

## RESEARCH REPORT 2007–2008

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## **FOREWORD**

This is the sixth Research Report issued by the Europäische Akademie covering the research period from 2007 to 2008. The main focus is drawn on the important period of change from the fifth to the sixth generation of projects the Europäische Akademie has been working on. The sixth project generation has just started. Based on the experience gained during 27 interdisciplinary projects that have been carried out (including those which are currently running) the instrument of the interdisciplinary project group is still regarded as a successful mode of operation. The report documents the interdisciplinary and international orientation that is central to the research activities undertaken by the Europäische Akademie. Our scientific work is rendered fully transparent and accessible to the scientific communities and the public, above all by the yearly spring and autumn conferences, numerous expert meetings as well as the four institutionalised publications (book series “Ethics of Science and Technology Assessment”, Springer Verlag, with 36 volumes, the series “Graue Reihe” with 47 volumes, the scientific journal “Poiesis & Praxis”, the fifth volume of which was completed in 2008, and the Newsletter, latest issue No 85).

The results that are shown here could only be achieved because of the time and energy many scientists were prepared to give to the project and to the study groups. The Council of the Europäische Akademie meanwhile comprises 147 scientists. Together with permanent scientific staff, they form the “intellectual capital” of the academy.

The Sponsors’ Club (Förderer der Europäischen Akademie Bad Neuenahr-Ahrweiler e.V.) runs the Europäische Akademie’s regional activities as well as the working group on Medical Ethics and the art exhibitions. The Ahrtal Talks which are jointly run by the Sponsors’ Club and the city of Bad Neuenahr-Ahrweiler are helping to further strengthen the academy’s firm position in the region.

Since October 2008 the “Advanced Master’s Degree Course in Medical Ethics”, so far offered at the FernUniversität in Hagen, continues at the Medizinische Fakultät der Johannes Gutenberg-Universität Mainz (Institute of History, Theory, and Ethics in Medicine) in cooperation with the Europäische Akademie. The study programme integrates the results of interdisciplinary research of the Europäische Akademie.

Our grateful thanks are due to our partners, the Federal State of Rhineland-Palatinate (Land Rheinland-Pfalz) and the German Aerospace Centre (Deutsches Zentrum für Luft- und Raumfahrt e.V.) for their continued support.

During the past two years the Europäische Akademie has proved to cope with the change from the “bounded project financing” to the “competitive project

financing”. Until June 2006 the main third-party funds were paid by the German Federal Ministry of Education and Research (BMBF). During the period under report two further projects were funded by the BMBF as interdisciplinary junior scientist groups within the ministry’s framework of innovation and technology analysis. Furthermore, the academy is supported by a variety of funding bodies such as the “Stiftung Rheinland-Pfalz für Innovation”, the “VGB in Essen” or the “VolkswagenStiftung” which are mentioned in this Research Report.

This report once more demonstrates that the Europäische Akademie has fulfilled its task to perform interdisciplinary research on questions of current interest to society. There is no lack of themes: their number grows faster than it is possible to run projects. The incredible pace of progress in many areas of science means that issues that have been dealt with previously must be dealt with again. The dialogue between science and society is more important than ever and it is now virtually undisputed that scientists, among other actors, have a real job to do. The work of the Europäische Akademie enables the disciplines of science to fulfil their task to provide society with scientific advice.

Bad Neuenahr-Ahrweiler, December 2008

Carl Friedrich Gethmann

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## I SCIENTIFIC CONCEPT

## 1 Mission and Aims

The Europäische Akademie zur Erforschung von Folgen wissenschaftlich-technischer Entwicklungen Bad Neuenahr-Ahrweiler GmbH is devoted to the scientific investigation and assessment of consequences of scientific and technological developments for the individual and social life of human beings and their natural environment. The main focus is to examine foreseeable medium and long-term processes which are influenced especially by natural and engineering sciences and by the medical disciplines. The Europäische Akademie bases its work on the assumption that the sciences have the task, beyond providing specialised scientific information, of also making orientational knowledge available. Therefore, an interdisciplinary approach is required, bringing together the results from natural sciences, engineering sciences and medical disciplines with thematically relevant studies in philosophy, jurisprudence, economics and social sciences. In addition, the foreseeable results of research and development are to be related transdisciplinarily to the expected societal needs and positions. The Europäische Akademie implements its tasks by taking up and developing further approaches to technology assessment, the ethics of technology and medical ethics. The Europäische Akademie seeks to assist in finding a rational way for society to deal with the consequences of scientific and technological developments. This aim is mainly achieved by developing and recommending options upon which to act, with respect to long-term societal acceptance. The rational resolution of conflicts in the area of science and technology is an important prerequisite for long-term, reliable science and technology policy. The work of the Europäische Akademie is mainly conducted by temporary interdisciplinary project teams. Members of the project groups are especially qualified scientists from universities and from non-university research institutions in Europe, and in special cases representatives of other social fields such as business. The project groups work together mainly for two and a half years in an independent manner. Transdisciplinary issues, involving several project groups, are dealt with in study groups by the staff of the Europäische Akademie and invited scientists.

