



Europäische Akademie

zur Erforschung von Folgen wissenschaftlich-technischer Entwicklungen
Bad Neuenahr-Ahrweiler GmbH

Direktor:
Professor Dr. Carl Friedrich Gethmann

Newsletter

Akademie-Brief ▪ No. 33 (August 2002)

Editorial

Der Arbeitskreis „Medizinethik“ wurde im Jahre 1998 durch die Europäische Akademie nach Anregungen aus der Ärzteschaft der Region gegründet. Mitglieder des Arbeitskreises sind Krankenhausärzte und niedergelassene Ärzte sowie andere an Fragen der Medizinethik interessierte Personen aus dem Landkreis Ahrweiler und dem weiteren Raum Bonn. Im Rahmen des Arbeitskreises bietet die Europäische Akademie Vorträge und Diskussionen mit externen Referenten und Mitarbeitern der Europäischen Akademie an; sie fördert somit den Gedankenaustausch zwischen praktizierenden Ärzten und Experten aus Wissenschaft und Gesundheitspolitik. Die Auswahl der Themen erfolgt in Abstimmung mit den Teilnehmern aus aktuellen Bereichen der medizinischen Ethik und des Medizinrechts, wobei ein wichtiges Merkmal der Themen deren Bedeutung für das aktuelle ärztliche Handeln in Klinik und Praxis ist. Beispiele für solche in der jüngeren Zeit sind „Aufklärung und Paternalismus“, oder „Aufklärung und Einwilligung. Pflicht des Arztes und Recht des Patienten“. Die Sitzungen des Arbeitskreises Medizinethik finden im zweimonatlichen Turnus statt, in der Regel in den Räumen der Europäischen Akademie.

Der Arbeitskreis „Medizinethik“ ist Teil der regionalen Aktivitäten der Europäischen Akademie. Über die Veranstaltungen des Arbeitskreises „Medizinethik“ wird im Newsletter regelmäßig berichtet.

JL / PH

Focus

Climate Change.

Reasonable acting towards an uncertain future?

Stephan Lingner

Ten years ago, the World Summit in Rio de Janeiro gave the kick-off for the formulation of internationally binding regulations for the utilisation of global resources and sinks. Among other documents, the UN-Framework Convention on Climate Change (FCCC) was adopted by its member states. In the meantime, some enthusiasm diminished and the international alliance for climate protection has become fragmented. Currently, it seems questionable whether concrete reduction goals – formulated in the post-Rio decade – will soon come into force by ratification of enough signatory states to the Convention as planned for the upcoming Rio+10 Summit in Johannesburg in September 2002. The actual situation seems unsatisfactory with respect to the original time-schedule and also with regard to possibly high risks of further continuing human-induced climate change. This observation necessitates principle clarification, as to whether and to what extent contemporary knowledge on climate risks might obligate us to act.

The latest IPCC (Intergovernmental Panel on Climate Change) assessments on climate change gave “new and stronger evidence” for a human role in the climate system. *Vice versa*, “human systems are sensitive” or even vulnerable to climate change. These findings underline the possibility of a significant human-induced alteration of Earth’s climate, which could affect climate-sensitive societies in the future or even now. Thus, the informed human actors will lose their “innocence” in using the atmosphere as a sink for greenhouse gases and “consuming” its limited buffer capacities for the probable disadvantage of others and future generations. This knowledge should obligate us to take adequate precautions – but the contrary seems to be the fact, at least in the view of some pressure groups. Indeed, there is a highly controversial (e)valuation of climate research, its results and meanings in the public as well as in the scientific community itself. This in turn may lead to a confusing plurality of positions in climate politics

and – as a result – to its apparent stagnation. Therefore, some specific insights into the problem and possible solutions from an interdisciplinary point of view will be given here. The statements given are partly derived from the study “Klimavorhersage und Klimavorsorge” by Schröder et al., which has recently been published by Springer (ISBN 3-540-23439-6). The report assesses the problems of adequate response to long-term climate change and its uncertain impacts on (future) societies from a transdisciplinary perspective.

