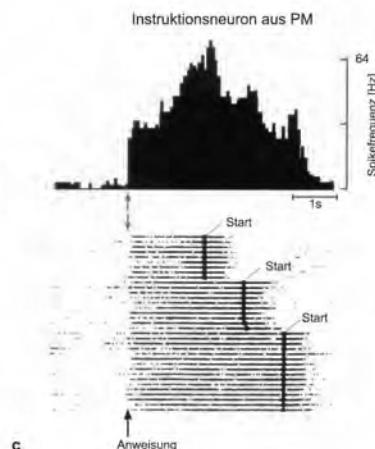
- a) Die funktionelle Einteilung der Cortexareale. Rechts: Überblicksbild.
M1 primärer motorischer Cortex, PM prämotorische Cortices, SMA supplementäres motorisches Areal.
- b) Neuronale Aktivität bei einer visuell gesteuerten Aufgabe. Der Affe musste nacheinander drei Knöpfe drücken. In der oberen Reihe leuchteten die zu drückenden Knöpfe auf (aktueller Sehreiz), in der unteren Reihe stammt der auslösende Reiz aus der Erinnerung (erinnerter Sehreiz). Während das Neuron aus dem Motocortex (M1) in beiden Situationen gleich aktiv ist, feuert ein prämotorisches Neuron (PM) nur in der aktuellen Reizsituation und das aus dem supplementären motorischen Areal (SMA) nur in der erinnerten.
- c) Instruktionsneurone. Eine Affe wird angewiesen, eine Bewegung zu machen, durfte sie aber erst nach einem Startsignal (schwarzer Balken Start) ausführen. Das hier gezeigte Neuron aus dem prämotorischen Cortex (PM) ist während der ganzen Anweisungs- und Wartephase aktiv und verstummt kurz nach dem Beginn der Bewegung. Oben: gemittelte Aktivität über alle drei verschiedenen lange Wartezeiten. Unten: Jede Spur repräsentiert einen einzelnen Versuch (nach Neuweiler 2003).



a



b



c

Abb. 10

Bei Primaten müssen allerdings Lautbefehle nicht ausschließlich durch das Nachhirn laufen, weil Neurone des Motocortex direkt Zugriff auf die motorischen Neurone der Artikulationsmuskulatur bekommen. Laute können auch vom motorischen Gesichtscortex ausgelöst werden.

Beim Menschen ist der Weg über den motorischen Gesichtscortex dagegen obligatorisch geworden: Patienten mit beidseitigen Läsionen des motorischen Gesichtscortex können nicht mehr sprechen und nicht mehr singen. Dieselbe Läsion bei Affen hat keinerlei Auswirkung auf deren Lautgebung. Das Studium der Lautsteuerung bei Primaten liefert deshalb keine Einsichten in die neuronale Erzeugung von Sprache beim Menschen. Auf neuronaler Ebene sind artspezifische Vokalisationen der Schimpansen etwas grundsätzlich anderes als die Sprache. Sie sagen nichts aus über die Evolution der Sprache. Ohne motorischen Cortex gibt es keine Sprache, wohl aber alle artspezifischen Laute eines Primaten. Wer die evolutive Sprachentstehung verstehen will, sollte sich vielmehr mit der neuronalen Kontrolle von differenzierten Manipulationen bei den Primaten beschäftigen.

Es gibt eine weitere humanspezifische Besonderheit: Beim Menschen, und nur beim Menschen, innerviert der primäre motorische Cortex zusätzlich direkt den Nachhirnkern, den Nc. ambiguus, der die Kehlkopfmuskeln kontrolliert. Dieses Spezifikum der menschlichen Lautkontrolle führt uns freilich nicht viel weiter, weil die Vielfalt der Phoneme, aus der unsere Silben und Wörter bestehen, nicht im Kehlkopf, sondern im Rachen und Mundraum entstehen.

Abb. 11. Schema der Vokalisationssteuerung bei Primaten und beim Menschen.

Die artspezifischen, genetisch fixierten Laute der Primaten lassen sich vom vorderen Gyrus cinguli (rot) der Hemisphäreninnenseite durch elektrische Reizung auslösen, nicht aber durch Reizung im supplementären motorischen Areal (SMA). Erlernte Phoneme und Silben lassen sich dagegen beim Menschen durch elektrische Reizung der SMA, nicht aber des Gyrus cinguli auslösen. Das periaquäduktale Grau (PAG) ist eine Durchgangsstation für Vokalisationsbefehle bei allen Säugern und Primaten. Elektrische Reizung des PAG löst artspezifische Laute aus.

Schwarz: Vokalisationsbahnen bei allen Säugetieren. Grün: zusätzliche Bahnen bei Primaten, die eine direkte Verbindung zwischen Motocortex und den Kernen der Artikulationsmuskulatur herstellen. Rot: zusätzliche Vokalisationsbahnen beim Menschen. Nur beim Menschen lassen sich Sprechelemente durch Reizung der SMA (Pfeil) auslösen und nur beim Menschen steht der Kern der Kehlkopfmotorik, der Nc. ambiguus, unter direkter Kontrolle des Motocortex (nach Jürgens 2002).

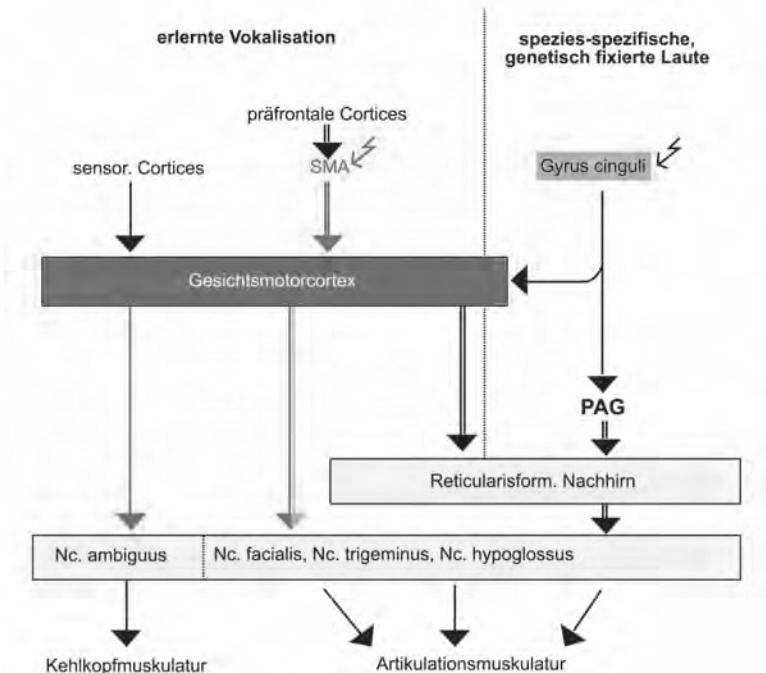
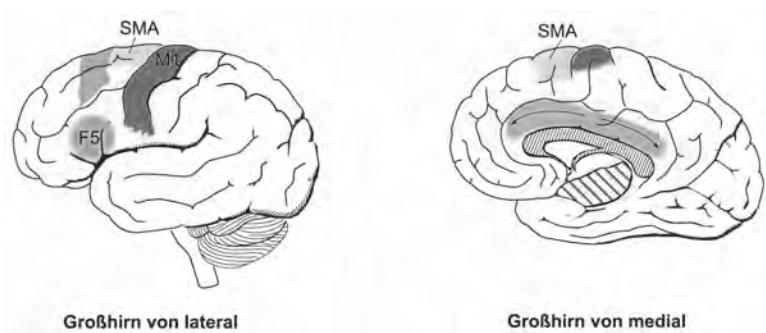


Abb. 11

Es gibt noch ein drittes, entscheidendes Spezifikum. Reizt man beim Menschen nicht im Gyrus cinguli, sondern in einem prämotorischen Cortexareal, der SMA, so lassen sich gesprochene Phoneme, Silben auslösen. Reizt man das gleiche Areal bei Affen, erhält man keine einzige Lautäußerung. Die SMA ist also ein Cortexareal, das nur beim Menschen und bei keinem Primaten, geschweige denn Nichtprimaten, Lautäußerungen bzw. Sprechen auslösen kann. Ist die SMA zerstört, kann der Patient zwar noch auf Fragen antworten, aber er spricht nicht mehr spontan, er äußert seine Gedanken nicht mehr.

Ist damit das neuronale Gebiet dingfest gemacht, das aus einem sprachlosen Primaten einen sprechenden Menschen macht? Ja und nein, denn die SMA initiiert nicht nur Sprechen, sondern bei Mensch und Affe auch Handlungen, deren Abfolge erinnert wird. Wie das Beispiel in Abb. 10 zeigt, entsteht die Instruktion im Areal F5 und das SMA holt diese Instruktion aus dem Gedächtnis.

F5 wird beim Menschen als Brocaareal bezeichnet, wo das Sprechen lokalisiert ist, allerdings nicht nur, sondern auch die Steuerung komplexer Finger- und Handbewegungen (Abb. 6 a, b). Dieses Cortexgebiet scheint bei Primaten generell die Instruktionen für Handlungen zu generieren, und beim Menschen eben auch für das Sprechen. Warum leistet dieses Cortexareal für den Affen nicht dasselbe wie für den Menschen? Weil von F5 keine neuronale Verbindung zur Gesichtsmotorik existiert? Alle Evidenz spricht dagegen.

Nach einer These, die auf W. H. Calvin (1994) zurückgeht, ist der Unterschied zwischen Sprechen und Sprachlosigkeit ein gradueller, der in der Summe zu einer neuen Qualität führt: Primaten können in F5 Handlungselemente nur relativ langsam, relativ unpräzise und nur in überschaubarer Zahl zu Handlungsfolgen in einer zusammenhängenden Handlungsinstruktion zusammenfügen. Deshalb werfen Affen ihre Steine und Äste ins Ungefähre, lernen längere Handlungsabfolgen nur nach langer Einübung und können ihre Phoneme nicht zu Wörtern, geschweige denn fließenden Wortfolgen zusammenketten.

Dasselbe Cortexareal beim Menschen, die Broca Area, verbindet Handlungselemente der Arme und der Hände ebenso wie der Artikulationsmuskulatur der Kiefer, Zunge und Lippen schnell und sehr präzise zu längeren Handlungsketten. Dieses Verketten geschieht nach Regeln, die ganz ähnlich wie beim genetischen Kode, einen Satz von Handlungselementen in beliebiger Reihenfolge und in prinzipiell endlosen Folgen verbinden kann. Diese „Brocafähigkeit“ wirft einen Ball genau ins Ziel, baut ein Uhrwerk zusammen und erzeugt endlose, sich verzweigende Wortfolgen auch dann, wenn wir sie gar nicht aussprechen, sondern spielerisch, planerisch und stumm in unserem Gehirn ablaufen lassen.

Es ist diese unbegrenzte Kettenbildung motorischer Anweisungen, die uns von unseren Primatenvorfahren unterscheidet, die dieselbe Fähigkeit nur in einem eng begrenzten Rahmen besitzen. Wer die Evolution des Sprechens verstehen will, sollte die arteigenen Vokalisationen links liegen lassen und sich mit den Randbedingungen, vermutlich in Area F5, beschäftigen, unter denen Primaten manuelle Handlungsfolgen aneinanderketten können. Für die neuronalen Algorithmen, die solche Elementverknüpfungen zu leisten imstande sind, ist es prinzipiell gleichgültig, ob sie auf Finger- und Handbewegungen oder auf Phoneme angewandt werden.

Schlussfolgerung

Diese einzigartige motorische Intelligenz – dingfest gemacht in den prämotorischen Cortices SMA und Brocaareal –, Handlungselemente in prinzipiell unendlicher Variation zu beliebig langen, sich verzweigenden Ketten zusammenzufügen, ist der Schlüssel zur Menschwerdung.

Neuronale Steuerung manueller Geschicklichkeit und Sprechen scheinen eng verwandt zu sein. Die neuronalen Verkettungsalgorithmen können regelhaft sein und z. B. Worte nach einer Grammatik anordnen, Fingerbewegungen nach einem erlernten Notenbild aufeinander folgen lassen usf. Es ist ganz unerheblich, ob wir die motorische Handlungskette tatsächlich ausführen oder nur „denken“, ob wir die Sätze aussprechen oder nur stumm, d. h. „gedanklich“, Satz an Satz reihen, also überlegen und planen. Evolutionsgeschichtlich entstand unsere Denkkraft, auf die wir zu Recht stolz sind, in den prämotorischen Cortices, in F5 der Primaten und dem Brocaareal des Menschen.

Stellen wir dieser humanspezifischen motorischen Intelligenz, Fingerfertigkeit und Sprechen, unsere kognitiven Fähigkeiten gegenüber, so bricht die Einzigartigkeit Letzterer Stück für Stück weg, je mehr sich Neuroethologen mit der Kognition bei Tieren beschäftigen. Nur ein paar Beispiele:

Werkzeuggebrauch: Man kann beobachten, wie Krähen eine Walnuss so lange von einem Laternenpfahl auf den Asphalt fallen lassen, bis sie aufplatzt. Es gibt Fische, die Seeigel mit dem Maul packen und so lange die verletzlichere Seeigelunterseite gegen eine Korallenwand schlagen, bis sie zerbricht.

Kategorienbildung: Bienen beherrschen mühelos die Kategorie „gleich“ und „ungleich“ und transferieren sie von einer Riechunterscheidung (Zitrone versus Mango) auf Farbunterscheidung. Legt man einem trainierten Papagei verschiedene Objekte vor und

fragt, welches Objekt hat die Farbe A und die Form B, so pickt er zu 76% das richtige heraus.

Soziale Intelligenz: Papageien können auch Anweisungen lernen und anwenden. Weist er den Experimentator an: Hole Futter und der Experimentator legt einen Spielklotz auf den Tisch, so antwortet der Papagei „no“.

Kooperation: Zackenbarsche schwimmen zu den Verstecken von Riffmuränen und fordern sie durch Schwanzwellen auf, herauszukommen und auf Jagd zu gehen. Sie begleiten die Muräne und wenn diese auf Futtersuche in Korallenhöhlen und -spalten schwimmt, warten die Zackenbarsche oben, um an kleinen Öffnungen das vor der Muräne fliehende Kleinzeug abzufangen. Putzerfische, die große Fische von ihren Hautparasiten befreien, betrügen oft ihre Kunden, indem sie ihnen ein Stück Haut abknabbern. Wird der Kunde darüber böse, versöhnt ihn der Betrüger durch besonders eifriges Putzen und durch ganz bestimmte Gesten.

Die Beispiele kognitiver und sozialer Intelligenz von den Fischen bis zu den Säugern ließe sich beliebig fortsetzen. Einige Evolutionsbiologen behaupten inzwischen sogar, dass es unter Wirbeltieren keine fundamentalen Unterschiede kognitiver Fähigkeiten gäbe. Demgegenüber ist der Unterschied an motorischer Intelligenz, also an Fingerfertigkeit und Sprechfähigkeit zwischen Primaten und Menschen, zwischen Tier und Mensch also, klar und unwiderlegbar nachgewiesen.

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UNRAVELLING THE TANGLE OF NUTRITIONAL COMPLEXITY

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STEPHEN SIMPSON

I. Introduction

At face value, the challenge of eating sensibly is relatively straightforward: simply get enough of the right foods and you've done the job. But scratch the surface, even slightly, and you will unearth a staggeringly complicated tangle of interrelated questions. What, for example, *are* the right foods, and why these and not others? How does this differ in different life stages of a species of animal and indeed between different species? How did the between-species differences come about? What, in a given circumstance, *is* enough of a food? How does this change with the recent feeding experiences and other circumstances of an animal? What are the consequences for the animal of eating too little, or too much, of the right foods? And what are the consequences of eating more or less of the *wrong* foods?

That such problems are solved on a daily basis by animals as simple as insects and as complex as chimpanzees provides little succour to nutritional scientists. Instead, it gives rise to further questions: *how* do insects with a brain no larger than a pinhead solve such complex tasks? Why do chimpanzees with their large and complex brains not do appreciably better? Perhaps most intriguing of all is the question why humans, with our state-of-the-art brains, are prone to do substantially *worse* at diet selection than even the humble insect? And why have nutrition-related diseases such as diabetes, heart disease and various cancers *increased* rather than decreased over the past few decades despite scientific and technological advances that have empowered us to identify, produce and distribute the nutritionally optimal diet at will?

Our aim in this and the following article is to provide an overview of a research program that we have built over the past 15 years into the nutritional biology of animals (reviewed by Raubenheimer and Simpson 1997; Simpson and Raubenheimer 2000) and, more recently,

humans (Simpson, et al. 2003). Central to this programme has been the development of a geometrical approach for unravelling the kinds of complexities that underlie the nutritional decisions that are taken on a daily basis by members of our own and other species.

In the first article, we begin by outlining in general terms some of the reasons that nutrition is a particularly complex biological challenge. We then present an outline of our geometrical models, showing how they incorporate the basic components of nutritional decision-making – foods, food constituents, an animal's current nutritional state, its nutritional needs and so forth. In the last two sections, we show how this approach can be used to explore questions about the evolution of nutritional decision-making. Throughout this article, we use examples from a group of animals that has played a leading role in our work, the insects. In the second article, we extend the approach to a species at the other end of the complexity spectrum, humans.

II. The Complexities of Nutrition

For some animals, the challenges of feeding are less extreme than for others. Many species of butterflies, for example, acquire and store during the juvenile (caterpillar) stages most of the nutrients they will need as adults. Usually, the adult nonetheless needs to do *some* foraging for itself, principally to meet the substantial energetic demands of flight. The target food is nectar, which consists largely of energy-rich simple carbohydrates (sugars) and water. For these animals, nutrition can be modelled as a simple process of matching carbohydrate acquisition to carbohydrate requirements (Fig. 1 a).