## 2 Structure

The Europäische Akademie was constituted on 11<sup>th</sup> March 1996 as a ‘gemeinnützige Gesellschaft mit beschränkter Haftung’, i.e. a non-profit corporation with limited liability. Its partners are the Federal State of Rhineland-Palatinate (Bundesland Rheinland-Pfalz) and the German Aerospace Center (Deutsches Zentrum für Luft- und Raumfahrt e.V., DLR). Managing director of the company as well as director of the academy is Professor Dr. phil. Dr. phil.h.c. Carl Friedrich Gethmann who is a full professor of applied philosophy at the Universität Duisburg-Essen. Since its foundation the Europäische Akademie is substantially funded by its partners the Bundesland Rheinland-Pfalz and the DLR. In addition, the Europäische Akademie successfully started fundraising for its project work. Competitive money comes from a variety of private and public funding bodies.

The Partners’ Assembly has formed a Managing Committee two representatives of the partners belong to. It also nominated a Scientific Advisory Board which supports the Europäische Akademie in elaborating scientific goals and projects as well as in evaluating research results. The members of the different working groups form the Council of the academy which is a forum for scientific exchange on subjects concerning the activities of the Europäische Akademie. The number of staff members has been successively increased. In the period under report, three doctoral candidates were employed at the Europäische Akademie (cf. section IV, 6.2). At present, there are twelve scientific and eight non-scientific staff members, including the management, working at the Europäische Akademie.

In the period under review, the following projects were completed and their results published: “Intervening in the Psyche. Novel Possibilities as Social Challenges”, “Societal Implications of Electrical Power Grids”, “Responsibility for Future Generations. Implementation of Sustainability in Schooling”, “Pharming. Genetically Modified Plants and Animals as Future Production Site of Pharmaceuticals?”, and “Fuel Cells and Virtual Power Plants as Elements for a Sustainable Development. Innovation Barriers and Implementation Strategies” (cf. section II, 1). The Newsletter (Akademie-Brief), as the regular news organ of the Europäische Akademie, had been published in its 85<sup>th</sup> issue by the end of 2008 (cf. section IV, 3.3). In the meantime, from the publication “Graue Reihe” – intended for the documentation of materials on topical subjects from the scientific activities of the Europäische Akademie – the 47<sup>th</sup> volume has now been published (cf. section III, 3.2). In the

book series “Ethics of Science and Technology Assessment” (Wissenschaftsethik und Technikfolgenbeurteilung) – the publication organ for the project reports and other monographs concerning the work of the Europäische Akademie – 36 volumes have been published so far (cf. section III, 3.1). The periodical “Poiesis & Praxis”, as an international discussion forum for Ethics of Science and Technology Assessment (the fifth issue was printed at the end of the period under review), rounds off the spectrum of publication organs (cf. section III, 3.4). The internet homepage of the Europäische Akademie offers comprehensive information on projects, conferences as well as all issues of the Newsletter and a great variety of topics; it has been relaunched in 2008 and now displays both the academy’s new corporate design as well as a new approach to navigation (see [www.ea-aw.de](http://www.ea-aw.de)).

### 3 Results and Scientific Integration

From the beginning, the Europäische Akademie aimed at working on projects dealing with social problems generated by the whole spectrum of the sciences and not just a subset – be this the medical or the technical sciences. Based on this broader approach the Europäische Akademie has realised a number of projects that dealt with problems stemming from areas as diverse as sustainable development, energy supply, pharming and research in the modern neuro- and lifesciences. In the coming years, too, this attempt to develop a common method for the study of scientific and technological advance will be carried on. In addition, the work on the methodological foundations used in its work has been continued as it can be seen from the publication list of the in-house and external publications of the staff members of the Europäische Akademie.