Uncertainty

Our knowledge on future climate is highly based on numerical models. These are sometimes blamed for being biased by implicit premises and valuations of the modellers. The modelling results are thus criticised as being constructed and somewhat artificial or arbitrary – especially compared to “exact” data from Earth’s past history. But assuming that measured paleoclimate data are objective and therefore generally more useful for assessments on

climate development is a fallacy. The main reason why is that the supposed exact data are *interpreted data* e.g. from isotopic measurements of geological samples. On the long way from rough data to any climate relevant evidence many obstacles might emerge to impede the findings and undermine the authenticity of results as in the case of modelling: for example the sampling procedure as well as the selection of relevant theories and basic assumptions are not unimportant with respect to results of the necessary subsequent interpretation steps and their meanings. So it may not be surprising that in fact some seemingly "exact" satellite or isotopic data have already had to be reassessed for plausibility reasons. Our "knowledge" about the future (and past) climate is therefore principally uncertain – not only because of the complexity of interfering with natural and anthropogenic processes but also due to the fact that corresponding scientific results necessarily depend on internal valuations and decisions which, to some extent, are also normative. Another factor of uncertainty is that corresponding projections may even not be expected to get real which seems to be a paradox at first. The reason is that realisations of plausible "prognoses" with bad results are objects of human intervention – and this in turn will reason the "predictions" which – at best – will not occur. On the other hand, climate-relevant human action can be only partly explained and predicted on the basis of economic and rational choice theory. Hardly predictable lifestyle-changes and fluctuations of preferences will change our future, too. Thus, any verifications or falsifications of climate scenarios would be without sense. Only *validations* according to coherence and consistence and to the state-of-the-art of science are possible and necessary. Summing up, dealing with problems of future climates involves uncertainty and incomplete knowledge, which may only be partially compensated. Therefore the uncertainty from modelled or measured data is an integral part of the question how action is to be justified – and not the result of poor science.

Precautions?

Nevertheless, from an actor's point of view, uncertainty may lead to resignation and paralysis which – in the end – could boost business-as-usual strategies. But this would only be reasonable, if action could be legitimated solely on the basis of the future success of our present-day acting. But this rationality is not feasible in a counter-factual perspective for the several reasons mentioned above. Therefore, other orientations are needed. As "climate

change is ultimately an ethical issue" (Rayner et al. 1999) moral considerations will obligate us to act on actual valid knowledge. This knowledge may even be uncertain, as depicted above, but as long as it can be made plausible and other information is lacking, possible climate risks cannot be ignored today. This moral view will even cope with possibly different evaluations of climate risks in the future, as the relevant decisions in question have to be taken *now*, which means that they also have to be presently justified. Interpretations of juridical principles like the precautionary principle tend to the same direction. Anyhow, precaution is not a categorical imperative unless conflicting but desirable goals or other risks – such as risks from excessive precautions to the sustainability of economies and societies – have to be put into account. Uncertainty and diversity of risks or aims – although no principle categories against precaution – will play a major role in balancing issues of precaution and adequacy and in formulating concrete binding regulations. Corresponding rational assessments should therefore guard against alarmist as well as over-optimistic approaches, which might both produce the same result – myopia. For the development and specification of appropriate strategies it has to be pointed out that climate precautions are not synonymous with climate change prevention, as adaptive strategies may also contain precautionary elements. Moreover, the latter seem to be necessary to get installed in a complementary manner because of the inertia of the climate system and the problem to counteract future climate effects from climate forcings of the near past.

Coming back to the addressees of moral obligations, climate protection is not an aim in itself. Considering the fact that climate projections "predict" possible severe climate effects mostly in the distant future the question arises if caring for future generations would be ethically relevant. This seems to be the case according to "modern" anthropocentric conceptions which extend their universalistic scope from very plausible to the long-term perspective. On the other hand, none of the contemporary no-obligation argumentations which might be put forward against intergenerational fairness is logically consistent or withstands particularism. That means that, in general, moral obligations towards acceptable climate conditions for future generations do exist. But these obligations are not uniform with respect to their extent and liability: progressive uncertainty about lifestyle changes and variations of personal preferences and interests with a growing

time-distance will allow for a degressive development of obligations from the present through the near to the distant future. A practical approach in this sense would be an intergenerational "chain of obligations" with the formulation of binding duties in the foreseeable future. And this is the perspective of the Kyoto-process, which – at least structurally – seems to be adequate to the task of caring for future generations as well as for the present.

Conclusions

The conditions for long-term obligations, the grave risks of future climate change effects and the uncertainty thereupon as well as conflicting societal goals lead to the specifications for adequate climate precautions as follows: Potentials for cost-effective solutions and for the improvement of coherent measures should be consequently and instantly utilised, whereas massive interventions in economic systems should be avoided on short time-scales. Instead climate protection should be seen as a long-term task which cannot be decided as a whole and conducted immediately. Therefore the long-term reorientation of climate relevant drivers – like the energy supply systems – have to be *initiated* now. This will create substantial independence from carbonaceous fuels in the long-run. This *procedere* will allow for the adaptation of industrial development processes and investments to new framing conditions at lower societal costs. Additionally, respective long-term planning will be flexible, as it provides the opportunity for the implementation of new insights derived from continuous scientific research and experience, e.g. from the utilisation of innovative and flexible mechanisms for environmental protection, such as instruments of emission trading or technology transfer. Thus, depending upon new insights and better knowledge, further measures to achieve the target of climate protection might be strengthened or altered in the forthcoming periods. This in turn obligates us to a further progress in climate (impact) research and to social learning. Processes of social learning will create flexibility and, therefore, *reason* for acceptable and coherent long-term climate policies.