Even here, though, the complexity of nutrition is not avoided, but merely transferred to a different stage in the life cycle. Caterpillars need to obtain carbohydrates as a source of energy (unlike mammals, herbivorous insects cannot extract energy from dietary fats) as well as proteins (for growth and to meet their future needs as adults) and several micronutrients including sterols, minerals, etc. Not surprisingly, then, caterpillars select foods, such as leaves, which contain a wider range of nutrients than does nectar and so can better satisfy their more complex nutrient requirements.

However, selecting leaves rather than nectar provides only a very crude solution to the nutritional challenges facing caterpillars. Firstly, nutrient requirements are not fixed, but change as an animal grows, with different levels of activity, and so forth. For this reason, it is unlikely that any one kind of leaf will be ideal throughout the life of a caterpillar. To further complicate issues, the nutrient content of leaves also changes in time, for example

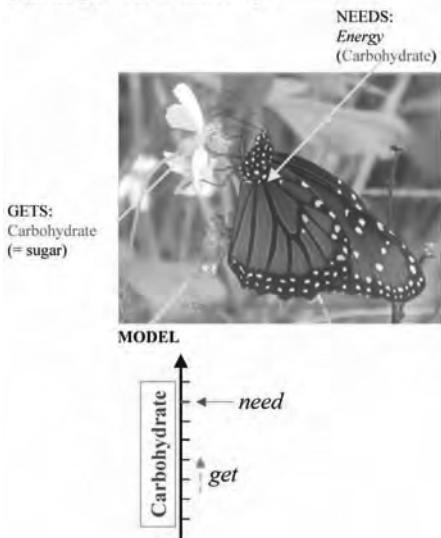
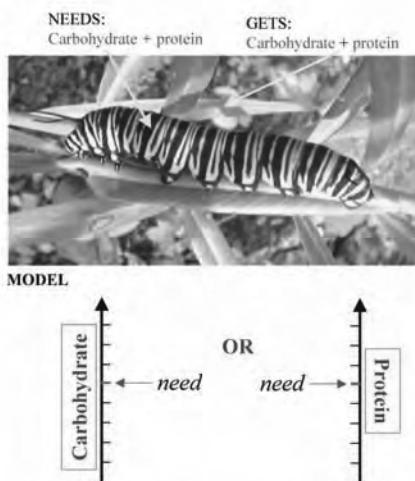
(a) Simple case - butterfly**(b) More complex - caterpillar**

Fig. 1. Modelling nutrition using the single-nutrient approach. In (a), a butterfly feeds only on nectar, which consists almost entirely of sugar solution, so its nutritional needs and gains can be modelled on a single carbohydrate axis. A caterpillar, by contrast, needs not only sugar, but also protein and other nutrients (b). In the single-nutrient approach, the potential complexity of this situation is avoided by modelling the interaction in terms of one or the other of the nutrients.

as plants develop or their growth conditions (such as soil water, nutrients and exposure to sunlight) change. Since there is no incentive for leaves to oblige the nutrient requirements of their predators, these changes are either independent of, or even systematically hostile to, the needs of herbivorous animals. Further, many plants produce noxious chemicals precisely to deter the advances of predators, and these toxins are usually produced to the greatest extent when leaves are nutritionally more attractive (e.g. in young succulent leaves). So what all this amounts to is that animals often face the problem of matching uncertain, changing and hostile nutrient availability to changing and sometimes uncertain nutrient requirements.

How do we model this more complex – and more typical – association between an animal that has multiple nutrient needs and foods with multiple components? A common approach has been to avoid the complexity, by focusing on one *or* the other nutrient (Fig. 1 b).

The chosen nutrient is then treated as the sole *currency* in the model, which takes on a structure much like that developed for butterflies feeding on nectar in Fig. 1 a.

Although in some cases this simplification might be useful, our interest in the complexities of animal nutrition has led us to devise an alternative approach. The aim is to integrate in a single model the key components of an animal's nutritional universe, such as the animal's nutritional state at a given time, the optimal state it could achieve, the foods that it should and should not eat in order to achieve that state, and the consequences of eating various foods available to it. Most important, these questions are addressed for two or more food components simultaneously within a single model. This enables us to explore not only the way the animal responds to various food components, but also how these components *interact* in their influence on the nutritional biology of animals.

III. Model Basics

A. The Nutrient Space

Our modelling procedure differs from the single-currency approach in two fundamental respects. Firstly, we consider more than one nutrient simultaneously, each represented by its own axis (Fig. 2 a). Secondly, and most important, we focus on the *interactions* among the various nutrients. We do this by combining the various axes into a single *nutrient space*, which has as many dimensions as there are food components in the model (Fig. 2 b).

To begin with, we will consider only two dimensions, the macronutrients protein and carbohydrate, but in principle any number of food components could be included in a model, whether they be nutrients or non-nutritional food components such as plant toxins (Simpson and Raubenheimer 2001; Behmer, et al. 2002) or indigestible bulk (Lee, et al. 2003). Our decision to focus on two nutrients for the time being is not only useful for illustrative purposes, but also has good biological justification: protein, carbohydrates and their interactions explain by far the major component of the variance in food choice and feeding behaviour in the insects we've studied. (In Section III H we present data which illustrate this, from an experiment in which mineral salts as well as protein and carbohydrate were varied in the diets of locusts.) In other cases, more than two nutrients might exert a significant influence on feeding behaviour – mammals, for example, can use dietary lipids as well as carbohydrates as energy sources and also need to eat protein. In such cases it might be preferable to use higher-dimensional models. Alternatively, there might be specific

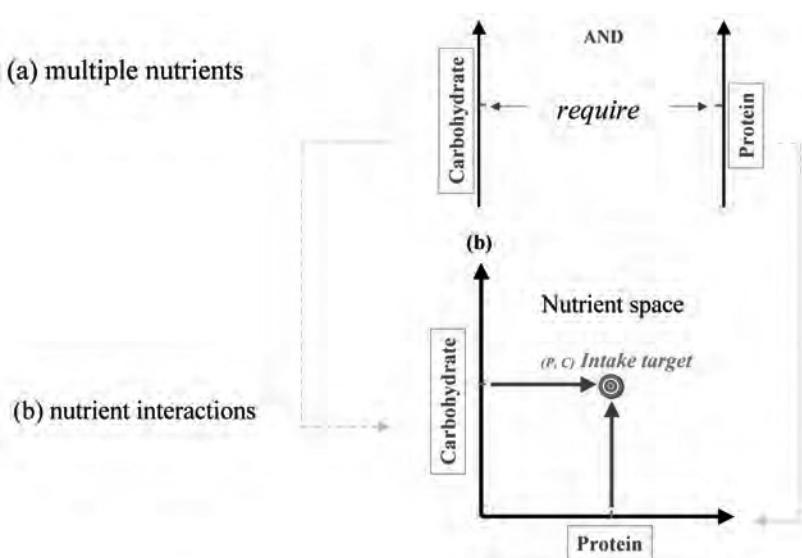


Fig. 2. Geometrical models include two or more nutrient axes (a), which are combined into a nutrient space (b). This defines a single point which represents the integrated requirements of the animal for several nutrients, the intake target.

circumstances which warrant combining two or more of the components on a single *compound axis*. In Section III H we provide an example of this, where protein and carbohydrate are combined in a single axis and plotted against mineral salts. Another case is discussed in the companion article in which carbohydrates and fats in the diets of humans can for some purposes be combined into a single axis.

Whatever the number of dimensions, constructing a nutrient space has the same principle advantage: it enables the critical nutritional factors to be described as a composite of several components simultaneously, and from this flows insights that otherwise would not be available.

B. Nutrient Requirements

Take, for example, the nutrient requirements of an animal. In the single-currency approach, an animal's nutrient requirements are represented as separate points on the

relevant axes – one on the carbohydrate axis, another on the protein axis and so forth (Fig. 1 a and b). Bringing the axes together into a nutrient space merges these, creating a *single point* which represents the needs of the animal for the various nutrients (Fig. 2 b). Since, by definition, this is the point of intake of the various nutrients that would benefit the animal most if it could get there, it is the point that we would expect a well-adapted animal to try to achieve. For this reason, we have called it the *intake target*.

Before showing how nutrient spaces deal with other important aspects of an animal's nutritional universe, such as foods and feeding, it is worth emphasising an important point and re-emphasising another. The first is that our use of the word "target" implies nothing about conscious striving (if it did, we would have some difficulty justifying its use in the context of insects). Rather, the intake target is a target towards which the regulatory mechanisms of a well-adapted animal should aim, in the same sense that an enemy aeroplane might be considered the target towards which a well-designed heat-seeking missile should aim. Neither does it categorically exclude consciousness; it might well be, in our species at least (and possibly in others), that conscious intent is one component of the mechanisms involved in nutritional regulation. Our use of the term "target" is thus purely mechanistic – for those familiar with philosophy of biology, it is teleonomic and not teleological.

The point we wish to re-emphasise is that nutrient requirements (i.e., intake targets) are not static, but change with time. Therefore, although an intake target can be treated as a fixed point when integrated over a stipulated time period (e.g. the first 10 days of the life of a caterpillar), in reality it traces a trajectory through nutrient space. For example, when our caterpillar develops into a butterfly the intake target shifts from comprising appreciable proportions of both carbohydrates and proteins to a composition almost devoid of protein. Likewise, some species of fish start life as carnivores and at some point switch to eating only seaweeds – in them, the intake target moves from a very high to an intermediate proportion of protein. As we will show in Section IV A, intake targets shift not only with development, but also over longer, evolutionary, timescales.

C. Foods and Feeding

Foods can be represented in a nutrient space in two ways. A food item, such as a leaf, can be depicted as a point whose position is determined by the *amounts* of the various nutrients it contains, in the same way that an intake target describes the amounts of the various nutrients that the animal needs. This allows us at a glance to compare the animal's nutrient

needs with the nutrients available in a particular food item and so to determine the suitability of the food item for the animal. Leaf 1 in Fig. 3 a, for example, contains more of both protein and carbohydrate than the animal needs, and thus seems a good choice of food for the animal.

The other aspect of Leaf 1 that is important from the animal's point of view – possibly even more important than the amounts of the nutrients that it contains – is the *proportions* of the various nutrients. This is represented by a line that passes from the origin of the nutrient space (the point 0,0) through the nutrient coordinates for the food (Fig. 3 b). We refer to these lines representing the balance of nutrients in foods as *nutritional rails*.

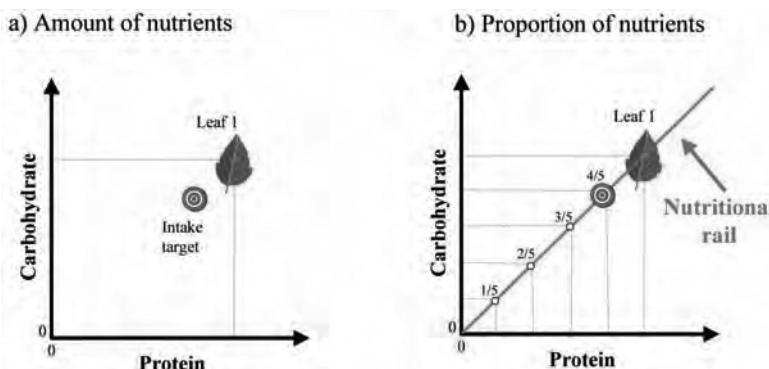


Fig. 3. Foods are represented by a point describing the amounts of nutrients they contain (a), or by the slope of a line (called a nutritional rail) describing the proportion of nutrients they contain (b). See text for further details.

The reason that the proportion of nutrients in a food can be represented as a line and the reason that we call these lines “nutritional rails” is illustrated in the following example (Fig. 3 b). Imagine an animal that has encountered but not eaten any of Leaf 1. Since it has gained none of the protein or carbohydrate that the leaf contains, the animal could initially be represented as a point with values 0 for protein, and 0 for carbohydrate (i.e., its state coincides with the origin of the plot). It now eats a meal of the food, which amounts to $1/5$ of the total amount of the leaf, and so moves $1/5$ of the distance on the x-axis towards the value of the protein coordinate of the leaf, and $1/5$ of the distance towards the value of the carbohydrate component. Its post-meal status is then defined by point $1/5$. After taking a

second meal of similar size, it would have moved to point $\frac{2}{5}$, after the third meal it would be at point $\frac{3}{5}$ and so on. Therefore, as the animal eats a food, it effectively “moves” – like a train on a railway line – along a linear trajectory with a slope which is determined by the balance of nutrients in the food.

D. Nutrient Balance

The above example also illustrates another very important point. The nutritional rail for Leaf 1 passes through the animal's intake target, and as a consequence the target can be reached by eating this food – in the figure, the animal would do so by taking a fourth meal on the leaf. Foods which contain the same proportion of nutrients as are required by an animal are called *nutritionally balanced* foods.

But now consider Leaf 2 in Fig. 4 a. This has a greater proportion of carbohydrate to protein than Leaf 1, and as a consequence its nutritional rail is steeper than that for Leaf 1. Since the steeper rail does not pass through the intake target, the target cannot be reached by eating this food – in other words, this food will not optimally satisfy the animal's nutrient requirements. Foods whose nutritional rail does not pass through the animal's intake target are *nutritionally imbalanced* foods.

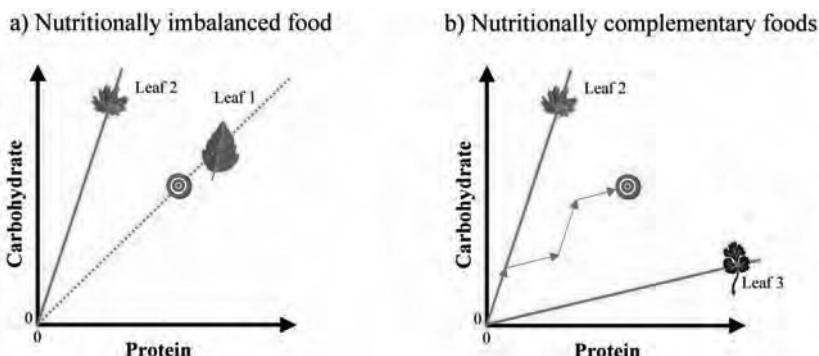


Fig. 4. a) The rail representing a food that is nutritionally balanced with respect to the nutrient requirements of an animal passes through the intake target for that animal (e.g. Leaf 1). In contrast, rails of nutritionally imbalanced foods do not pass through the intake target (Leaf 2). b) The animal can nonetheless reach its intake target by mixing its intake from two imbalanced foods which are nutritionally complementary (Leaves 2 and 3).

E. Nutritionally Complementary Foods

But a nutritionally imbalanced food can, nonetheless, *help* an animal satisfy its optimal nutrient requirements, if properly paired with other nutritionally imbalanced foods. Recall that Leaf 2 in Fig. 4 a is nutritionally imbalanced and so would confine the animal to a trajectory that is off-course from the target. But if the animal switched between eating this food and a second food with a different balance of nutrients (e.g. Leaf 3 in Fig. 4 b), then it would not be confined to a single trajectory but could alternate between the trajectories of the rails for the two foods. In this way it could “move” over wider areas in the nutrient space – in fact, it could zigzag its way to any point within the cone enclosed by the rails for the two foods. If, as in the figure, the cone encloses the intake target (i.e., if the rails for the foods fall on opposite sides of the target), then this combination of nutritionally imbalanced foods enables the animal to satisfy its nutrient requirements. Such pairs of nutritionally imbalanced foods which jointly enable an animal to reach its intake target are known as nutritionally *complementary* foods.

F. Measuring Intake Targets

That intake targets can be reached by composing a diet from two or more nutritionally imbalanced foods is undoubtedly useful for animals. It is also useful for researchers, because it provides a means of measuring the position of the intake target of an animal. The reason for this is that if you give a well-adapted animal a suitable pair of nutritionally complementary foods, then it should mix its diet in such a way as to reach the intake target, thus revealing the position in nutrient space of this target.

But an important precaution needs to be taken in interpreting the outcome of such an experiment: it must be demonstrated that the point in nutrient space selected by the animal is in fact *actively* selected and not arrived at by some other means, such as indiscriminately feeding on the available foods. The way to do this is to challenge the animal by altering the nutrient composition of one or both foods and to see whether it compensates by altering its intake of the two foods in such a way as to maintain the original point of nutrient intake. If the animal does not compensate for the changed composition of the foods, then it will arrive at a different point in nutrient space, providing no evidence that the original point is of any importance to it. If, on the other hand, it alters its behaviour so as to reach the same point of nutrient intake despite the altered composition of the foods, this demon-

strates that the point is actively selected; the animal is *defending* a point of nutrient intake, which is in all likelihood the intake target.

Fig. 5 shows an example of such an experiment, performed using larvae of the African migratory locust, *Locusta migratoria*. In this case, synthetic foods were used, in which one food in the pair contained a 1:2 ratio of protein to carbohydrate and the other contained a 2:1 ratio. To demonstrate target defence, there were four treatments in which one, the other, both or neither of the two foods were diluted by 50% using indigestible bulk (cellulose). One treatment comprised foods (% protein:% carbohydrate) 14:28 and 28:14, another 14:7 + 28:14, a third 14:28 + 14:7 and a fourth 7:14 + 14:17. Rather than testing the same animal on all four of the food combinations, a group of 10 different locusts was confined to each of the four pairings. Since these groups were indistinguishable at the start of the experiment, we were able to assume that the response of each group of animals to its particular treatment represented the response of any animal in the experiment, had it been exposed to that treatment.