English is the working language in many of the projects run by the Europäische Akademie. Due to the development of scientific co-operation on the European level the international integration of the Europäische Akademie considerably improved – as it is reflected in the composition of the Scientific Council with members from several European countries. Furthermore, the Europäische Akademie became a member of several European networks and associations, thus, its abilities for supranational cooperation have been further improved. This internationalisation of the Europäische Akademie is expected to continue in the years to come.

## 4 Scientific Strategy

In the coming years, it will be a matter of continuing to pursue the chosen path, to consolidate the competence attained in the work already accomplished by the project groups and to open up new fields of competence. The core competence fields of the Europäische Akademie

### 1. in the methodology field are:

- To establish more precisely the concept of Technology Assessment, both from the theoretical and the practical point of view, including the conceptional debate on other modes of approach, in particular that of participatory Technology Assessment.
- To conduct ethical reflections on the problems in the technical and medical spheres as well as the provision of the necessary methodological means. Analyses and reconstructions on the principles of interdisciplinary working methods.

### 2. in the subject field, the future (and in part already present) topic areas of the Europäische Akademie are:

- Circumspective ways of working in the fields of environment, climate and technology;
- The social challenge of the modern biosciences;
- New developments in the field of medicine and their consequences for society;
- Rational organisation of the information society.



## **II RESEARCH RESULTS**

# 1 Project Groups

## 1.1 Clinical Research in Vulnerable Populations

(Duration 12/08–6/11)

### Background

Clinical research in vulnerable populations – such as minors, elderly, and the mentally ill – is an increasingly urgent problem. For example, a large part of pharmaceuticals which is given to children and adolescents is used “off label” or “off licence”, i.e. either the pharmaceuticals have, due to lacking research data, no license for paediatric use or they have at least no license for the specific medical condition that they are used for. In such cases physicians cannot base their treatment decisions on scientific data, but have to fall back on subjective experience. The state of clinical research in other vulnerable populations is also far from satisfying. Here too, pharmaceuticals are partly not licensed, whereas in other cases more effective pharmaceuticals have not been developed yet (e.g. dementia). Exposing patients to medication unsuitable and risky for them is, however, both morally and legally questionable.

1) The moral acceptability of clinical research in vulnerable populations: Though there is a broad consensus on the basic moral principles of guiding research on human beings in general, several concepts of crucial importance for the moral evaluation of clinical research in vulnerable populations are unclear: the conceptual clarification and practical implementation of amongst others ‘proxy consent’, ‘minimal risk’, ‘acceptable risk-benefit ratio’, and ‘therapeutic versus non-therapeutic research’ are contested issues. Moreover, there are still no instruments available that would allow, for example, an easy standardised case-to-case evaluation of the capacity to consent in vulnerable populations. In effect it remains an urgent task to fill the gap between the theoretic understanding of the fundamental moral principles guiding research in vulnerable populations, and the practical implementation of these principles in everyday clinical practice.

2) The economic feasibility of research in vulnerable populations: In the last decades clinical research, especially the development of new pharmaceuticals, has been almost exclusively in the hands of private for-profit companies. Despite the now common criticism of “big pharma” we should not forget that this model has been beneficial for both companies and society for a long time. There are indications, however, that the structure of the pharmaceutical industry is changing. One reason for that may be

that the classical business model of the pharmaceutical industry based on the development of so-called blockbusters, i.e. drugs for large patient collectives, has limitations in view of the needs of smaller patient groups such as minors and mentally ill – not to speak of all the age-, gender-, and ethnicity-specific variations in therapeutic needs increasingly discovered. Unfortunately, recent European policy action aiming to improve clinical research for minors – such as the regulation (EC) No 1901/2006 on medicinal products for paediatric use – mainly focuses on stimulating the for-profit pharmaceutical industry to invest more capacities into research for vulnerable populations. Though the incentives offered, e.g. patent extensions, may be fruitful, further efforts should be taken to develop alternative non-profit research schemes – efforts already undertaken in the United States for some years.

3) Clinical research in minors outside the western world: A main concern of researchers both from universities and industry remains to find sufficient numbers of patients as test persons. Often legal guardians in the western world dislike the idea that their wards take part in clinical research. For these and other reasons, it comes not to a surprise that there is a tendency to perform the clinical research, which is needed for licensing of new products in the West, outside the western world – e.g., it is well-known that many studies conducted on minors are conducted in countries such as Romania, Ukraine, and India. The worry to be addressed thus is that the current trial requirements for market authorisation of pharmaceuticals imposed by the regulators will give rise to a morally questionable “research colonialism”.