Dr. rer. nat. Stephan Lingner, Dipl.-Geol., is a staff member of the Europäische Akademie. He coordinated the project group „Klimavorhersage und Klimavorsorge“ and is a coauthor of the respective study report. Currently, he is the coordinator of a follow-on study on the specification of the international climate protection goal of the UN-FCCC which is conducted on behalf of the Federal Environmental Agency of Germany (UBA).



Working groups

Presentation: Nachhaltige Entwicklung und Innovation im Energiebereich

On October 21st 2002 the Europäische Akademie's project group "Sustainable Development and Innovation in the Energy Sector" will present its final report to the public in Berlin.

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Reasoning Goals of Climate Protection. Specification of art. 2 UNFCCC

On 20th June 2002 the working group held its second regular meeting in Berlin. Before, on 19th June 2002, Mrs Mahrenholz and Mr Weiß from the supporting Federal Environmental Agency of Germany (UBA) gave a further briefing for the execution of the project. The main topics were the adoption of the extended study outline and discussions on interpretations and specifications of the term "danger" with respect to the corresponding wording in the Framework Convention.

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TAMI Kick-off Meeting

The TAMI Kick-off meeting took place in Brussels, on 20th/21st June 2002. The aim was to establish initial discussion among representatives of the national policy-making community, TAMI members and representatives from R&D-intensive branches of industry. On the first day of the meeting the plenary discussion was initiated by a small number of presentations. The presenters – Andrew Freeman (GlaxoSmithKline), Paraskevas Caracostas (European Commission), Dr. Hans Peter Bernhard (Novartis Services AG Switzerland) and Professor Dr. Bugl (Chair, Advisory Board CTA) – gave a short lecture on the following issues:

1. Expectations of TA experts from TA institutes
2. Impact of TA in policy-making and criteria for success
3. Examples of influential reports
4. Problems in S&T policy to which and in which way TA can make contributions
5. Participation in TA by experts, laypersons, citizens and/or stakeholders in TA

On the second day, the working groups concerned with methods and impacts, involving TA experts, policy-makers and industry representatives held parallel sessions. This successful meeting contributed to the creation of the working plan for the TAMI project which will continue, according to its original conception, with two parallel working groups (method, impact) and regular plenary sessions for the evaluation of the project work.

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Functional Foods: Mid-Term Meeting

The Mid-term Meeting of the project group Functional Foods took place in Berlin on 14th and 15th June 2002 at the Landesvertretung Rheinland-Pfalz. The invited guests asked to review and comment on the work of the group were:

Professor Peter J. Aggett, Lancashire Postgraduate School of Medicine and Health, UK
Professor W. Grunow, Bundesinstitut für gesundheitlichen Verbraucherschutz und Veterinärmedizin, Berlin

Professor Hannes Weindlmaier, Department of Management and Economics, Technische Universität München

Professor Klaus G. Grunert, MAPP Centre, The Aarhus School of Business, Denmark

Professor M. Korhals, Board Mansholt Institute, Wageningen University and Research-centre, The Netherlands

Professor Ian Rowland, University of Ulster, School of Biomedical Sciences, UK

The reviewers were overall content with the work of the group while making some suggestions for improvements. As a result of the review process, the group is now ready to enter the final stage of their report with the finalisation of the drafts and writing up of policy recommendations.

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Conferences

Autumn Conference 2002: Nanotechnology Assessment

The conference focuses on American research on nanotechnology, especially in nanoelectronics. This is where the ground is prepared for nanocomputing and nanodevices developed e.g. for life-science and information technology applications.

What is the state of the art? What is attainable in the next ten to twenty years? Where are the technical, economic and ethical limits of these developments? These are the questions the speakers at this conference are requested to answer. The following experts will report on research in the US:

Professor Dr. Viola Vogel (University of Washington, Seattle, USA)

Professor James R. Heath, PhD (University of California, Los Angeles, USA)

Stan Williams, PhD (HP labs, Palo Alto, USA)

In addition to these technical talks two presentations on economical and ethical issues are planned.