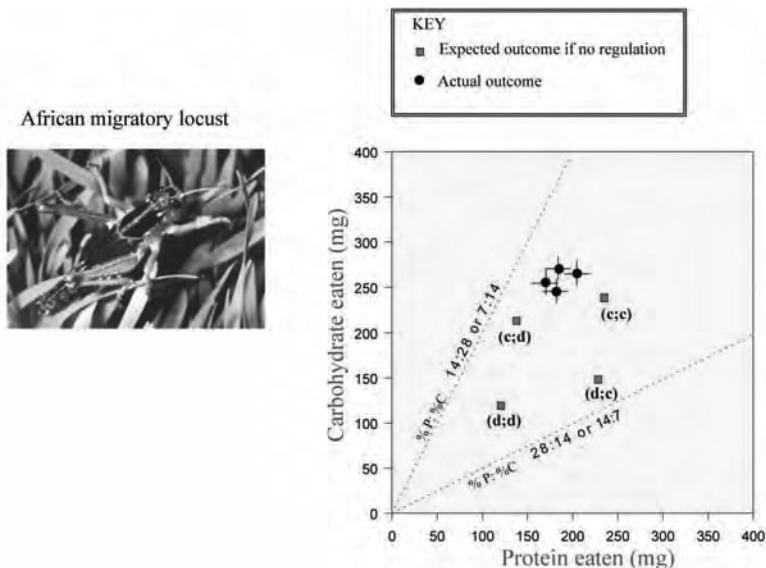


Fig. 5. Defence of an intake target by 5th-stadium nymphs of the African migratory locust. See text for details.

The square symbols in the figure represent the expected outcome for the four groups if each fed indiscriminately from its respective food pairing – i.e., in the absence of target defence. The round symbols show that, on the contrary, all four groups of animals ended up at a point that was statistically indistinguishable from the points achieved by the other three groups. To do so, the four groups had to eat very different proportions of the two foods, thus demonstrating that the observed outcome is actively defended against differences in the food pairings; it is, in all likelihood, an intake target.

G. Rules of Compromise

A foraging animal that encounters a nutritionally imbalanced food faces some serious nutritional decision-making. It could, on the one hand, reject the food and continue to search for a balanced one. But if it could not be sure that this was attainable, then it might be better off eating the imbalanced food in the hope it might subsequently find a complementary one. Even if there is little prospect of encountering a complementary food, the animal might still be better off eating the imbalanced food than foregoing feeding altogether. But having opted to settle for the imbalanced food, its nutritional decision-making is not over; depending on how much of the food it ate, the nutritional outcomes – and associated costs and benefits – would be very different. The nutrient-space approach allows these various outcomes to be clearly defined and measured.

The problem with nutritionally imbalanced foods is that they place an animal in a predicament in which it is forced to accept too little of some nutrients and/or too much of others. For example, a caterpillar confined to the nutritionally imbalanced food in Fig. 6 has three basic options. It could, firstly, eat until it reached position (i) on the rail. At this point it would have satisfied its requirement for carbohydrate, but would suffer a shortfall of protein. At the other extreme, it could eat until it reached point (ii) where it would have gained exactly the required amount of protein, but only by eating an excess of carbohydrate. It could, thirdly, feed to an intermediate point, where it suffers both a shortage of protein and an excess of carbohydrate, but neither of which are as large as at the extremes [e.g. point (iii)]. To the extent that nutritionally imbalanced foods are an important component of the daily lives of animals – and for many there is good evidence that this is so – one would expect that mechanisms would have evolved to enable animals to arrive at the compromise between overeating some nutrients and undereating others which minimised

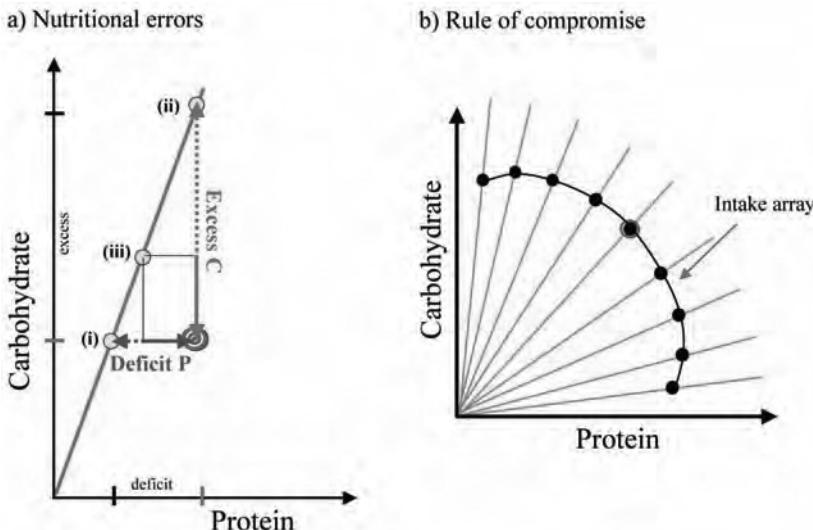


Fig. 6. a) Animals eating a nutritionally imbalanced food are forced into a trade-off between eating too much of some nutrients and/or too little of others. In the hypothetical example, if the animal fed to point (i) it would gain the required (target) amount of carbohydrate, but suffer a shortfall of protein; at point (ii) it would get enough protein, but too much carbohydrate, and at point (iii) it would have both a deficit of protein and an excess of carbohydrate. b) An array of intake points, whose shape provides information about the rule of compromise for balancing the excesses and deficits of nutrients ingested from imbalanced foods.

the costs of that predicament. This trade-off which animals must settle on when eating nutritionally imbalanced foods is known as a *rule of compromise*.

H. Measuring Rules of Compromise

How do we measure such rules of compromise? Since they involve the balance between excesses and deficits *relative to the optimal requirements*, a first step is to determine the position of the intake target. This can be done using complementary foods, as described in Section III F). We can then allow the animal to move its chosen distance along the rail representing an imbalanced food – for example, to points (i), (ii) or (iii) in Fig. 6 a – and measure the *nutritional errors* (excesses and deficits of the two nutrients) it has settled

on. The relationship between these excesses and deficits is what we are looking for: the rule of compromise.

The problem is, this procedure will tell us about the rule of compromise for one food only; it will tell us nothing about how the animal would respond to foods which are imbalanced to a greater extent or in the opposite direction. To get a broader picture, we would have to perform an experiment involving several groups of animals, each confined to one of a range of foods with different nutrient proportions. Such an experiment would generate a nutrient space traversed by several nutritional rails, and an intake point associated with each. Jointly, these intake points would constitute an *intake array*, whose shape and position in relation to the target would contain the information we are seeking (Fig. 6 b).

A real example of such an intake array is presented in Fig. 7. Here, African migratory locusts were made to trade off their intake of mineral salts against a balanced complement of the macronutrients protein and carbohydrate. The figure shows the selected intake point for groups of animals allowed to compose a diet from nutritionally complementary foods (i.e., the intake target), as well as the array for four treatment groups each fed a food with a different proportion of the two nutrient groups. The resulting straight and vertical array is easy to interpret: it shows that these animals regulated so as to achieve their target intake of macronutrients, irrespective of the excess or deficit of ingested salts that this would

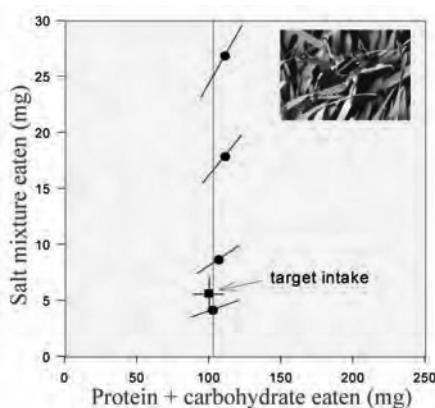


Fig. 7. Intake array for African migratory locusts forced to trade off a balanced complement of macronutrients (protein and carbohydrate) against mineral salts.

entail. Therefore, while they balanced their intake of macronutrients and salts when they had the luxury of switching between complementary foods, when confined to a single imbalanced food the animals prioritised the mixture of protein and carbohydrate, while abandoning regulation of salts. This suggests that, at least over the timescale of this experiment, they value the macronutrients as a resource more highly than they do mineral salts. In the following section, we present more examples of rules of compromise in animals.

Before doing so it is worth commenting on a particular aspect of Fig. 7, the reason that we combined protein and carbohydrate into a single axis rather than using a separate axis for each. Our justification for doing so is that the macronutrients were present in all foods in fixed and balanced proportions relative to each other – i.e., in the target proportion. In this circumstance, from the animal's point of view, they effectively *are* a single resource, since once it has eaten enough of one of the nutrients it has eaten enough of both of them.

IV. Applying the Models: Evolution of Nutritional Strategies

Up to this point, we have presented the nutrient-space approach largely as a descriptive tool for quantifying key aspects of animal nutrition. Our main interest in developing these models, however, is to apply them to real biological questions, concerning such factors as the ecology, physiology and evolution of nutritional strategies. In this section, we provide two illustrations of how this approach can be used to test specific nutritional hypotheses, both concerning the ecology and evolution of nutritional responses in insects. Examples concerning the mechanisms of nutritional regulation can be found elsewhere (e.g. Simpson and Raubenheimer 1993 a, 1996; Raubenheimer and Simpson 1998).

A. The Position of the Intake Target

In Section III A, we mentioned that intake targets move over evolutionary timescales, as animals adapt to their nutritional environments. At one level this is obvious – carnivores have evolved to eat foods with a higher protein/carbohydrate ratio than do most herbivores, which in turn eat more protein relative to carbohydrate than do animals that feed on plant sap or other sugar-rich foods. There are, nonetheless, many subtler questions to ask about the evolutionary influences of an animal's environment and lifestyle on its patterns of nutritional regulation.

For example, some insects have evolved an interesting association with a group of microbes known as mycetocyte bacteria. These bacteria exist only in specialised cells within the fat body (the insect equivalent of the liver) of their hosts, cells which appear to have evolved specifically for the purpose of housing the microbes. This provides a clue to the nature of the association: the bacteria are most likely paying guests, or symbionts, rather than parasites or pathogens which inflict a cost on the host. Further evidence that this relationship is an amicable one comes from experiments showing that when these bacteria are removed (using antibiotics) the health of the cockroaches is impaired – they grow more slowly and reach a smaller size as adults. The relationship is therefore almost certainly based on mutual benefit, rather than exploitation of one party by the other.

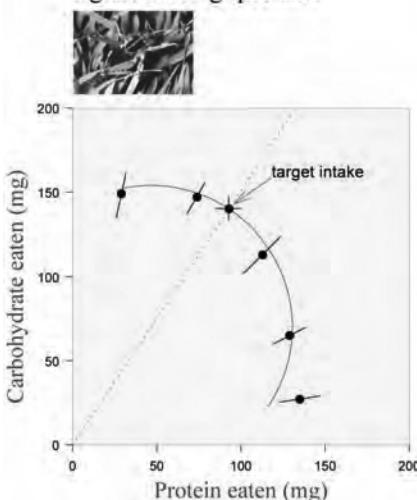
The advantages to the bacteria are clear: they thrive in custom-built accommodation, where they are protected in a stable, physiologically regulated environment from the hostile outside world and constantly bathed in a nutrient-rich medium. But what do the insect hosts get out of the association? We set about exploring the hypothesis that they benefit nutritionally, through the ability of mycetocyte bacteria to convert uric acid (a nitrogen-based waste product which is usually excreted by insects) into usable amino acids (the building blocks of protein). This would, effectively, amount to recycling waste nitrogen and so conserving this precious resource for the insects' use (Simpson and Raubenheimer 1993 b).

If our hypothesis is correct, then animals with mycetocyte bacteria would be more efficient at using the nitrogen they eat, and so, on average, would need less of this precious nutrient in their diet than do animals that lacked such an on-board recycling plant. To test this, we compared the position of the intake target rail of a large number of insect species that either do or do not harbour mycetocyte bacteria. As predicted, the target position of those species with symbionts had a significantly lower proportion of protein compared to those without.

B. The Evolution of Rules of Compromise

Above we showed that African migratory locusts abandon salt regulation and prioritise macronutrient intake when forced to reach a trade-off in the ingestion of these nutrient groups (Section III H). In a separate experiment in which the same species was made to trade-off protein and carbohydrate against *each other*, the outcome was very different: rather than the vertical line expected if one of the nutrients was prioritised, the intake array

a) African migratory locust:
a grass-feeding specialist



b) Desert locust:
a generalist feeder

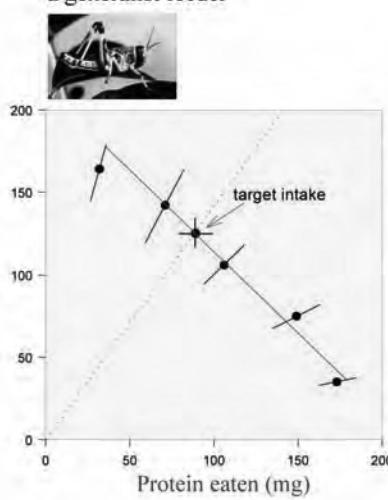


Fig. 8. Intake arrays for the specialist-feeding African migratory locust (a) and the generalist-feeding desert locust (b) fed a range of foods imbalanced in the relative proportions of protein and carbohydrate.

was arc-shaped (Fig. 8 a). This shows that the locusts ingested *both* an excess of one of the nutrients and a deficit of the other – they settled for a compromise, or trade-off, in the regulation of the two nutrients. But exactly what is the nature of this trade-off? While we will not go into the mathematical details here, it can be demonstrated that this arc-shaped configuration arises when the animals on each of the imbalanced foods feed to the point on their respective rails that is as close as they can get to the intake target. They are, in other words, minimising the sum of the nutritional errors (excesses and deficits) they suffer when eating the imbalanced food.

Minimising nutritional errors seems, intuitively, to be a reasonable way of coping when confined to nutritionally imbalanced foods. It seems even more reasonable considering that African migratory locusts are specialist feeders, which in nature eat only grasses, and so likely encounter a relatively narrow range of food compositions. Such animals might be expected to lack specific physiological adaptations for dealing with large nutritional excesses and deficits and hence to avoid subjecting their physiology to these nutritional errors.

If this idea is right, we would anticipate that generalist feeders – animals which are evolutionarily accustomed to eating foods with a wide range of nutrient compositions – would better cope with larger nutritional errors and possibly even benefit from them. As a first test of this, we also measured the rule of compromise in the generalist-feeding desert locust (*Schistocerca gregaria*). As shown in Fig. 8 b, the desert locust did not produce an arc-shaped array indicating minimisation of nutritional errors, but rather a linear array with negative slope. This array shows that the desert locust ingested larger surpluses of the excessive nutrient in the food than did their specialist-feeding cousins (Raubenheimer and Simpson 1997), providing support for our hypothesis. We have since shown a similar correspondence between dietary breadth and rules of compromise in a range of other generalist/specialist comparisons (Raubenheimer and Simpson 2003).

V. Measuring the Consequences of Nutritional Decisions

In the previous section, we provided examples of how nutritional strategies adapt over long, evolutionary timescales to various circumstances of a species' existence. In Darwin's theory of natural selection, this means that those variants of the species that showed the strategies in question – for example, reduced protein intake when harbouring mycetocyte symbionts, or minimising nutritional errors if a specialist feeder – derived some benefit compared with those that did not. In studying such evolutionary adaptations, it is often important to measure what these benefits might actually be. In this, the final section of the paper, we provide a brief illustration of how this can be done within our framework. The example we present is chosen for its simplicity; a mathematically more sophisticated approach can be found in Simpson, et al. (2003).

Our work has shown that African migratory locusts select and defend a specific point of intake in protein-carbohydrate nutrient space (Fig. 5). Since in that experiment they could, as explained in Section III E, have reached any point in the conical area between the rails representing the choice foods, the question arises *why* they selected the particular point that they did, rather than one of the other numerous points to which they had access? In evolutionary terms, such “why” questions boil down to this: what are the benefits that the animals derive from behaving as they do?

A straightforward way of examining this is to use experimental means to force some animals to select other points in nutrient space and then to compare their performance with that of animals free to select the preferred nutrient intake. The experiment presented in

Fig. 8 a takes us halfway towards that goal: by giving some groups of locusts nutritionally imbalanced foods, they were prevented from reaching the intake target, so forced to occupy other places within the nutrient space. For the cost-benefit analyses, we simply measure various consequences for the animals of occupying the different positions within the nutrient space.

Three such consequences are presented in Fig. 9. Here the x-axis represents the food rail (balance of nutrients), with high-protein foods on the left and high-carbohydrate foods on the right, and the vertical line labelled T gives the composition of the balanced (target) diet. The bottom panel shows the effects of rearing diet on the resistance to starvation in adult locusts (i.e., the duration the insects survived when they were reared on one of the diets then deprived of food altogether as they moulted into adults). The figure shows that locusts reared on high-protein foods were most vulnerable to starvation, with resistance improving as the proportion of carbohydrate in the diet increased.

The second panel shows why this is. Stores of fat in the body were proportional to the carbohydrate content of the diet, so that those locusts fed foods with low carbohydrate content had limited energy reserves on which to survive when deprived of food. This is, incidentally, an ecologically relevant scenario for locusts, since their food supply can be unpredictable, so that there is a good probability of starving to death in a natural situation.

From this it seems that a high carbohydrate intake is a good thing, giving rise to the question why locusts don't select a target even richer in this nutrient than they do. The top panel provides an answer. It shows that spontaneous deaths during development were high for locusts fed high-protein foods, decreased towards a minimum for the target food, and then increased steeply on foods containing excess carbohydrate. This shows that, although increased starvation resistance could be achieved by selecting a diet rich in carbohydrate, it would come at the cost of greatly decreased probability of surviving development to reproductive age.

There is an interesting *déjà vu* in these results – they resemble important aspects of the nutritional biology of our own species. In locusts, as in humans, the ability to accumulate fat stores is a very useful mechanism that has evolved to buffer against nutritionally lean periods. But there are also parallels of a less rosy nature: locusts fed carbohydrate rich foods developed excessive fat stores – they became obese – and suffered serious health problems. We have, it appears, uncovered an insect equivalent of what is probably *the* major nutrition-related health issue in the modern world, a topic to which we turn in our second article.