#### Task

The project aims at developing recommendations for the improvement of clinical research and consequently an improvement of the therapeutic situation of vulnerable populations. The project is a collaboration between the Europäische Akademie and the Berlin-Brandenburgische Akademie der Wissenschaften (BBAW).

#### Current State of the Project

As a first preparatory step the Europäische Akademie and the Berlin-Brandenburgische Akademie der Wissenschaften organised the international and interdisciplinary conference “Clinical Research in Vulnerable Populations” in April 2008. By the end of 2008 the boards of the Europäische Akademie and the Berlin-Brandenburgische Akademie der Wissenschaften approved the project. A kick-off-meeting is planned to take place at the beginning of 2009.

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(to be amended)

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Publications

- F. Thiele, J. M. Fegert, G. Stock (eds) Clinical research in minors and the mentally ill. Volume 46 of the “Graue Reihe”, Europäische Akademie Bad Neuenahr-Ahrweiler, 11/2008
- F. Thiele “Clinical Research on Minors”, Newsletter 4/2008

Funding

Berlin-Brandenburgische Akademie der Wissenschaften (partly)

## 1.2 Radioactive Waste. Technical and Normative Aspects of its Disposal (Duration 10/08–10/10)

### Background and Tasks

In the public and political debate on nuclear power it is constantly mentioned that the question of final repository is not yet solved and that therefore the usage of nuclear power could not be justified. The project will critically reconstruct and probe the applied standards and criteria for radiation protection and the physical-technical bases of the designs for the final storage of low-, medium- and high-level radioactive waste and burned out fuel assemblies that are stipulated for a long-term security. Furthermore, it will work out a survey of the strategies, concepts and rules that are established in the most important of the countries that operate nuclear power plants. Since there is a controversy on the transports of high-level radioactive waste, too, the project group will focus on special questions connected with this desideratum, too.

On the basis of this exploration the project group will develop rationally justified criteria for the evaluation of these approaches concerning the technical requirements as well as the requirements that derive from the necessity of protecting man and nature. These reflexions necessarily must comprise juridical, economical and ethical reflexions: An adequate evaluation of the different options presupposes a juristical examination of the national and transnational regulations, the options are to be evaluated by economical means, and the question of long-term responsibility needs to be answered from an ethical point of view.

The results from the normative examination and those contributed by the physical and engineering sciences will lead to a concise assessment of all relevant options and to recommendations justified on the basis of transdisciplinary acceptable arguments.

### Current State of the Project

In August 2008 there was a first meeting concerned with the conception and preparation of the project group. After a phase of acquisition the members of the project group came together for its first regular meeting in December 2008, during which the coordinated formulation and concerted adoption of a working plan was the main topic. A kick-off-meeting is planned to follow as soon as possible.

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Funding

VGB Powertech (Essen)

### **1.3 Deep Brain Stimulation in Psychiatry. Guidance for Responsible Research and Application (Duration 10/08–9/11)**

#### Background and Tasks

Deep Brain Stimulation (DBS) refers to the delivery of electrical current to sub-cortical brain regions by means of permanently implanted electrodes connected to a neurostimulator. High-frequency stimulation has become the treatment of first choice for tremor associated with Parkinson's disease and other neurological disorders. Since several years now DBS is being tested in psychiatric disorders as well, because the high number of treatment refractory psychiatric patients creates a desperate need for new therapeutic options. It is assumed, for instance, that at least 10% of all patients suffering from major depression are not responding to conventional therapeutic approaches. Different regions in the brain are currently studied as possible targets for DBS in resistant major depression. Early attempts at exploring the potential of DBS for treating psychiatric disorders were made in the 1990s in patients with severe and treatment-resistant obsessive-compulsive disorder (OCD). To date, the efficacy of DBS for OCD has been studied in two trials including double-blinded crossover phases, and several case reports. Further neuropsychiatric conditions presently considered for treatment with DBS include addictive disorders like alcohol dependency, anxiety disorders, and Tourette-syndrome.

These recent attempts at using DBS for the treatment of psychiatric disorders have been burdened by the somewhat precarious legacy of psychosurgery. In their early days, neurosurgical interventions for psychiatric disorders were destructive and crude interventions, indiscriminately applied, often undertaken with the aim to better control difficult patients, neither guided by sound hypotheses nor accompanied by scientific assessment of its wanted and unwanted effects. Since then the situation has changed considerably due to the refinement of neurosurgical methods, the application of results from research on the neurocircuitry of different psychiatric disorders, and the advancement of methodological as well as ethical research standards in psychiatry. With particular respect to DBS the procedure's adjustability and complete reversibility are worth mentioning. By adjusting the frequency, polarity, amplitude and pulse-width of the stimulating electrical current a patient's changing symptoms and disease progression can be taken into account. As regards reversibility, the stimulating current can be turned off at any time. Moreover, if

required, the electrodes and the neurostimulator can be removed.