The conference takes place at the Günnewig Hotel Residence in Bonn, Germany on 13th and 14th September 2002.

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News

Alexander von Humboldt Stiftung

Carl Friedrich Gethmann has been appointed to the Selection Committee of the Feodor Lynen-Programm of the Alexander von Humboldt-Foundation for a third three-year period from 2003 to 2005.

Young Academy

Felix Thiele has been elected member of the Young Academy for a five-year period starting in June 2002. The Young Academy is a joint project of the Berlin-Brandenburg Academy of Sciences and of the German Academy of Nature Researchers Leopoldina. It serves to further the careers of a younger generation of scientists. The emphasis of its tasks lies in the nurturing of scientific discourse and co-operation between the disciplines, in the execution of scientifically valuable projects, and in the encouragement of initiatives at the interface between science and society. The Young Academy is autonomous and free to choose its modes and places of work.

Felix Thiele is vice-director of the Europäische Akademie. His special field of research is Bio- and Medical Ethics.

3. German IPCC-Strategy Workshop

From 27th to 28th May 2002 German climate researchers and policy actors met at the above mentioned workshop in Bad Münstereifel. The meeting aimed at improvements of German participation in the IPCC (Intergovernmental Panel on Climate Change) research process, especially with regard to the preparation of the 4th IPCC Assessment Report. Stephan Lingner from the Europäische Akademie was invited to give an evening lecture.

Bonner Wissenschaftsnacht

Anlässlich der „Bonner Wissenschaftsnacht“ präsentierten sich am 5. Juli 2002 zahlreiche Forschungseinrichtungen der Bonner Wissenschaftsregion mit Resultaten und Publikationen ausgewählter Forschungsarbeiten. Organisiert wurde die Veranstaltung von der Strukturförderungsgesellschaft Bonn/Rhein-Sieg/Ahrweiler (SFG), der Universität Bonn, dem Deutschen Museum Bonn und dem Stifterverband für die deutsche Wissenschaft in Kooperation mit zahlreichen regionalen Forschungseinrichtungen. Die Europäische Akademie beteiligte sich an der Wissenschaftsnacht mit einem Informationsstand und einem Diskussionsbeitrag von S. Lingner zum Thema „Weltklima. Was verpflichtet uns zur Vorsorge?“.

Arbeitskreis Medizinethik

28.01.2002: Vortrag zum Thema „Aufklärung und Paternalismus“. Referent: Professor Dr. med. Dr. h. c. Friedrich-Wilhelm Eigler, Abteilung für Allgemeine Chirurgie, Universitätsklinikum Essen.

14.05.2002: Vortrag zum Thema: „Aufklärung und Einwilligung, Pflicht des Arztes und Recht des Patienten“. Referent: Paul Wagner, Landgericht Bonn.

09.09.2002: Vortrag zum Thema „Babyklappe und Anonyme Geburt – Hintergründe und Anmerkungen zu ethischen Problemen“. Referentin: Dr. med. Gisela Bockenheimer-Lucius, Senckenbergisches Institut für Geschichte der Medizin, Universitätsklinikum Frankfurt/Main.

Art

At present there is an exhibition of paintings by Beate Leisten, an artist from the Ahr valley. Visitors are most welcome to see the paintings at the Europäische Akademie until October.

Opening hours: 9.00 – 16.00 hrs

Call for Papers

Poiesis & Praxis

Poiesis & Praxis is conceived as an interdisciplinary forum for reflection and deliberation on the scientific and technological future of our civilisation. In detail, the contributions should be devoted to:

- Research into the consequences of scientific, technological and bio-medical advancements and their relevance to society;
- Reflections on this type of study of consequences in the sense of ethics of science and technology assessment. This will include investigations from the point of view of philosophy of science, law, as well as sociology and economics;
- Discussion of the methods, ideas and processes of ethics of science and technology assessment;
- Determination of the relationship between technology assessment and ethics of science on the one hand and politics and society on the other.