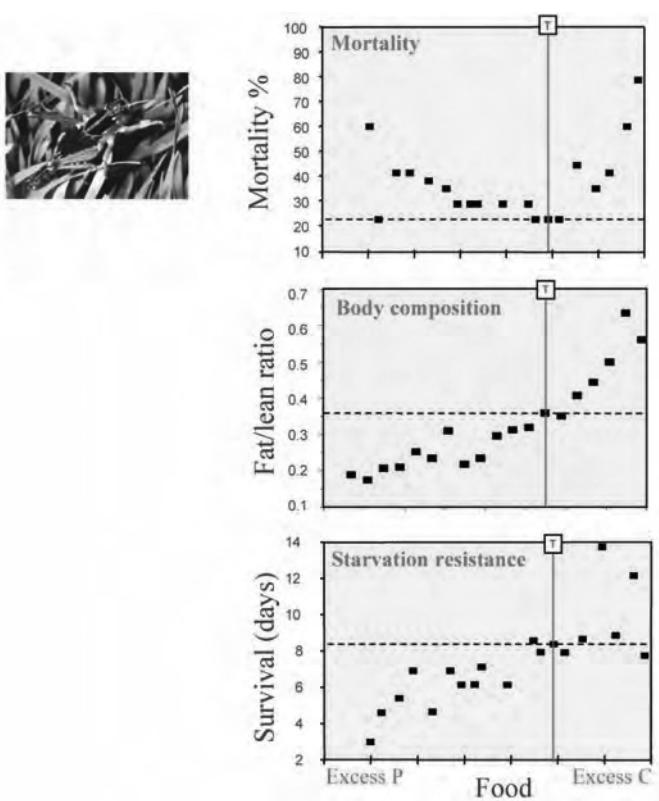


Fig. 9. Three consequences for African migratory locusts eating foods imbalanced in the relative proportions of protein to carbohydrate: spontaneous mortality during development, body fat content and resistance to starvation if raised on one of the foods then deprived of food altogether. The vertical line labelled T indicates the position of the nutritionally balanced food on the x-axis, to the left of which are foods containing excess protein and to the right foods containing excess carbohydrate.

VI. Conclusions

We have attempted in this article to show how a slight shift in focus from one to even two nutrients can go some way towards restoring order in the complex tangle of interactions that underlies the nutritional decisions of insects. In particular, it provides a set of concepts

– such as intake targets, nutritional rails, and rules of compromise – which help clarify how natural selection has shaped the nutritional biology of animals. An ultimate test is whether these concepts can contribute to the understanding of a much more complex species of animals, humans. In the following article, we put our approach to this test.

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THE GEOMETRY OF HUMAN NUTRITION

STEPHEN SIMPSON
DAVID RAUBENHEIMER

I. The Modern Human Nutritional Dilemma

In the previous article, we outlined an approach that we have developed to study the ways that nutrients interact in their influence on the nutritional biology of animals. The illustrations were drawn from research on insects, the group of animals that has featured most extensively in our research to date. In this article, we apply the approach to an analysis of some key aspects of human nutrition.

It is conservatively estimated that more than 1 billion people worldwide are overweight or obese. Rates of incidence are increasing, notably among the young, and the associated disease burden is immense (Must, et al. 1999; Björntorp 2001; Hill, et al. 2003). Fig. 1 plots the relative risk of dying prematurely as an adult against Body Mass Index (BMI), which approximates to body fatness and is calculated as body mass in kilograms divided by the square of height in meters. The curve is U-shaped – bringing to mind the final figure for locust mortality in the previous article. To the left, the risk of dying increases at low values of BMI. Clinicians categorise adults as underweight if they have a BMI of less than 18.5. To the right, risk of death rises as BMI exceeds 25. Adults with values between 25 and 30 are classed as overweight and those over 30 as obese. The target zone for health and longevity lies in between. If we humans were locusts, we would move inexorably to this target zone given adequate nutrition. Regrettably, in this case at least, we are not locusts.

Take as an example the USA, where currently 60% of adults are overweight or obese, while 25% are clinically obese. And the USA is not atypical – the same trend is seen in all developed countries and increasingly in developing countries, too. Why have we gone so badly wrong?

The answer lies in the interplay between the nutritional environment and regulatory physiology.

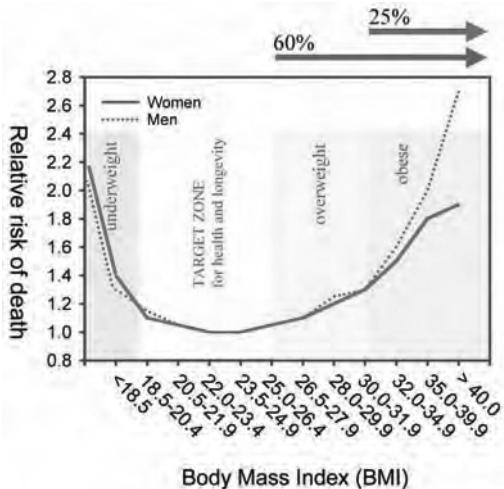


Fig. 1. The relative risk of dying prematurely as an adult against Body Mass Index (BMI) (based on Calle, et al. 1999).

As summarised in Fig. 2, the human nutritional environment has changed considerably over the past 35,000 years since the Upper Palaeolithic. Anthropologists and archaeologists have reconstructed the nutritional ecology of our forebears during this period (Eaton, et al. 1996). The main conclusion is that people then were probably energy-limited, because sources of simple sugar, fat and starch were rare. In contrast, protein was relatively abundant in the form of lean game animals. Skeletal analyses indicate that people were large, lean and healthy under such an environment.

The first major transition in human nutrition occurred 10,000 years ago with the agricultural revolution, when there was a large increase in the amount of starch in the diet. This lifted the energy limitation but may have been associated with protein limitation and also micronutrient imbalances. As a result, people were, on average, small, lean and less healthy.

The incorporation of carbohydrate into the diet increased further during the industrial revolution, due to the bulk refining and efficient transport of sugar. Around that time, most people were small and lean, with the wealthy few being corpulent.

Since the industrial revolution, there has been a further major nutritional transition, between and following the two world wars. Today in the developed world, we have an un-

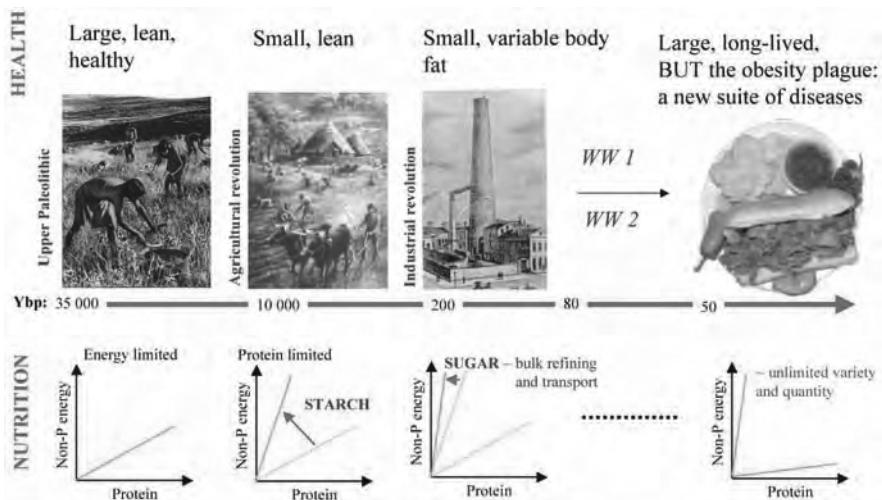


Fig. 2. A summary timeline for the changing human nutritional environment since the Palaeolithic.

preceded general access to all manner of foods and nutrients. We are large and long-lived, but are also suffering the obesity epidemic and an upsurge in a new set of non-transmissible diseases associated with our modern lifestyle.

In contrast to the changing nutritional environment, our physiology seems to have remained much more constant over the same timescale. There is evidence of genetic adaptation in human populations to changed patterns of food availability since the Upper Palaeolithic (e.g. Neel's (1962) "thrifty gene" hypothesis and the evolution of lactose tolerance among human populations with the advent of dairy herding), but the pace of evolutionary change in our metabolic physiology is considerably slower than the rate at which the human nutritional environment has altered (Diamond 2003).

If we are to understand how our "outdated" physiology interacts with our changed nutritional environment, we must answer three fundamental questions that were defined in the preceding paper:

1. Do humans regulate to an intake target?
2. What is the rule of compromise for humans?
3. How do humans deal with nutrient excesses – are we as effective as locusts at removing surplus ingested nutrients?

We will deal with these questions in turn, restricting our discussion to the three macronutrients – protein, carbohydrate and fat. We will then derive a new hypothesis to explain the obesity epidemic – the protein leverage hypothesis.

II. Do Humans Regulate to an Intake Target?

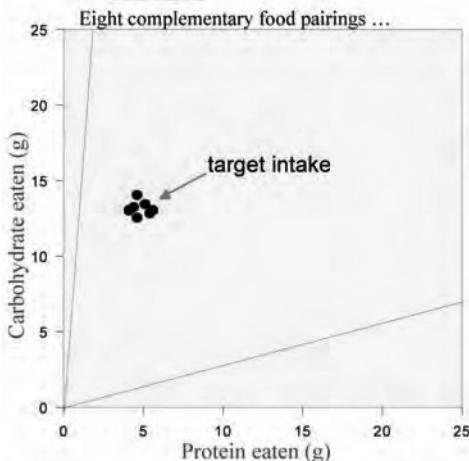
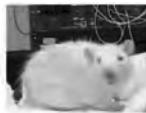
As yet, no properly controlled “defence” experiment, along the lines described in the preceding article for insects, has been done for humans. Partly for this reason, it remains contentious whether humans are able to regulate their intake of different macronutrients (Stubbs 1998; Friedman 2000; Berthoud and Seeley 2000). There are, nonetheless, three sources of information that suggest that we can regulate the intake of specific nutrients.

A. Comparative Data from the Rat

The rat is widely used as a model for human nutritional physiology. Reinterpreting published data on rats shows convincingly that these mammals have the capacity to regulate their intake of protein and carbohydrate (Simpson and Raubenheimer 1997). An example is shown in Fig. 3, in which we have replotted data collected by Theall, et al. (1984). Rats were provided with one of eight different complementary food pairings, and in every case converged on the same intake of protein and carbohydrate, indicating that these animals regulated their intake of both macronutrients.

B. Studies on Human Macronutrient Appetite

There are data that indicate that we have some capacity to regulate our intake of macronutrients, notably protein, despite the extreme complexity of our social and nutritional environments (see Simpson, et al. 2003). It appears that macronutrient-specific feedbacks operate over a period of 1–2 days, and that, at least for protein, we subliminally learn to associate foods with the nutritional consequences of eating them.



Conclusion:
Rats regulated both P and C to an intake target.

Fig. 3. Data for rats provided with one of eight different complementary food pairings (food rails not marked except for the two most extreme ratios). Rats converged on a point of protein-carbohydrate intake, indicating tight regulation of both macronutrients to an intake target (data from Theall, et al. 1984 reanalysed in Simpson and Raubenheimer 1997).

C. Population-Level Data

A striking feature of the human diet is that the *proportion* of protein in the diet is highly consistent across populations and across time, comprising 10–15% of total energy, whereas fat and carbohydrate vary (Westerterp-Platenga 1994, Fig. 4). And not only the *proportion* of protein, but also the *amount* is consistent, at least in some populations. Fig. 5 plots estimates for per capita intake for the UK population taken from the FAOSTAT database (<http://apps.fao.org/default.htm>). According to these data (which are based on nutrient supply rather than measures of actual intake), intake of protein and also fat and carbohydrate have remained remarkably stable since 1961. Not only that, they appear to have been “defended”. If we first take the case of dietary fat supply and break down the total into fats derived from animal and vegetable sources, it is apparent that during the mid-1980s intake

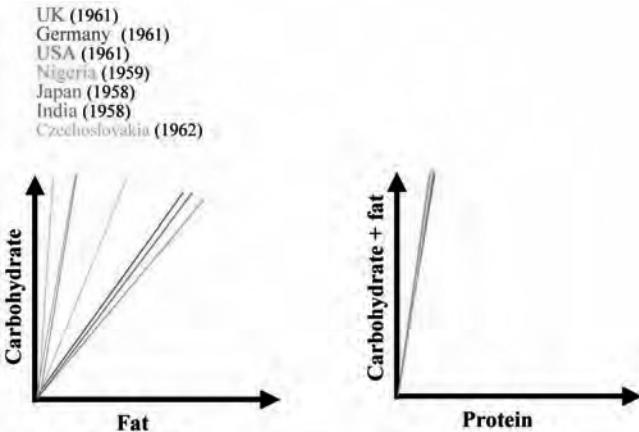


Fig. 4. Ratios of average macronutrient intake (scaled in units of energy) in various human societies during the late 1950s and early 1960s (from Westerterp-Platenga 1994 and FAOSTAT data).

of animal fats fell precipitously, presumably in response to the public health campaign urging people to eat less of these fats. Thus, at this time there was a perturbation in the nutritional environment – was there a compensatory change to counterbalance this? Yes – as can be seen in Fig. 5, the intake of vegetable fats rose in direct proportion to falling intake of animal fats, leading to maintenance of total fat intake at a constant level. Similar substitutions between food groups were also seen over the same period for protein and carbohydrate. Sugar intake fell and was compensated for by increasing consumption of complex carbohydrates (starches, fruit and vegetables). Declining consumption of beef, pork and lamb was compensated by increased poultry consumption, reflecting increasing availability and cheapness of the latter with increased industrialisation of poultry production.

But regulation of macronutrient intake is not always perfect, as strikingly illustrated by the USA, where carbohydrate and fat intake (as again estimated from FAOSTAT data) have risen substantially over the period 1961–2000 (Fig. 6). However, protein intake has risen to a lesser degree over the same period. As a result, in the USA there has been a shift in diet composition towards a lower ratio of protein to carbohydrate and fat, with protein comprising 12.5% as compared with 14% of total energy intake. Almost certainly this shift has been away from the intake target ratio. Understanding the effect of such a change requires knowledge of the rule of compromise.

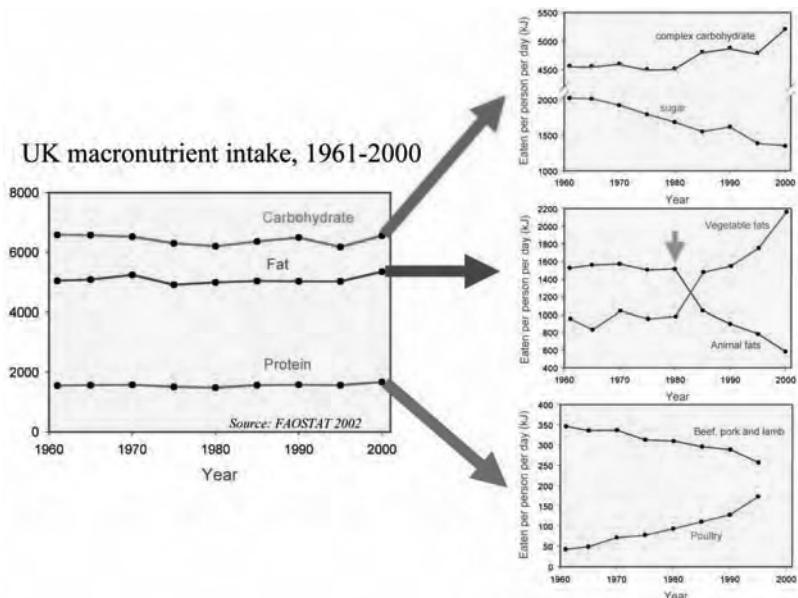


Fig. 5. Changing patterns of macronutrient supply (from which intake can be approximated) in the UK from 1961 to 2000, based on FAOSTAT data. See text for interpretation.

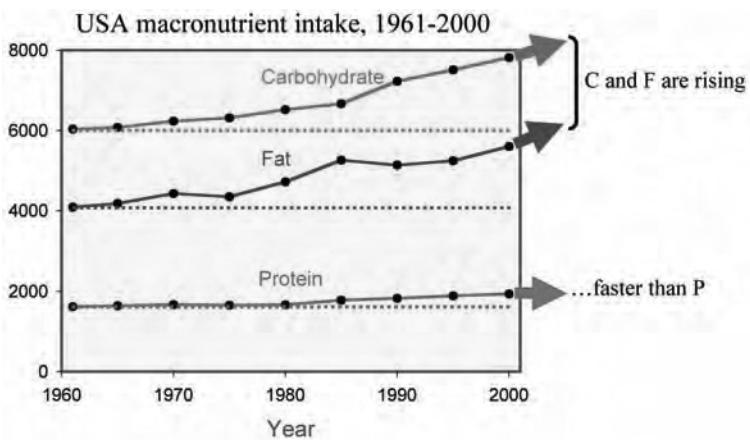
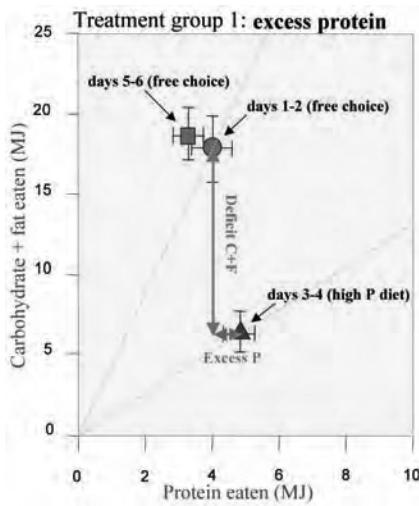


Fig. 6. Data as in Fig. 5, but for the USA.