In spite of promising results in the aforementioned treatment trials, DBS in psychiatry is currently viewed with great skepticism. This is not likely to change unless the fundamental concerns raised by the far-reaching possibilities of influencing the human mind by means of electrical brain stimulation are properly addressed. The Europäische Akademie has contributed to a clearer understanding of these concerns with its completed research project “Intervening in the Psyche. Novel Possibilities as Social Challenges”. Given the increasing interest in psychiatric applications of DBS it is important and worthwhile to dedicate a follow-up project to this subject.

In view of the promising, yet uncertain therapeutic potential of DBS for psychiatry the main aim of the proposed project is to safeguard the interests of patients suffering from severe psychiatric disorders. On the one hand, it is in their interest that an auspicious treatment option is not left unexplored just because it is prompting vague fears of “mind control” or because it can be seen as the continuation of earlier and much cruder psychosurgical procedures. On the other hand, this particularly vulnerable group of patients certainly has to be protected from overambitious researchers and practitioners who may disregard ethical or methodological standards in their work. Whether and in which ways recognized research and practice standards should be modified in order to account for the peculiarities of DBS will be the central research question of the envisaged project group.

More specifically, these are some of the salient issues with respect to which the project group shall seek to offer guidance:

- Investigational protocol: Are there any specific methodological and/or ethical requirements that should be met by clinical research protocols investigating the therapeutic value of DBS in psychiatric disorders?
- Research subject and patient selection: What general considerations should govern the selection of research subjects in psychiatric treatment studies using DBS? Who is to decide on a patient’s inclusion in or exclusion from a trial? It is increasingly common that multidisciplinary healthcare committees review the eligibility of patients to treatment with DBS. What should be the composition of such committees and which criteria should they apply in their judgments?
- Informed consent: Only those patients are taken into consideration as candidates for DBS whose ability to provide valid consent may be diminished already

because of their severe treatment-refractory forms of psychiatric disorder. Moreover, there is the problem of how to adequately inform patients of possible personality changes which are hard to grasp and even harder to predict.

- **Autonomy:** By which provisions can undue manipulation of remote controlled stimulators be ruled out? Under what conditions and to what extent should patients be enabled to control the stimulation device themselves?
- **Detecting side-effects:** The neurosurgical implantation of the stimulation electrodes for DBS is associated with severe risks occurring rarely, such as bleeding, infection, or hemiparesis. Which neuropsychological test procedures should regularly be applied before and after neurosurgery for DBS? Subtle changes in a patient's behavior indicative of personality changes and other psychic side-effects may only become obvious in the long term. Is it possible to increase the likelihood of detecting such side-effects without at the same time increasing the costs for the follow-up assessment in unacceptable ways?

With regard to possible applications of DBS it has been decided to focus on therapy, leaving aside imaginable enhancement uses which would raise a distinct set of ethical and social issues. Moreover, other electrical stimulation techniques with possible applications in psychiatry, like Vagus Nerve Stimulation or Transcranial Magnetic Stimulation, will not be considered. This limited research agenda shall help to achieve results highly relevant for the actual clinical practice. However, since all techniques of neuromodulation raise similar concerns, it deserves mention that the project's results will be easily transferable to them.

#### Working Programme

In October 2008 the project members met for the first time. The group is composed of leading international experts from the relevant clinical disciplines neurosurgery, psychiatry, neurology and neuropsychology as well as experts in medical law and ethics. Altogether nine meetings are supposed to take place over a period of three years. This working period can be subdivided in three stages, each with a duration of approximately one year:

**Stage 1:** During the first three meetings each member of the project group should have the opportunity to share his or her experience and knowledge regarding the use of DBS in psychiatry with the rest of the group. Every speaker will be requested to identify the issues considered to be most critical for the project's progress.

**Stage 2:** Based on the proceedings of stage 1, particularly important and/or disputed issues will be selected for thorough discussion. Furthermore, during this stage the group may decide to invite external speakers who can provide additional expertise on specific topics.

**Stage 3:** The final stage is dedicated to preparing the draft of the project's target publication. Based on their special expertise, individual project members will compose parts of the paper which will be integrated into a coherent draft by the group's chairman and the project coordinator.