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Lectures

Michael Decker
12.6.02 "Robotics in Health Care. The Role of Ethics in Interdisciplinary Technology Assessment". Workshop "Integrating Ethical Enquiry and HTA" at the 18th annual meeting of ISTAHC, Berlin

Carl Friedrich Gethmann
3.6.02 „Zum moralischen Status des Embryo“: Ringvorlesung „Naturverständnis, Technik und humane Lebenswelt“ an der Universität zu Köln

6.6.02 „Praktische Vernunft und technische Kultur – mit einem Blick auf die Energietechnik“: Informationskreis Kernenergie, Bonn

8.7.02 „Mensch-Sein, Personstatus und Lebensschutz des Embryo“: Fortbildungstagung „Mensch, Menschenwürde und Person in den bioethischen Kontroversen“, Waldhof bei Freiburg im Breisgau

11.7.02 „Heidegger und die Wende zur Sprache“: Kolloquium „Phänomenologie und Sprachanalyse“ an der Humboldt-Universität zu Berlin

Stephan Lingner:
5.7.02 „Weltklima. Was verpflichtet uns zur Vorsorge?“. Vortrag und Diskussion, „Bonner Wissenschaftsnacht“, Universität Bonn

27.5.02 „Klimawissen und Klimahandeln“. Abendvortrag, „3. Deutscher IPCC-Strategie-Workshop“, Bad Münstereifel

Felix Thiele:
13.6.02 Bioethik & Biopolitik. Forschungstag der medizinischen Fakultät der Universität Essen

3.7.02 Grundbegriffe der Bioethik, Franz-Haniel-Gymnasium, Duisburg

15.7.02 Bio-Politik und die Bedeutung der professionellen Ethik für die politische Entscheidungsfindung. Graduiertenkolleg am IWT, Bielefeld

New Publications

Carl Friedrich Gethmann
„Anti-Mentalismus“, in: M. Gutmann / D. Hartmann / M. Weingarten / W. Zitterbarth (Hgg.), *Kultur – Handlung – Wissenschaft*. Für Peter Janich, Weilerswist 2002, 91 – 108 (mit T. Sander)

„Pragmazentrismus“, in: A. Eusterschulte / H.W. Ingensiep (Hgg.) *Philosophie der natürlichen Mitwelt*. Grundlagen – Probleme – Perspektiven, Würzburg 2002, 59 – 66

„Phasenhaftigkeit und Identität menschlicher Existenz. Zur Kritik einiger Visionen vom Altern“: Max-Planck-Gesellschaft (Hg.), *Biomolecular Aspects of Aging. The Social and Ethical Implications*, München 2002, 50 – 61

„Wir dürfen unsere Evolution nicht dem Zufall überlassen“, in: J. Nida-Rümelin (Hg.), *Ethische Essays*, Frankfurt a.M. 2002, 442 – 448 (mit G.H. Fey)

„Ethische Anmerkungen zur Diskussion um den moralischen Status des menschlichen Embryos“, in: *Deutsche Richterzeitung* 80 (2002), 204 – 208

„Praktische Vernunft und technische Kultur“: Stiftung Brandenburger Tor (Hrsg.), *Technikkultur*. Von der Wechselwirkung der Technik mit Wissenschaft, Wirtschaft und Politik, Berlin 2002, 141 – 161

Personalities



Davor Solter, M.D. (1965), Ph.D. (1971) both from the University of Zagreb, Croatia. Assistant and associate Professor in the Departments of Anatomy and Biology, University Zagreb Medical School 1966-1973. In 1973 moved to the Wistar Institute, Philadelphia and became member and Professor in 1981 as well as Wistar Professor at the University of Pennsylvania. In 1991 he was appointed member of the Max-Planck-Society and Director of the Max-Planck-Institute of Immunobiology in Freiburg. He is also Adjunct Senior Staff Scientist at the Jackson Laboratory, Bar Harbor. He was and is member of numerous editorial and advisory boards and is currently European Editor of *Genes & Development*. He is member of the American Academy of Arts and Sciences, EMBO and Academia Europea.

In 1998 he received the March of Dimes Prize in Developmental Biology for pioneering the concept of imprinting.

Davor Solter contributed significantly to many areas of mammalian developmental biology, namely: the differentiation of germ layers; the role of cell surface molecules in regulating early development; biology and the genetics of teratocarcinoma; biology of embryonic stem cells; imprinting and cloning. His current research interest focuses on genetic and molecular control of genome reprogramming and of the activation of embryonic genome.

Davor Solter is chair of the European Academy's project group "Embryo Experimentation in Europe"

Publisher:	Europäische Akademie zur Erforschung von Folgen wissenschaftlich-technischer Entwicklungen Bad Neuenahr-Ahrweiler GmbH, Wilhelmstraße 56, D-53474 Bad Neuenahr-Ahrweiler e-mail: europaeische.akademie@dlr.de, Internet: www.europaeische-akademie-aw.de
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Print:	Warlich Druck Ahrweiler GmbH, Bad Neuenahr-Ahrweiler ISSN 1432-0150, frequency of publication: 6 times per year, 2.700 copies, reproduction is permitted with reference to the source, please send two voucher copies.