III. What is the Rule of Compromise for Humans?

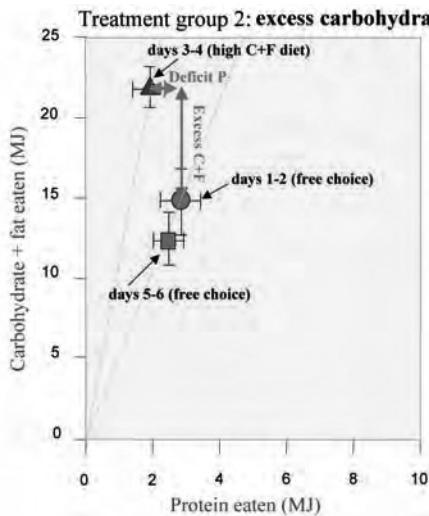
Recently, with our colleague Rachel Batley, we used our geometric framework to explore the human rule of compromise (Simpson, et al. 2003). It was a short-term experiment involving 10 subjects and focusing on intake of protein vs. carbohydrate and fat, the latter two being combined into a single nutrient dimension scaled in energy units (carbohydrate + fat). We decided to treat fat and carbohydrate as a single dimension since the existing evidence from humans and rats suggested to us that the key interaction was between protein and non-protein energy in the diet. Our subjects were domiciled together for 6 days. For the first two days, they were provided with the opportunity to select their breakfast, lunch, afternoon snack and dinner from a buffet of items comprising a wide range of macronutrient compositions. Everything they ate was weighed and their macronutrient intake was estimated from food composition tables. For the next two days, one group of subjects (treatment 1) was restricted to foods that were high in protein and low in carbohydrate + fat, while the remaining subjects in treatment group 2 were provided with only low-protein, high-fat + high-carbohydrate items. For the final two days of the experiment (days 5 and 6), all subjects were given the same free choice of foods as on days 1 and 2. The results are summarised in Fig. 7. The overriding message of the experiment was that when subjects were restricted to a diet that contained either a higher (treatment 1) or lower (treatment 2) ratio of protein to carbohydrate + fat than they had self-selected during days 1 and 2, they maintained their intake of protein at the expense of the regulation of carbohydrate + fat intake. Thus, treatment group 1 underingested carbohydrate + fat rather than overeat protein, while treatment group 2 overate carbohydrate + fat to gain limiting protein.

From these data, we can derive an hypothesis for the form of the human rule of compromise for protein vs. carbohydrate + fat, which is that when forced to trade off intake of protein vs. carbohydrate + fat, humans prioritise protein intake (a rule of compromise similar to that shown in the previous article for salt regulation in the locust). Are there other data that support this hypothesis? In Fig. 8, we have plotted the results from our experiment along with data recast from several earlier publications. As we predict, in all these cases where subjects were restricted to a diet consisting of a fixed ratio of protein to carbohydrate + fat, either in the short- or long-term, they maintained daily protein intake at a more constant level than that of the other two macronutrients. Also consistent with the hypothesis are comparative data from the rat (Fig. 9). Rats forced to eat a diet containing a lower protein-to-carbohydrate ratio than at the intake target maintained protein intake



Conclusion:

- *People under-ate C + F when the diet had too much protein: P intake maintained near constant



Conclusion:

- *People over-ate C + F to maintain protein intake on high C+F diets

Fig. 7. Results from our Swiss study (Simpson, et al. 2003). See text for details.

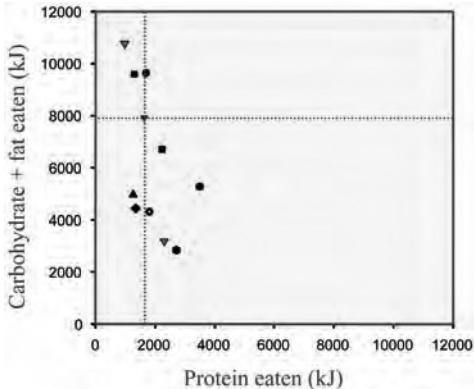


Fig. 8. Evidence of the rule of compromise in humans. ▼ Data from Simpson, et al. (2003) in which subjects were given a free choice of foods for 2 days before being restricted to either a low-P, high-C+F, or a high-P, low-C+F diet (see Fig. 7). The dotted lines intersect at the free-choice treatment. ■ Data from Skov, et al. (1999) in which subjects were restricted to a high-P or a low-P diet for 6 months; ● Data from Komoronski, et al. (2002), in which subjects were confined to a high-P diet for 14 days. Remaining points come from long-term studies [▲ Evans, et al. (1974) for a 20% P diet; ◆ Yudkin and Carey (1960), 23% P; ♦ Rickman, et al. (1974), 48% P; ○ Larosa, et al. (1980), 29% P] from Freedman, et al. (2001), Table 4. Taken together, the data strongly suggest that protein intake is prioritised when humans are restricted to nutritionally imbalanced diets.

constant, and in so doing overeat carbohydrate. In contrast, rats provided with a high-protein diet did not substantially overeat protein to gain their intake target level of carbohydrate.

IV. What are the Implications of Having Protein Intake Prioritised Over Fat and Carbohydrate?

The implications of such a rule of compromise are enormous when considering the modern nutritional dilemma. To illustrate this, we will consider four scenarios for the case of a 45-year-old, moderately active adult male 1.8 m tall and stably weighing 76 kg (BMI 23.5). His total daily energy requirements to remain in energy balance are ca. 10,700 kJ. Achieving a diet comprising 14% protein requires him to eat 1,500 kJ per day of protein and 9,200 kJ of carbohydrate and fat combined (Fig. 10). This represents a daily intake of 88 g protein and a total mass of carbohydrate and fat eaten that will depend on the relative

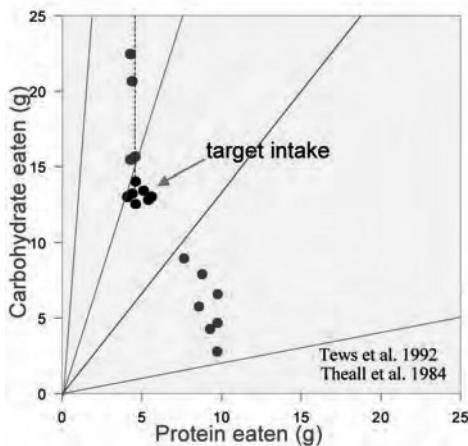


Fig. 9. The rule of compromise in rats: they prioritise protein intake (Theall, et al. 1984; Tews, et al. 1992).

proportions between the two in the diet, given that fat has twice the energy density of carbohydrate. As before, we will combine fat and carbohydrate into a single value for energy, since their relative contributions are not germane to the logic of our argument.

The four scenarios are:

A. There is a Shift to the Diet Containing a Higher % Carbohydrate + Fat

This could occur where fat- and/or carbohydrate-rich foods are more accessible, more affordable, in greater variety, or more palatable than alternatives (Hill, et al. 2003), leading to people being effectively trapped on a sub-optimal diet. Under such circumstances, maintaining the amount of protein eaten requires over-consumption of carbohydrate + fat.

Since protein is a minor component of the total diet, only a small decrease in % protein results in a substantial excess of carbohydrate + fat eaten – what we could call the protein

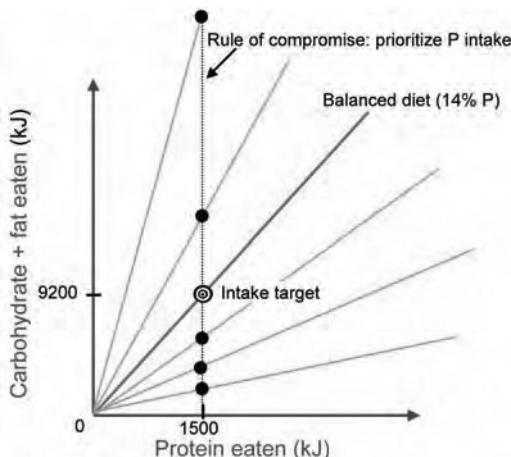


Fig. 10. A hypothetical case of the intake target for a 45-year-old man whose daily intake target is 1,500 kJ of protein (14% of total energy intake) and 9,200 kJ of carbohydrate and fat combined and whose rule of compromise is to prioritise protein intake.

leverage effect. Let us return to the above example of the USA, where the FAOSTAT data suggest that, since 1961, the average diet composition has changed from 14% protein:86% carbohydrate + fat to 12.5% protein:87.5% carbohydrate + fat. Maintaining protein intake under these circumstances requires a 14% increase in carbohydrate + fat eaten (Fig. 11 A). A further reduction to 11% protein in the diet would lead to a 32% increase in intake of carbohydrate + fat (Fig. 12).

The implications for body weight regulation are clear: unless the excess carbohydrate + fat ingested to maintain protein intake is removed, i.e. through increased physical or metabolic activity, body weight will rise, predisposing to obesity.

One important caveat that must be considered here is that the opportunity to overeat carbohydrate + fat to an extent sufficient to reach the protein intake target will depend on the energy density of the foods available. Where the ratio of protein to carbohydrate + fat is lower than the intake target ratio, but nutrient density is low (e.g. in the diets of macrobiotic vegetarians), physical bulk may inhibit reaching the protein intake target (see Rolls, 2000), thus leading to cessation of intake before the protein target is reached. In contrast, the fact that modern processed foods are often energy-dense makes it easy to achieve the protein target on a diet with a lower than optimal ratio of protein to carbohydrate + fat.

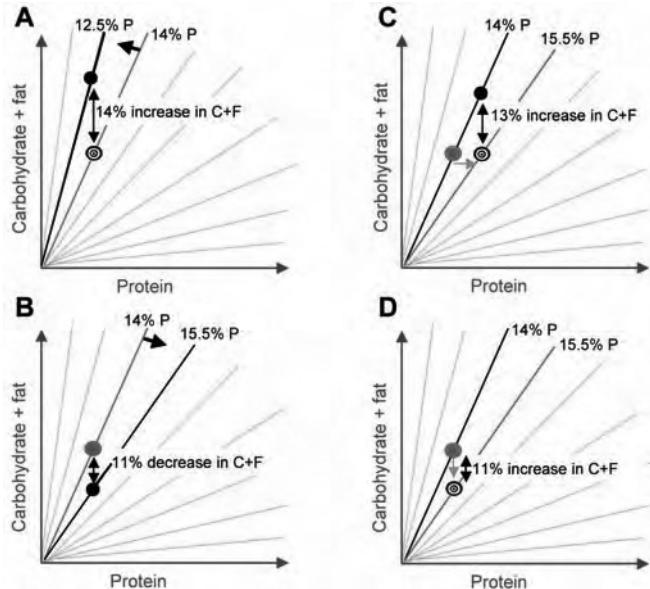


Fig. 11. The consequences of four nutritional scenarios, given a rule of compromise that is to maintain protein intake. See text for details.

B. There Is a Shift to a Diet Containing a Higher % Protein

If humans are restricted to a diet that contains a higher % protein, yet the absolute amount of protein eaten is regulated to the intake target, the result will be that carbohydrate + fat intake will fall, bringing the body into energy deficit and promoting weight loss. A 1.5% increase in dietary protein from 14% to 15.5% results in an 11% decrease in C+F eaten (Fig. 11 B). As seen in Fig. 8, available data suggest that some overconsumption of protein is tolerated, but not sufficient to maintain carbohydrate + fat intake. This explains why high-protein diet regimes promote weight loss (Freedman, et al. 2001; Elsenstein, et al. 2002).

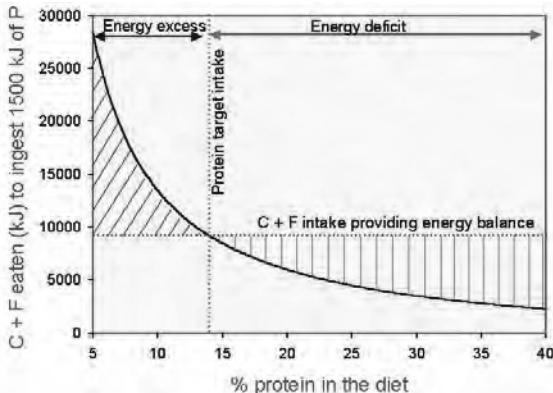


Fig. 12. The protein leverage effect. Minor changes in the % protein in the diet will translate into large perturbations in carbohydrate + fat intake if the human rule of compromise is to maintain protein intake.

C. There Is an Increase in the Requirement for Protein

If diet composition remains unchanged, yet protein requirements increase, then overconsumption of carbohydrate + fat will result (Fig. 11 C). Shifting the intake target ratio from 14% to 15.5% P in the diet leads to a 13% increase in carbohydrate + fat eaten – with attendant risks of weight gain. But under what circumstances might this occur?

One source of protein loss is hepatic gluconeogenesis, whereby amino acids are used in the liver to produce glucose. This is inhibited by insulin, as is the breakdown of muscle proteins to release amino acids, and therefore usually occurs mainly during periods of fasting. However, inhibition of gluconeogenesis and protein catabolism is impaired when insulin release is abnormal, insulin resistance occurs, or free fatty acids circulate in the blood at high levels. These are interdependent conditions that are associated with overweight and obesity and are especially pronounced in Type 2 diabetes (Saltiel and Kahn 2001; Boden 2002). The result is an increased requirement for protein. Unless either more high-protein, low-carbohydrate + fat items are included in the diet (i.e., scenario IV B) or rates of removing excess co-ingested carbohydrate + fat are increased, weight gain will occur. And the system becomes unstable – the increased fat deposits [especially abdominal fat (Saltiel and

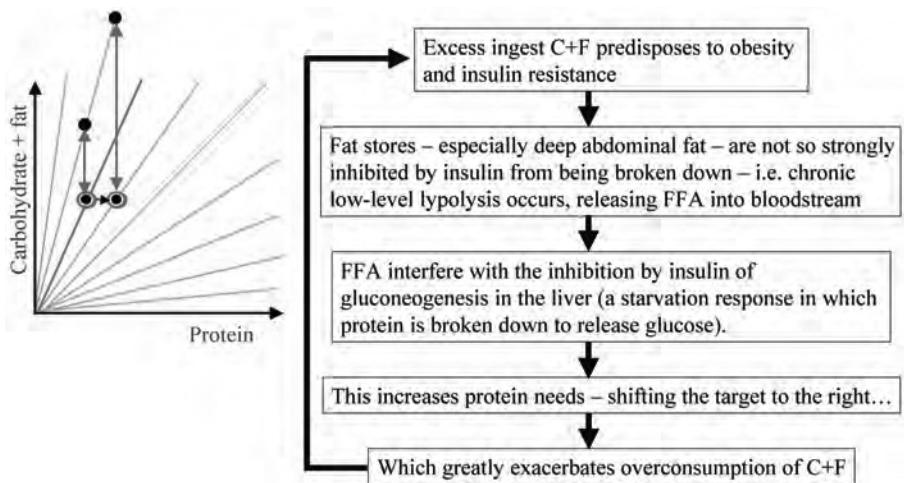


Fig. 13. The vicious cycle in which protein appetite may drive obesity.

Kahn 2001)] will further increase protein needs, which will in turn drive even greater weight gain (Fig. 13).

D. Diet Remains Unchanged But Exercise Levels Decline

The intake target level of non-protein energy is that required to maintain energy stasis. As such, it includes a component for energy expenditure through exercise and thermogenesis – both of which can change with lifestyle and temperature. It seems that while humans respond by increasing intake following very high levels of high energetic expenditure, we are less responsive to lowered needs (IARC 2002). But why should the mechanisms controlling our feeding behaviour be “hard wired” to “assume” that a certain level of energy intake will be required to fuel metabolism? Studies of modern day hunter-gatherers, such as the Aché of Paraguay and the Kung of southern Africa, suggest that our ancestors expended 1.8 times their resting metabolic energy expenditure, whereas a modern couch potato is considerably less active (Fig. 14). It seems that our intake target has evolved to “assume” a certain level of energy expenditure, and we may therefore be “hard wired” to eat that amount, even if we do not use it.

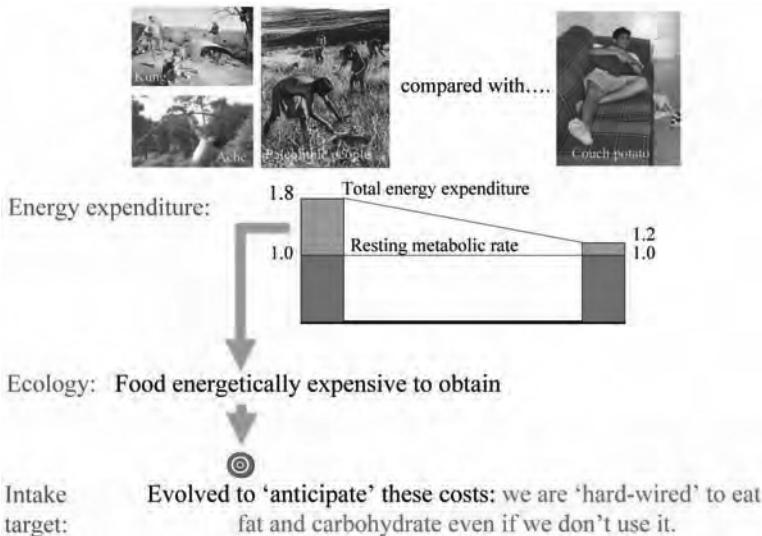


Fig. 14. The modern lifestyle involves less energy expenditure, but we are programmed to assume a higher energy expenditure.

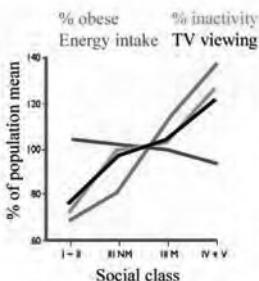
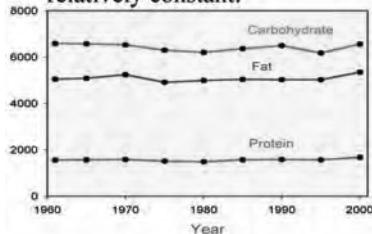
For example, as we discussed above, in the UK macronutrient and energy intake has remained relatively stable over the past 40 years, yet obesity has risen rapidly, in direct correlation with causes of declining activity levels, such as the use of cars and television viewing (Prentice and Jebb 1995) (Fig. 15). As well as lowering the demand for fuel, decreasing levels of exercise has a direct influence on metabolic physiology, being associated with increased resistance to insulin and thus enhanced gluconeogenesis (IARC 2002).

Therefore, the result of lowered levels of exercise is, in effect, to lower the position of the intake target on the carbohydrate + fat axis (Fig. 11 D), while causing protein requirements to increase (scenario IV C). Unless the diet changes towards a higher % protein, the result will be weight gain.

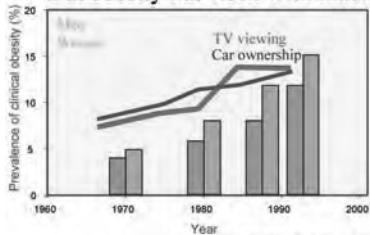
E. Interacting Consequences

The scenarios introduced above are not independent. Either shifting the diet composition to a lower % protein (scenario IV A), or effectively doing the same by having low levels of

In the UK intake has remained relatively constant:



But obesity has risen with inactivity



Conclusion:

Intake is regulated, but to a point that in inactive lifestyles can lead to obesity.

Fig. 15. The relationship between lowered exercise levels and obesity.

energy expenditure (scenario IV D), will result in overconsumption of carbohydrate and/or fat to maintain protein intake. This in turn will predispose towards weight gain and lead to disinhibition of gluconeogenesis, which will increase protein demand (scenario IV C). Unless this increased demand is met by selecting high-protein foods, protein appetite will drive increased intake of carbohydrate + fat, resulting in further weight gain, and so on in a vicious cycle leading to obesity and its associated diseases.

This cycle is broken when protein intake is increased independently of carbohydrate + fat (scenario IV B), which requires access to high-quality protein-rich foods that are low in carbohydrate + fat. Very high protein diets (> 35% of energy from protein) are currently promulgated in the popular diet literature, but are associated with potential health risks such as bone decalcification and kidney stones (Freedman, et al. 2001; Elsenstein, et al. 2002). However, it can be seen from Fig. 11 B that only relatively small increases in dietary % protein are predicted to lower intake of carbohydrate + fat. The result would be to pro-

mote weight loss and the likely rectification of associated metabolic disturbances (Parker, et al. 2002).

There are obvious socio-economic implications of the protein leverage effect. Obesity is most prevalent among the less affluent sectors within societies with established market economies (Prentice and Jebb 1995; Björntorp 2001) (Fig. 15). Levels of exercise are lower, intake of inexpensive, processed foods – which tend to be high in % carbohydrate + fat – is greater, and high-protein foods such as lean fish and meat are relatively more expensive to those on lower incomes than to the more affluent.

The key assumption upon which our hypothesis resides is that when humans are forced to trade off protein intake against that of carbohydrate and fat on nutritionally imbalanced diets, they prioritise protein. If this is true, then all else that we say must follow – it is a mathematical inevitability. We have provided evidence which suggests that this is the case. Given the implications that follow from our hypothesis, we would suggest that quantifying what we term the “rule of compromise” for protein versus fat and carbohydrate is a vital subject for future research in human nutrition.

V. How Do Humans Deal with Nutrient Excesses?

The extent to which weight gain occurs following ingestion of excess nutrients depends on what happens to such excesses once they enter the body. There is a clear relationship between the priority with which surplus nutrients are voided from the body through being metabolised and excreted, and the extent to which they are stored (Stubbs 1998) (Fig. 16). Excess carbohydrates are readily metabolised and excreted, and stores are minimal (in the form of glycogen in the liver and muscles). Surplus protein is also metabolised and excreted with high efficiency, and little if any is stored. In marked contrast, ingested fat is the last fuel to be burned, and excesses are mostly stored in adipose tissue – a store with virtually unlimited capacity. These metabolic patterns are consistent with our having evolved in an environment where energy was limited and periods of food scarcity were not uncommon.

VI. Conclusions and Perspectives

An analysis of the modern human nutritional dilemma using our geometric framework leads to the following conclusions.

$$\text{Intake} = \text{Growth \& Storage} + \text{Fuel} + \text{Excretion}$$

$$+ \\ +$$

Excess

Excess P	Not stored	Burnt	Excreted
Excess C	Some stored	Burnt	Excreted
Excess F	Most stored	Little burnt	Little excreted

Because humans were energy limited?

Fig. 16. The metabolic hierarchy in humans. We store excess ingested fat and retain it until other fuels are depleted.

A. The Intake Target

The available evidence suggests that humans can regulate macronutrient intake, but that the intake target contains a built-in component for fat storage. This has probably evolved to “anticipate” energetic demands, i.e. for activity and thermoregulation, and also periods of food shortage. Failure to use this stored fat, e.g. through insufficient exercise, promotes obesity.

B. Rule of Compromise

When faced with imbalanced diets, protein intake is prioritised. Therefore, on low-protein/high-carbohydrate + fat diets, carbohydrate and/or fat are overeaten; and on high-protein/low-carbohydrate + fat diets, carbohydrate and/or fat are undereaten. When the ratio of protein to carbohydrate in the diet is lower than optimal, it is easier to gain the required amount of protein – and hence to overeat carbohydrate + fat – the higher the energy density of foods. High energy density is a key feature of the modern western diet. Regarding dietary causes of obesity, most emphasis in research over the past 40 years or

more has been on changing patterns of fat and carbohydrate consumption. In contrast, the role of protein has largely been ignored, because a) it typically comprises only 10–15% of dietary energy and b) protein intake has remained near constant within and across populations throughout the development of the obesity epidemic. We have shown that, paradoxically, these are precisely the two conditions that provide protein with the leverage both to drive the obesity epidemic through its effects on food intake and potentially to assuage it.

C. Post-Ingestive Regulation

Regulation of nutrient intake has evolved “assuming” a higher level of energetic expenditure than is usual today. Energy limitation in our ancestral nutritional environment may well explain our predisposition to store fat and poor ability to void excesses. The combined consequences of the interactions between our regulatory physiology and our changing nutritional environment can be seen in Fig. 1.

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Seminarberichte

VERTEBRATE VOCAL PRODUCTION *IN VIVO* AND *IN SILICO*¹

TECUMSEH W. FITCH

In recent years, despite great gains in our understanding of animal sound perception, there has been a growing realization that an important component of animal vocal communication has been neglected: vocal production (the mechanisms by which animal sounds are made). Indeed, although acoustic communication logically begins with sound production, a cursory glance in any of the leading journals will show that research labeled “bioacoustics” typically concerns only the sound-transmission and perception side of the vocal communication equation. This lack is made more salient by the fact that many if not most of the sounds that the auditory system is “designed” to hear are created by other animals, often of the same species (as opposed to vision, where nonbiological stimuli play a role equally as important as visual stimuli generated by conspecifics). Part of the reason for overlooking vocal production has been historical: only recently have the tools (both intellectual and technological) necessary to study vocal production become available. But part of the reason is systemic: vocal production is a highly interdisciplinary topic, encompassing branches of physics, physiology, neuroscience, ethology, and evolutionary biology, and it is not always easy to bridge the terminological and conceptual gaps between experts in these different disciplines.

In April 2003, the Wissenschaftskolleg sponsored a highly successful interdisciplinary workshop on vertebrate vocal production, organized by Fellow Tecumseh Fitch with the support of Britta Cusack and Reinhart Meyer-Kalkus. This workshop brought together two leading physicists working on human vocal production (speech and singing) with some of the top biologists currently studying sound production in animals (mammals, birds, and frogs). The importance of interdisciplinary collaboration is perhaps best illustrated by an example. Vocal anatomists deal with extremely complex three-dimensional systems, and it is quite difficult, based on anatomy alone, to derive clear conclusions about vocal produc-

¹ Seminar, sponsored by and held at the Wissenschaftskolleg on April 9–12, 2003.

tion. Similarly, bioacousticians can analyze recordings of sounds, but it is often not even clear where a particular sound is being produced anatomically, much less how this production system is controlled. For instance, birds possess a complex specialized organ, termed the syrinx, which lies deep in the chest and generates bird song. Because of its small size and inaccessible location, birdsong researchers have had to make educated guesses, based on the anatomy of the syrinx, about which of the many membranes in the syrinx actually generate sound. Recently, endoscopic technology had advanced to the level where it was finally possible to directly view the syrinx of a singing bird *in vivo*. Using a medical imaging system designed to snake through human arteries into the heart, conference participants Ole Larsen and Franz Goller passed an endoscope down the trachea of an anesthetized bird and became the first humans to actually witness the vibrating membranes involved in birdsong. The sound source turned out to be a completely different structure than those previously supposed responsible!

The first and most basic goal of the conference was to share information across disciplines, so each participant gave a detailed introduction to his subject area. The second and most exciting goal was to use computer modeling as a basis for forging a common language that all of these disciplines can use to communicate. Computer simulation has become one of the most important tools available to natural scientists seeking to understand complex systems. Whether in physics, geology, meteorology, or biology, many questions at the current limits of our scientific understanding are far too complex to be modeled by equations simple enough to be solved by inspection. Instead, scientists use these equations to make models, at varying levels of complexity, which can then be “run” on a computer. By varying the many parameters of such an *in silico* model and then observing the outcomes, scientists using simulations can thus both increase their understanding of the system and generate predictions about what is and is not crucial. These in turn serve as indicators for biologists about what to look at and measure more carefully *in vivo*. Just as in theoretical and experimental physics, these two enterprises should form complementary, interdependent components of a successful research program. Unfortunately, though, the computational complexities of computer modeling have rendered this the domain of physicists and engineers, while biologists typically have their hands full with the anatomy, physiology, and neural control side of the problem. Thus an important desideratum for this conference was to begin to create an integrated international community of scientists from both sides, with the goal of making adequate computer models of the vocal production system as the “glue” to bind them together. While the immediate goal of computer models is increased under-

standing of vocal production, ultimately, models of sound production in other animals allow a scientist to flexibly create realistic animal sounds. Such synthetic calls can then be used in playback experiments in the field to improve understanding of the meanings of animal sounds (as I have done in my own field work), and thus greatly deepen our understanding of animal communication.

At the heart of our interdisciplinary endeavor was physicist Hanspeter Herzel (Institute of Theoretical Biology, Humboldt University, Berlin), a leading light in contemporary speech acoustics and a pioneer in understanding the role of nonlinear dynamics in vocal production. Herzel and his colleagues (including Patrick Mergell and Jürgen Neubauer) have worked for several years with the author to develop models of the mammalian larynx, and several papers have already come out of this collaboration (which has been supported by the Wissenschaftskolleg over several years). Herzel's approach, typical for a physicist, is to build gradually from what is understood and thus to start with simple models that can be clearly and intuitively understood (indeed the vocal fold model Herzel developed with Ina Steinecke has become one of the standard models in the field of speech science). Taking such simple human models and adding components that are seen in animals has been a productive way to better understand animal vocal production. The second major contributor to the *in silico* component of the conference was Ingo Titze, Director of the National Center for Voice and Speech in Denver. Titze is the world's leading expert on the physiology of singing and an accomplished singer himself, as well as one of the first scientists to develop complex computer models of the human vocal folds. Trained in engineering, Titze's traditional approach has been the complement of Herzel's: to make as few simplifying assumptions as possible and to model the vocal production system in great detail. Together, these two scientists thus represented the two poles of approaches to computer simulation of the voice.

The workshop officially started with an evening colloquium, open to the public, by Tecumseh Fitch on the evolution of human language. Most of the conference participants arrived for this and joined the Fellows for cocktails afterwards. The *in vivo* component of the conference was launched the next day with an introduction to the evolution of the vertebrate vocal system by Tecumseh Fitch. This was followed by a comprehensive introduction to amphibian vocalization and vocal production by frog acoustics expert Andreas Elepfandt (Institute of Biology, Humboldt University, Berlin). An introduction to the anatomy underlying vocal production in mammals, along with a survey of the many fascinating modifications of mammalian vocal anatomy, was given by anatomist Roland Frey

(Institute for Zoo Biology and Wildlife Research, Berlin). Finally, a detailed overview of vocal production systems in nonhuman primates was given by Uwe Jürgens (German Primate Center, Göttingen), who provided a masterful introduction to the physiology of primate vocalization, from respiratory muscles all the way up to cortical control. This was followed by Thursday night dinner with the other Wiko Fellows.

The second day started with a detailed and illuminating introduction to voice modeling and voice models by Hanspeter Herzel. Thereafter the session focused on birdsong and included two of the leading biologists currently studying sound production in birds: Franz Goller (Institute of Biology, University of Utah) and Ole Larsen (Institute of Biology, Odense). (A German expert on avian vocal and respiratory anatomy, Hans-Reiner Duncker, was unable to participate due to illness.) These experts gave a comprehensive overview of what is known about bird vocal production, much of it thanks to their own efforts, and showed stunning videos of the vibrating syrinx in action. They were joined by the youngest participant, Ph.D. student Coen Elemans (Department of Animal Sciences, University of Wageningen) who described new results derived from a physical (rather than computer-simulated) model of the avian vocal tract.

The conference ended with a wrap-up discussion highlighting outstanding problems and sketching out a road map for future modeling efforts (work already underway in Herzel's lab). The most exciting immediate development was the proposal of a hypothesis on the function of a membrane (the medial tympaniform membrane) long suspected to play a role in birdsong, based on an analogy with the human falsetto singing voice discussed by Ingo Titze, and a planning of two distinct modeling approaches to test this hypothesis. More generally, this intense three-day workshop helped to resolve outstanding issues concerning the usefulness of simple vs. complex models and the kinds of data that biologists need to collect to support future computational efforts. It is now quite clear that the study of animal sounds has reached a watershed moment and that, with concerted interdisciplinary efforts, our understanding of how animals make sounds and what they mean will be considerably deepened in the coming years. This is valuable not just due to the intrinsic interest of the subject, but also because it provides crucial background for understanding the evolution of speech and language in humans. It is a testament to the Wiko's understanding of the importance of interdisciplinary collaboration that they made this conference possible and created the conditions under which it could be such a success.

Participants

Coen Elemans, Department of Animal Sciences, University of Wageningen

Andreas Elepfandt, Institute of Biology, Humboldt University, Berlin

Tecumseh W. Fitch, Wissenschaftskolleg zu Berlin and School of Psychology,
University of St. Andrews

Franz Goller, Department of Biology, University of Utah

Roland Frey, Institute for Zoo Biology and Wildlife Research, Berlin

Hanspeter Herzel, Institute for Theoretical Biology, Humboldt University, Berlin

Uwe Jürgens, German Primate Center, Göttingen

Ole Larsen, Institute of Biology, University of Odense

Ingo Titze, National Center for Voice and Speech, Denver

THE LIMITS OF RATIONALITY¹

ALEX KACELNIK

During the academic years 2001/02 and 2002/03, the Wissenschaftskolleg hosted a focus group entitled “The Sciences of Risk”. The project involved Fellows, guests of the Rector, guests of the Fellows and special invitees to two workshops. The project as a whole was aimed at casting a multidisciplinary glance on the interaction between normative and mechanistic approaches to research on decision-making in both human and non-human organisms (animals and plants). The first workshop was held in May 2002 (see *Wissenschaftskolleg Nachrichten* 11, 2002 and *Wissenschaftskolleg Jahrbuch* 2001/02), and dealt with decisions under uncertainty. The second, held in May 2003 under the title “The Limits of Rationality”, dealt with both deterministic and non-deterministic problems, but focused more strictly on non-human organisms.

The workshop was suggested by the realisation that while many theoretical advances result from the fusion of economic ideas of optimality with principles of biological evolution, empirical studies in humans and animals often report systematic violations of fundamental properties of economically rational behaviour. Some of these violations have been found in animals’ responses to risk, thus hitting at the core of the focus group’s interests. These reports include violations of transitivity and regularity, both considered hallmark properties of rational behaviour. Researchers claim that hummingbirds, jays and bees modify their attitude towards risk depending on the context of their choice, in some cases reversing their preference, depending on the presence or absence of less preferred (and then theoretically irrelevant) options. These observations contradict axiomatic principles of rational choice. In other puzzling observations, starlings and pigeons have been seen to prefer one kind of reward to another simply because they were harder to obtain, an animal behaviour analogue of the so-called “Sunk-Cost” and “Concorde” fallacies in human

¹ Workshop held at the Wissenschaftskolleg zu Berlin, May 8–10, 2003, supported by the Otto and Martha Fischbeck Foundation.

behaviour and evolutionary theory. At the same time, other workers have questioned the interpretation and generality of these observations, pointing to experiments in which decision-makers (including starlings) follow the principles of rational choice rather fastidiously. The significance of these controversies is clear and underlies the group's decision to summon the main actors to discuss them face to face in a workshop: "mistakes" (that is, suboptimal behaviour due to random factors) are not a worrying concern, but systematic misbehaviour is a different matter. If systematic maladaptive behavioural trends are widespread, theoretical biologists face the challenge of developing suitable accounts of how these trends might have evolved and why they are evolutionarily stable, that is, why are they not weeded out by natural selection. Cataloguing examples of maladaptive behaviour is not a research programme with which modern biology can cohabitiae happily. A proliferation of publications in the main biological journals, where strongly held contradictory views were expressed, made this workshop timely and promising.

The workshop brought some of the main originators of this literature together with experts on experimental economics and human behavioural research. Intense and productive discussions were held for two days in a convivial but sometimes lively and robust exchange of perspectives.

Some authors (Hurly, Bateson, Shafir, Waite) described elegant new experiments demonstrating how conventional principles of rational choice are violated by birds and insects under appropriate circumstances; others (Schuck, Pompilio, Simpson, Raubenheimer, Kacelnik) argued that most of these violations can be explained by changes in the state of the subjects and were not, after all, violations of biologically optimal strategies. From researchers on human decision-making (Todd, Hutchinson) came the strong view that the origin of many of these violations can be found in the paradoxical consequences of the use of simple heuristic rules for choice, which can lead to preferring less rather than more information and less rather more choice in exchange for faster mechanisms that are easier to implement. The economists at the meeting (Eckel, Sugden), meanwhile, brought the refreshing notions that what may be misleading is the assumption that the paramount principles of economic rationality actually do reflect optimal and realisable strategies or that metrics of preference in the most influential experimental paradigms actually do express general properties of the subjects. (Eckel's analysis of lack of correlation between the most widespread metrics of risk appetite in human experiments caused deep concern to the experimentalists among the audience.)

The deliberations at Wiko were complemented by enjoyable and productive discussions during walks in the Grunewald, appropriately lubricated by excellent beer. All participants learned a great deal from each other and several collaborations were planned as a consequence of the workshop.

Speakers

Melissa Bateson, University of Newcastle

Cathy Eckel, Virginia Polytechnic Institute and State University

Gesine Hofinger, Wissenschaftskolleg zu Berlin and Universität Bamberg

Andy Hurly, University of Lethbridge, Alberta

John Hutchinson, Max-Planck-Institut für Bildungsforschung, Berlin

Alex Kacelnik, Wissenschaftskolleg zu Berlin and University of Oxford

Lorena Pompilio, University of Oxford

David Raubenheimer, Wissenschaftskolleg zu Berlin and University of Oxford

Miguel Rodríguez-Gironés, Wissenschaftskolleg zu Berlin and Estación Experimental de Zonas Aridas, Almería

Cynthia Schuck, University of Oxford

Sharoni Shafir, Hebrew University of Jerusalem

Stephen Simpson, Wissenschaftskolleg zu Berlin and University of Oxford

Robert Sugden, University of East Anglia, Norwich

Peter M. Todd, Max-Planck-Institut für Bildungsforschung, Berlin

Thomas Waite, Ohio State University

Participants



C. Schmitz, S. Simpson, B. Cusack

R. Gadagkar, G. Hofinger, C. Eckel, T. Waite

M. Bateson, P. M. Todd, A. Hurly, D. Raubenheimer, R. Sugden, M. Rodríguez-Gironés

A. Kacelnik, S. Shafir, L. Pompilio, C. Schuck, S. Kipper, H. Hultsch

MEMORY BETWEEN IMAGE AND NARRATIVE:
AN INTERDISCIPLINARY APPROACH¹
CARLO SEVERI

Bild ist dasjenige, worin das Gewesene mit dem Jetzt blitzhaft zu einer Konstellation zusammentritt.
(Walter Benjamin. *Das Passagen-Werk*, ed. R. Tiedemann, 578, N 3, 1. Frankfurt, 1982.)

The link between various kinds of narratives and the construction of social memories has, after the work of Paul Ricoeur and many other scholars, become obvious to historians, anthropologists, and social scientists in general. If, as Ricoeur has argued, to narrate a story is not only a way to recall it, but also a means “to refigure one’s own experience of time” (Ricoeur 1991: 9), then narrativity has to be seen not only as a particular literary style, but also as a form of existence of memory itself. From this perspective, many historians (White 1973), but also some psychologists (Bruner 1990), have been tempted to argue that no memory is imaginable without a narrative frame. Ricoeur writes for instance:

“Le temps ne devient humain que dans la mesure où il est articulé sur un mode narratif, et le récit n’atteint sa signification première, que quand il devient une condition de l’existence temporelle.” (1991: 105)

The relation of social memory to images is less clear. All his life, Aby Warburg (1932) tried to outline a general theory of social memory based on images as well as on texts. His emphasis on the complex relations between visual symbols and meaning, on the necessity to consider a picture or a sculpted object as an element in a series of representations that might involve ritual actions, texts, oral traditions, or even mere mental images, certainly

¹ Workshop held at the Wissenschaftskolleg zu Berlin, June 6–15, 2003 supported by the Otto and Martha Fischbeck Foundation.

is a decisive step toward a new approach to this question. Since his death, however, Warburg's ideas on social memory have been poorly developed, and much has still to be done to understand how a cultural tradition can rely upon images.

However, recent anthropological research on cultural traditions suggests that there are at least two ways of constructing social memories. One works through the narration (and continuous renewal) of a set of stories. The other, often linked to the elaboration of a ritual memory, tends to make a number of relatively stable images more and more complex: more and more "loaded" with meaning, and more and more persistent in time.

The task of the seminar was to approach these aspects of the role of memory in the constitution of a cultural tradition, from three different perspectives. The first is anthropological research, based on empirical fieldwork as well as on comparative analysis of memory techniques and practices in the so-called "oral traditions". The second perspective is the cognitive one. It has become quite clear that no empirical work on "oral traditions" or on other memory-related techniques can afford to ignore what psychologists have to say about the cognitive processes involved in these processes. The third perspective is the historical one: a number of works on writing systems and on the arts of memory in our own history have proved very fruitful, and still are an example for anthropologists interested in these topics.

In accordance with these different perspectives, the Seminar was organized in three sessions:

1. Memory and Cognition for Cultural Traditions

David Rubin, Duke University, NC

Visual Imagery and Narrative Reasoning: Two Systems that Structure Memories

Pascal Boyer, Washington University in St. Louis, MO

Religious Thought Requires no Memory: Supernatural Concepts as a By-Product of Brain Function

Katherine Nelson, Columbia University, New York, NY

Individual Memory and Social Narrative: A Developmental View

2. Iconographies and Oral Traditions: Case Studies in Anthropology

Carlo Severi, Wissenschaftskolleg zu Berlin and Centre National de la Recherche Scientifique, Paris

Image and Narration in the American Indians' Picture-Writing

Michael Oppitz, Zurich/Berlin

Image and Narrative in the Nepali Shamanistic Traditions

Anne-Christine Taylor, Centre National de la Recherche Scientifique, Paris

Body Painting as a Mnemonic Device: Three Case Studies in Amazonia

3. Images and Narratives in Early Writing Systems

Jan Assmann, Heidelberg University

Cultural Memory and Cultural Texts

Jean-Jacques Glassner, Centre National de la Recherche Scientifique, Paris

Proper Names and Gods' Names in Writing

Viola König, Dahlem Ethnological Museum, Berlin

Memory Between Image and Narrative: Myths of Origin and Migration Legends from Mesoamerica as Shown in the Codices

Three main points have emerged from the discussion, which has been lively and productive:

1. A significant number of processes of propagation of representations in a society (though not all, as argued in Boyer's thought-provoking paper) involve mnemonic processes.

2. The narrative and iconic modes of memorizing knowledge, however, are not to be seen as separate ways of mental representation. They seem to interact in very significant ways. Both from the point of view of psychology (Rubin, Nelson) and from the point of view of anthropological research (Severi, Assmann, Taylor, Glassner), it appears that the intervention of iconic traits within a narrative context results in intense saliency. For instance, "sound images" (like repetitions, interjections, etc.) are active even in narration among children, or in monologues, as shown by the case study presented by Katherine Nelson.

3. From an anthropological perspective, the discussion has shed further light on the use of iconography in oral traditions. An analysis of the Amazonian and North American traditions has shown that the iconographies are always related to a specific domain, often ritually determined. Among these domains, the representation (and memorization) of lists of names (both geographical names and personal names) seem to play a dominant role.

In conclusion, in so-called oral traditions, image and narration seem to entertain an asymmetrical relationship: while the iconic mode can deeply influence narration, the narrative mode can scarcely be translated in iconic terms.

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HUMAN RIGHTS AND BASIC NEEDS: THEORY AND PRACTICE IN INDIA¹

MAHENDRA PAL SINGH

The opening remarks by the Acting Rector, Wolf Lepenies and Mahendra P. Singh provided for a congenial and academic atmosphere for the start of the conference.

The first speaker, Helmuth Schulze-Fielitz, spoke on “The Politics of Human Rights from a German Perspective”. Starting with the general perceptions and ambiguities prevalent within the human rights debate and universally recognised restrictions on the principles of human rights and universal entitlements, he differentiated between various kinds of human rights and asserted that these differences played an important role in Germany. He argued that these differences could possibly weaken the whole idea of human rights. Further, he differentiated between various discourses in the human rights debate, which, in his view, complemented rather than contradicted each other. Finally, he discussed the legitimacy and politics of human rights within various discourses such as legal, philosophical and political. He concluded that different forms of human rights were not to be played off against each other, though social and economic human rights were to be implemented by policy-makers through the distribution of available resources. Emphasising the importance of social and economic human rights, he noted that the unenforceability of these rights in Germany was an impediment to their realisation.

Starting with the ambiguities within the human rights discourse, Helmut Goerlich identified the difference between human rights and basic needs. He proceeded to explain the problems in the implementation of human rights and basic needs, the disadvantages in using human rights as a starting point in justifying basic needs and the political development

¹ Sponsored by the Wissenschaftskolleg and organised by Fellow Mahendra P. Singh in association with Michael von Hauff, University of Kaiserslautern, and Helmut Goerlich, University of Leipzig. The sessions were held on February 20 and 21, 2003. This report is the edited version of the proceedings prepared by Charu Sharma, one of the participants, who also acted as the rapporteur for the conference. Her contribution is gratefully acknowledged.

of rights and their social and philosophical dimensions. In his view, the implication of starting with human rights was an absolutist state and failure within the state and the state machinery and conflicts of human rights could not be brought within the legal framework. Examining closely the history of human rights development through the American and the French revolutions and the international context, he found a conflict between liberty and equality and the subjects of entitlement to such rights. He acknowledged the existence of basic needs and the enormity of the work required to be done before such needs could be recognised as enforceable rights. He asked whether only individuals were entitled to basic needs or if social groups could also claim them. If social groups could also claim them, then, in his view, mediation problems will be posed which would endanger the concept of the human rights of an individual. He concluded that, though taking human rights as a starting point to cover basic needs is a useful paradigm and is justified, it doesn't make things any way easier. Recognizing the link between the first and second generations of rights, he emphasized that the former ensure the autonomy of the individual as a condition precedent to the culture of basic needs. Finally, he concluded that implementation and enforcement of second-generation rights cannot be assigned to the courts, because they will be overburdened, which will lead to imbalance in the legal system and its ultimate failure.

In his paper on human rights and basic needs in the common law tradition, Ralf Brinktrine began with the proposition that the common law system represented by the UK established no human rights in the strict sense. Only basic needs existed, which were the concern of social welfare legislation. He was not sure whether the Human Rights Act of 1998 had changed the definition and perception of human rights in the UK. Posing the question whether the Act is just a new name for the old tradition or if it has taken note of the social-welfare nature of the human rights charter, he pointed out the difference between the two and suggested that rights are understood to mean a legally acknowledged precept that can be taken to the court for enforcement. Well-known freedoms, such as freedom of assembly and speech in the UK, he thought, were only liberties and not rights in the strict sense. These liberties were protected indirectly in the "no-right" Hofeldian sense. Even though he cited a number of pieces of welfare legislation enacted in the UK in the twentieth century, he doubted whether such welfare could be claimed as a matter of right. In his opinion, policy and political thinking was moving towards the traditional view that if one was not able to work or was poor it was one's own failure, rather than the state's responsibility. Private and charitable organisations, rather than the state, assumed this responsibility to some extent. Moreover, whatever rights and entitlements existed, they were

accompanied by complicated procedural requirements putting them beyond the reach of ordinary persons.

Mahendra P. Singh examined the position of human rights in the Indian tradition with a view to their better understanding and implementation, universally and in India specifically. He spoke of the relevance of tradition in human rights discourse. Examining the Indian tradition from ancient times, he concluded that it consisted of a composite culture marked by the spirit of accommodation and tolerance and an absence of any dogma. Admitting that the ancient Indian literature does not have an exact synonym for the modern concept of rights, he traced the notion of rights in the concept of *dharma*, whose core: “something that sustains the universe”, was capable of subsuming all the existing notions of human rights and much more to provide a sound foundation for them. Clarifying that emphasis on duties rather than rights was common to all ancient traditions and was not unique to India, he emphasized that the modern concept of human rights evolved in the West after the US and French revolutions and became prominent only in the post-World War II period. However, he established that the seeds of the modern concept of rights did indeed exist in the Indian tradition. He also argued that, being subject to *dharma*, the rulers or state in India never became despots or absolute. For this reason, no need for any declaration of rights arose. The presumption was that people had rights and the state had to justify its power to deprive people of those rights. Taking issue with some Western thinkers that the concept of human rights was the product of the Judeo-Christian tradition because of the unique position of the individual in that tradition, he established that the individual was a creation and manifestation of God in more absolute terms in the Indian tradition than in the Judeo-Christian tradition inasmuch as, in the Indian tradition, both man and woman were simultaneously created by God by dividing his body into two halves, with these two persons producing the rest of the world through the process of procreation without any stigma of sin or an act induced by the devil. Moreover, the Indian tradition well recognizes that the individual is nothing but a manifestation of God: “tat-tvam-asī” (I am thee), brahma-smi (I am God), “sarvam-khalvidam-Brahma” (God is all-pervasive). Reliance on religion was, however, not necessary for human rights. The Indian tradition is based upon rationality and reason. He concluded that the Indian tradition does not claim superiority over any other tradition. Nor does it lay down any universal standards for others. This is because of its eternal spirit of liberty, which is cautious about claiming to be right. The endeavour to universalise human rights must be one based on a *Weltanschauung* that takes into account the traditions and demands of all the people around the world.

Amitabh Kundu examined the regional pattern of access to basic amenities in urban India within the context of globalisation and the new system of governance. Making a few generalisations about the initial planned economy and the recent shift to a free economy and the availability of basic amenities to the poor in India, he examined the problems of shelter and deficiencies in the basic amenities in the towns and cities in the country and of deprivation of basic amenities across the states. Comparing the data across states, he concluded that, barring a few exceptions, there was a positive relationship between the level of economic development and access to amenities. He found significant disparities in the availability of basic amenities across the states because of differences in the level of development. To remedy the situation, he suggested devolution of powers and responsibilities onto the municipal bodies and a proper monitoring of the system.

Speaking on reorienting human rights to basic human needs, Professor Bhuvan B. Pande examined the debate on human rights and basic needs with a focus on the right to food in India. Arguing that human rights were social constructs, one could always add to or subtract from their scope. Among various techniques protecting cherished human claims, he stated, human rights were the most accepted. This technique could very well be applied for the realisation of basic needs. In his view, the existing human rights formulation accorded only superficial recognition to basic needs claims, while it was possible to push such claims to the centre of human rights debate. Emphasising the need for a paradigm shift in public policies and relief codes, he observed that the right to food had acquired a distinct status in some recent research and studies in the field of international law and jurisprudence. But the identification of human needs was much more problematic and controversial, because not only were such needs strongly influenced by ideological considerations, they were also closely associated with subjective preferences and abilities. He pointed out several controversies based on various considerations including prioritisation of needs. Examining the trend in legal developments, he found that although basic needs were given due recognition at some time in the past, currently they were being ignored. The courts are viewing the pavement and hutment dwellers as encroachers and as a symbol of illegality and are justifying their forcible displacement. He expressed dissatisfaction and scepticism at the growing insensitivity of the government and the policy-makers in overlooking the economic and social rights especially of the poorer sections in India and concluded that the situation was dismal and required concerted action from the social, legal and political philosophers and activists to stem this dangerous shift in the approach of the courts and the government.

Rolf Kunnemann spoke on “Implementing the Right to Food in India: From Legislative Framework to Framework Legislation”. He asked for a national legislative framework for the right to food. Appreciating the role of the Supreme Court of India in recognising the right to food implicit in the right to life guaranteed in Article 21 of the Constitution and giving the background to the process of recognition of the right to food in the international arena, he described the concept of framework law and the process leading to such legislation in India. He discussed steps towards an action plan to initiate the process of national framework law. Finally he made suggestions for the success of this action plan and recommended that States needed to adopt the international legal instruments of the human right to food in their national law as part of a framework legislation that could prove useful in the realisation of the right to food. In his opinion, discussion of the right to food within the international community was a process rather than an administrative campaign, and he traced various international conventions in this connection. He observed that the draft voluntary guidelines on the human right to food had no legal effect in strict sense, but that they constituted a commitment to work towards the recognition and enforceability of the right to food including freedom from hunger and malnutrition. Within the Indian context, he asked the government to take a proactive position on the framework legislation and he likewise asked the Supreme Court to adopt international standards and interpretation on the right to food. Concluding his suggestions on the formulation of a legislative framework, he called for the creation of a structure with accountability, transparency, popular participation, decentralisation and independence of judges and non-discrimination.

Wolfgang-Peter Zingel spoke on “Food Security in India: For Whom, How and Why?” Focusing on the practical side of the food security in India, he agreed with the basic premise of the Nobel laureate economist Amartya Sen that food security in India was less a question of harvests and quantities than of entitlement and deprivation and a short-sighted policy. On the question of implementation of the human right to food in India, he asked about the kind of food to be secured, the process to be adopted for securing the food, the dividing line between food security and insecurity, the price involved and who pays that price. He offered answers to these questions using specific examples and by suggesting changes in the policy at the planning, structural and economic levels. He also argued for learning from the practical experiences within and outside of India. The Indian situation, he said, required consideration of certain unique features of the Indian population in regard to its nutrition levels, dietary requirements and calorie intake and the fact that large strata of the Hindu and Buddhist and the entire Jain population were vegetarian. He noted

that although food seemed to be available in India in sufficient quantities, it was scantily and irregularly available in certain areas and for certain groups of people. He found that the weaker sections and the poor generally had less food security and girls from low-caste families in backward areas were among the worst fed. India's food pricing policy was also defective, he noted, which has led to a lot of strife and failed as an effective strategy of attaining food security. Equally defective was the Public Distribution Scheme, which was being followed in spite of its failure, its expense, and its inefficiency. He asked for temporal and regional adjustments, increased production, balance in the pricing policy and state intervention in the food market. In conclusion, he asked for close examination of the food distribution policy, the public distribution scheme and the kind of food an ordinary citizen requires and for providing a planned management free from political manoeuvrings.

In his paper on "Enforcing Human Rights Through Public Interest Litigation in India", Parmanand Singh gave a critique of the Public Interest Litigation (PIL) in India as a means of realising human rights and emphasized that, though litigation was not the only tool for the realisation of human rights, PIL was a movement towards a struggle for such realisation. The movement, in his view, was a unique product of the political and social history of India. The movement, he noted, started as an initiative of the judiciary in the aftermath of the 1975–76 Emergency, which resulted in gross violations of civil liberties and state repression. PIL emerged as a harbinger of new freedom. The movement also found support from investigative journalism, social activism of individuals and NGOs, media reporting and pro-activist judges. Agreeing that PIL was used as an effective tool in many instances, led to law reform and social movements and initiated national debate on human rights issues, he noted that, nonetheless, a number of times the court decisions in PIL were not filtered down to provide relief to the affected people. He thought that the future of human rights depended not only on PIL or other litigation, but also on the political and economic situation in the country. He noted the current change in the role of the state from social welfare to minimalist and felt that, in this scenario, the device of PIL would only be rhetoric devoid of any social meaning.

Charu Sharma in her paper entitled "The Evolution and Scope of the Human Right to a Healthy Environment in India" dealt with a different aspect of human rights violation – environmental protection through rights mechanisms and the recognition of the human right to a healthy environment in India. Tracing the roots of this development from ancient Indian history up to the Supreme Court of India's efforts to interpret the right to life and the directive principles of state policy in the Constitution, India's international obliga-

tions *vis-à-vis* environmental protection for recognition and creation of the right to a healthy environment, she submitted that, through judicial innovation and activism, the human right to a healthy environment had been accorded the status of a right as part of civil, political and social rights. She contended that, although environmental protection took a back seat while competing rights like the right to food and shelter were still evolving into a meaningful reality, the judiciary followed a balanced approach in determining the right to a healthy environment. She emphasized the need to move towards a higher level of consciousness of making environmental protection a part of human existence, thus internalising the value of environmental protection for the environment *per se*, away from anthropocentric interest. The consensus, in her view, was that the achievement of objective human rights is linked with the achievement of environmental rights, too. One could not deal with them separately and could not always hold the environment subordinate to recognised inviolable rights. She agreed that, although not all rights might be enforceable and certain rights may have reasonable restrictions imposed upon them to balance the rights of others, it could be stated that the recognition of the human right to a healthy environment had found a place on the spectrum of fundamental rights in India.

Christian Wagner spoke of “Political Barriers in the Realisation of Human Rights in India”. He diagnoses some barriers to the realisation of basic needs and human rights in India despite the presence of democratic governance, participation and empowerment as important ingredients of development. He called for an end to the political barriers that have severely affected India’s development and he focused on the general debate on the relationship between the state and development, highlighting the special features of South Asia. Examining the state of the realisation of human rights and basic needs in India compared with other countries, he concluded that Indian democracy had failed to establish a reliable institutional framework and that this had a virulently negative impact on securing basic needs and human rights. In his view, the tax sector, corruption, infrastructure deficits and the identity of the state could be identified as the most important obstacles at the central level. Arguing for the removal of these impediments, he stressed that, although selfish political interests would continue to shape the democratic process, one could not overlook the fact that only the democratic process can tame the impure motivations that all politics breeds.

Michael von Hauff’s paper entitled “Human Rights, Informalisation of Employment and Social Security System in India: an Assessment”, was presented by Mahendra P. Singh because of Michael von Hauff’s sudden indisposition. It dealt with the theoretical and

empirical relationship between the human right to social security and the goal of economic development in India. Picking up the ratio of persons in dependent employment as an indicator for assessing social security and examining the relevant data and studies, it established a correlation between per capita income and the percentage of expenditure on social welfare: the higher the per capita income, the higher will be the share of social expenditure. Because India was in a dual transformation process (from a more centrally planned economy to a more free-market economy and from an economically underdeveloped to a developed country), the need for social security and reliable and universally available benefits was very significant. With these assumptions, the paper traced the relationship between social security and economic development, described the changing pattern of employment and informalization of the labour market in India and analysed the structure of the Indian social security system. Emphasising the need to examine the inadequacies and provision for meaningful social security in future and citing the examples of existing legislation in India providing for social security, the paper concluded that, in India so far, the social security system did not cover a reasonable section of the population and failed to make a positive contribution to economic development.

The conference concluded with a vote of thanks to all the participants and sponsoring institutions and their officials and staff. The participants also agreed to have the papers published in one volume, which is likely to be released soon.

Contributors with Titles of Their Papers

Ralf Brinktrine, Associate Professor of Law, University of Leipzig

Human Rights and Basic Needs in the Common Law Tradition

Helmut Goerlich, Professor of Law, University of Leipzig

Ambiguities in the Understanding of Human Rights and Basic Needs

Michael von Hauff, Professor of Economics, University of Kaiserslautern

*Human Rights, Informalization of Employment and Social Security System in India:
an Assessment*

Amitabh Kundu, Professor of Economics, The Jawaharlal Nehru University, New Delhi

*Access to Basic Amenities in Urban India: an Analysis of Regional Pattern in the Context
of Globalization and the New System of Governance*

Rolf Kunnenmann, Secretary-General, FIAN International, Heidelberg

Implementing the Right to Food in India: from Legislative Framework to Framework Legislation

Bhuvan Ballabh Pande, Professor of Law, University of Delhi

Reorienting Human Rights to Basic Needs

Michael Schied, Researcher in Asian Politics, Humboldt University, Berlin

Human Rights and India's Developmental Experience

Helmut Schulze-Fielitz, Professor of Law, University of Wuerzburg

The Politics of Human Rights from a German Perspective

Charu Sharma, Assistant Professor of Law, City University, Hong Kong

The Evolution and Scope of the Human Right to a Healthy Environment in India

Mahendra Pal Singh, Professor of Law, University of Delhi and Fellow,

Wissenschaftskolleg zu Berlin

Tracing Human Rights to the Indian Tradition: Its Relevance to the Understanding and Application of the International Bill of Rights

Parmanand Singh, Professor of Law, University of Delhi

Enforcing Human Rights Through Public Interest Litigation in India

Christian Wagner, Research Fellow at the German Institute for International and Security Affairs, Berlin

Political Barriers in the Realisation of Human Rights in India

Wolfgang-Peter Zingel, Professor of Economics, South Asia Institute, University of Heidelberg

Food Security in India: For Whom, How and Why?

THE EUROPEAN CONSTITUTION FROM THE
INTERDISCIPLINARY PERSPECTIVE: PROMOTION OF UNITY
AND PROTECTION OF DIVERSITY¹

GRAŻYNA SKAPSKA

The formation of the European constitution parallels another crucial process faced by the European Union: the process of enlargement. Both the formation and proclamation of the European Constitution and the process of enlargement, together with the ever more important processes of immigration, present challenges for the European Union in its existing form: to its institutional structure, its unity, and its identity. On the one hand, the constitutionalization of Europe means the promotion of unification and integration of the old and the new members to protect European cohesion and simultaneously to protect the core values on which the European Union rests: human rights, principles of the rule of law and democratic government, and the four crucial freedoms expressed in the Treaty of Maastricht. On the other hand, the process of the constitutionalization of Europe confronts the growing diversity of European societies and the necessity to reflect and to accommodate it, but not lose the Union's capability of effective functioning. The constitutionalization of Europe thus has many dimensions: legal and in the broader sense institutional, political, sociological, and cultural, to mention the most important of them. Thus, the objective of this seminar was to initiate a cross-disciplinary debate on some burning issues related to further integration and unification and the simultaneous diversification and pluralization. The presentations and discussed questions contributed to clarify some crucial legal, political, and social problems the European constitution faces.

The opening presentation by Professor Grimm, Rector of the Wissenschaftskolleg, debated the legal dimension of constitutionalization from the perspective of the plurality of legal structures already characteristic of the European Union. Richard Bellamy and

¹ Workshop held at the Wissenschaftskolleg zu Berlin, June 18–20, 2003, sponsored by the Otto and Martha Fischbeck Foundation.

Christian Joerges further elaborated these issues, i.e. the co-existence of statutory laws and case law, the importance of the Charter of Rights and its compatibility with the European Convention of Human Rights and Fundamental Freedoms, the coexistence and accommodation of the adjudication of the European Tribunal of Human Rights with the future constitution, and also its accommodation with the adjudication of the European Tribunal of Justice. In light of Christian Joerges's presentation, the constitutionalization of united Europe is a dynamic process, and the very legal meaning of constitution is shifting: from that of the constitutional treaty – a document negotiated and agreed upon in multilateral agreements and compromises – to the constitution proper – a document founding a new political entity. In this presentation and the following debate, the question of the “constitutional moment” was debated, and the argument was presented that such a “constitutional moment” is missing. Juxtaposed with this argument was another one that such a constitutional moment is found in the EU enlargement process and the incorporation of the new member states in the already existing EU structures. As was argued, they possess considerable potentials but very peculiar experiences and expectations, not to mention much lower GNPs and living standards. Nevertheless, the enlargement confronts the European Union with huge tasks and risks and has to accommodate quite specific legal and constitutional cultures, characteristic of the new members. András Sájo raised the issues of Eastern Europeans expectations, saying that the process of enlargement and the “constitutionalization of Europe” is popularly supported in the new member-states precisely because of its legal effects: the clear and efficient legal structures hoped for. One speaks about a “pulling effect” of the constitution, its empirically effective contribution to European integration.

Challenging issues related to the EU enlargement were further debated in relation with other topics and presentations.

The second set of issues concerned the political dimension of constitutionalization, the complexity of the EU's institutional structures, – which complexity was analyzed on the basis of empirical research conducted by Rainer Schmalz-Brunns and Tanja Hitzel-Lassagnes –, the issue of sovereignty in general, and the more specific issues of the member states' sovereignty. Above all, the debate focused on the question whether the constitutionalization of Europe limits state sovereignty or redefines it in the context of the Europe's highly complex institutional construction. During the seminar, Ulrich K. Preuss proposed the concept of “shared sovereignty” as an answer to the question whether the nation-states have less sovereignty in the united Europe. The “shared sovereignty” proposition was debated with regard to internal and external domains of state power in general and in

particular to the subordination of national legal orders to European law. In this respect, the question of Eastern Europe's newly won full national sovereignty was raised, and the possible tension between "shared sovereignty" and the importance of full sovereignty for Eastern Europeans was debated. The debate also focused on the growing cultural diversity of the inhabitants of Europe – the issue raised by Christine Landfried. In her presentation, the growing plurality and diversity of the European demos and the growing presence in Europe of non-European cultures presents a challenge, but also a potential. The debated questions were to what extent cultural differences could be accepted, whether the interpretation of human rights and liberties could be at all flexible, and the degree to which the constitution should reflect the growing cultural differentiation of Europe.

The formation of the European Constitution also has an important sociological dimension. First and foremost, this dimension is related to questions of the Constitution's legitimacy in terms of the values and worldviews of the ever more diverse and plural European society. Here, a question of European identity arises. During the workshop, this question was debated in connection with the growing importance – in the consciousness of Europeans – of the European totalitarian past for its identity-forming effects. Two totalitarianisms were the subjects of presentations and debates: Nazi totalitarianism in Gesine Schwan's presentation and communist totalitarianism in Grażyna Skapska's presentation. In contrast to the impact of totalitarianisms, a historian, Éric Brian, presented the history of the constitution, human rights, and public education in France at the end of eighteenth century in the context of the French contribution to European identity formation.

Gesine Schwan argued that the Nazi past is not yet fully overcome and still presents a caution and a lesson for Europe. The process of reckoning with the totalitarian, Nazi past still contributes to conceptualizations and the recognition of human rights and human dignity, as well as revealing the potential dark forces of fundamentalist nationalism and chauvinism. In Grażyna Skapska's presentation, the other totalitarianism was debated as an identity-forming factor: communist totalitarianism, based on a very peculiar, so-called "scientific" ideology. Allegedly founded on the Enlightenment ideas of scientific reason and social progress, communist totalitarianism compromised these very ideas in the consciousness of Eastern Europeans, and led to the revival of local cultures and traditions, but also of Christianity as important, European identity-forming factors.

Workshop Program

June 19, 2003. Opening of the Workshop: Dieter Grimm

Session I

The Historical and Sociological Dimension of the European Constitutional Treaty

Moderator: Cornelia Vismann

Éric Brian: "Constitution, Human Rights and Public Instruction. A Reflection Based on Constitutional Issues at the End of the 18th Century in France"

András Sájo: "Europeans Without Enthusiasm"

Session II

The Impact of the Past on the Emerging European Polity

Moderator: Martin Tisné

Gesine Schwan: "The Impact of the Past on the Political Culture of Europe"

Grażyna Skapska: "European Constitution after Auschwitz and Gulag: Critical Reflexivity as Foundation of European Identity"

June 20, 2003

Session III

The European Constitutional Treaty and the Multiplicity of Legal Structures

Moderator: Mahendra Pal Singh

Christian Joerges: "Europe a *Großraum*? Shifting Legal Conceptualizations of the Integration Project"

Christine Landfried: "The Political Dimension of Europe: Difference as potential in the EU"

Session IV

The Political Dimension of the European Constitution

Moderator: Hilda Sabato

Ulrich K. Preuss: "What Does 'Shared Sovereignty' Mean in the Context of the EU?"

Richard Bellamy: "The Normality of Constitutional Politics: an Analysis of the Drafting of the EU Charter of Fundamental Rights"

Rainer Schmalz-Brunz and Tanja Hitzel-Cassagnes: "The Inter-institutional Development of Rights and Democracy in EU – a Deliberative Perspective"

Participants

Richard Bellamy, University of Essex, Colchester

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Christian Joerges, European University Institute, Florence

Dieter Grimm, Rector, Wissenschaftskolleg zu Berlin and Humboldt University Berlin

Tanja Hitzel-Cassagnes, Technical University, Darmstadt

Christine Landfried, University of Hamburg

Ulrich K. Preuss, Free University, Berlin

Hilda Sabato, Wissenschaftskolleg zu Berlin and Universidad de Buenos Aires

András Sájo, Central European University, Budapest

Reiner Schmalz-Brunz, Wissenschaftskolleg zu Berlin and Technical University, Darmstadt

Gesine Schwan, Europe University Viadrina, Frankfurt/Oder

Mahendra Pal Singh, Wissenschaftskolleg zu Berlin and New Delhi University

Grażyna Skapska, Wissenschaftskolleg zu Berlin and Jagiellonian University, Cracow

Martin Tisné, Center for Policy Studies, Central European University, Budapest

Cornelia Vismann, Wissenschaftskolleg zu Berlin and Max-Planck-Institut, Frankfurt/Main

Fellows of the Wissenschaftskolleg zu Berlin, invited students

THEORIZING GLOBAL MIGRATION:
HOW DOES TRANSNATIONALISM MATTER?¹
STEVEN VERTOVEC

Migration experts from a variety of social science disciplines recently met for a workshop I organized at the Wissenschaftskolleg. The workshop provided a focused, high-level discussion on new trends, patterns and theories surrounding global migration. Specifically, the focus was on a recently developed approach to migration, namely transnationalism. This approach has been developed within migration studies over the past ten years.

While conventional treatments of migration issues tend to examine how migrants move to and settle or integrate into a new national context, the transnational approach is concerned with the ways migrants maintain strong emotional bonds, economic links and political loyalties with their places of origin. Today's migrants use numerous resources to maintain such connections with their homelands, including: advanced telecommunications (cheap telephone calls and faxes, satellite television, e-mail and the Internet), enhanced financial transfer services (to send remittances quickly and cheaply), along with fast, regular and relatively inexpensive air transportation.

I have been commissioned by the American Social Science Research Council (SSRC) to write a state-of-the-art piece on transnationalism, including an account of emergent transnational practices among migrants and an assessment of burgeoning methodologies for researching and theorizing transnationalism. The paper was presented at a special conference at Princeton University (May 23–25, 2003) entitled “Conceptual and Methodological Developments in the Study of International Migration” and published in the *International Migration Review*.

This paper provided the impetus for the workshop. The paper itself, entitled “Migrant Transnationalism and Modes of Transformation”, discusses the rise of the transnational

¹ Workshop held at the Wissenschaftskolleg zu Berlin, March 13–16, 2003, sponsored by the Otto and Martha Fischbeck Foundation.

approach in migration studies, and the criticisms levelled at it. The main body of the paper examines areas of fundamental change brought about by contemporary practices of migrant transnationalism. In the socio-cultural domain, transnationalism involves new patterns of long-distance communication and social organization (especially family structure) among migrants; in the political domain this concerns various challenges to nation-states, namely through increasing levels of dual citizenship and a range of homeland political activities among migrants; and in the economic sphere this mainly entails the massive scale of global remittances (officially over \$105 billion annually) and their impact on developing countries and local communities.

The experts gathered for the workshop at the Wissenschaftskolleg represented a range of disciplines, including two geographers, two political scientists, two sociologists and three anthropologists. Workshop participants presented and discussed their own approaches to, and critiques of, the transnational approach to global migration before focussing on the above mentioned paper. They provided critical feedback to sharpen the concepts, arguments and examples in the paper.

Participants

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