The research community in the field of DBS in psychiatry can best be addressed by a guideline paper in a medical journal with high impact. This concise publication should be complemented by one or more lengthier papers elaborating on the rationale behind the guidelines. In order to create additional publicity, it is planned that all or most members of the project group jointly present the results of their research collaboration on a major international conference. The format of this conference should be such that it is also attended by public health officials, government regulators and other pertinent decision-makers.

#### Project Members

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## 1.4 Potentials and Risks of Psychopharmaceutical Enhancement (Duration: 7/06–10/09)

### Background and Tasks

The project delivers an in depth analysis of a topic which has already been touched upon in the project “Intervening in the Psyche: Novel Possibilities as Social Challenges” (Springer 2007, Volume 29, series “Ethics of Science and Technology Assessment”). In this earlier project, various new methods of intervening in the brain were explored and, among other legal and ethical issues, questions related to the possibility of such interventions being used for non-therapeutic purposes were addressed. It turned out that particularly difficult normative issues are raised by the emerging social trend towards utilizing medical means for the enhancement of emotional well-being and cognitive performance beyond what is considered “normal” or “natural” in healthy individuals. At present, the clearest indication of this development is given by the well-established fact that a growing number of people, not suffering from cognitive impairment or emotional disturbance in any clinical sense, seem to be ready to consume psychoactive drugs to achieve mood or cognitive enhancement. Hence, it has been decided to run this followup project with a much narrower focus than the previous project so that more significant answers to the complex challenges posed by enhancement applications of psychopharmaceutical substances can be found.

The current way of using the term “enhancement” to denote medical measures aimed neither at treating nor at preventing diseases originated in the 1980s when the new molecular biological DNA techniques, and their diagnostic use in reproductive medicine, led to the possibility of enhancing one’s offspring by selection. Looking back today, many expectations of genetic enhancement proved to be premature, if not even preposterous. Within a few decades, the same may turn out to be true for certain of today’s fantasies of transcending human limitations by neuro-bionic implants and other advanced technical devices. However, many pharmaceutical means to enhance various human features are readily available nowadays. Therefore the actual trend towards consuming psychopharmaceutical drugs for non-therapeutic purposes is the most useful reference point for an analysis of the normative problems associated with enhancement issues.

Two psychopharmaceutical drugs in particular assumed an almost emblematic role in the public debates on mood and cognitive enhancement respectively:

i) During the 1990s the antidepressant Prozac® gained fame as a lifestyle drug promising everyone who consumes it to feel “better than well”. Patients treating their depression with Prozac® (or some other selective serotonin reuptake inhibitor) reported to feel “more authentic” or to feel “like themselves” for the first time in their lives, thereby inspiring many people not suffering from any mood disorder to give it a try. ii) As regards cognitive enhancement, the psychostimulant Ritalin® is being frequently prescribed for children and adolescents with attention deficit hyperactivity disorder. Since, apparently, it also benefits healthy individuals by generally increasing attentive capacities, Ritalin® (and other drugs containing methylphenidate) has become more and more popular with people of all ages. For instance, according to several studies the illicit use of Ritalin® is quite common among U.S. college students in order to gain a competitive edge in exams. Psychopharmaceutical enhancement is certainly not an utterly new phenomenon. The general readiness to seek an improvement of mental features by consuming suitable substances, absent of any therapeutic need, seems to be an anthropological given. Examples range from the mild cognitive boost achievable by a cup of coffee to states of ecstatic euphoria induced by potent natural or “designer” drugs. Thus, an adequate assessment of the potentials and risks of psychopharmaceutical enhancement needs to be based on a clear understanding of what is genuinely new about this development. Furthermore, it is necessary to distinguish between risks for the individual human being making use of pharmaceutical means for enhancement purposes and risks for society arising from the widespread application of such means.

Concerns about the possible influence of psychopharmaceutical enhancement on the individual consumer are mostly expressed by using three key concepts: personal identity, autonomy and authenticity. Concerns regarding personal identity are caused by the intuition that the regular usage of potent psychopharmaceutical substances to enhance mood or cognition could change a person so thoroughly that he or she would no longer be “the same he/she used to be before”. Autonomy could be at stake either when an enhancement drug has a deleterious effect on its consumers’ will power or when forms of social pressure are exerted on the individual to take “smart drugs” in order to keep up in competitive settings.

Finally, the consumer statements quoted above concerning the experience of taking Prozac® portray it as a kind of “authenticity generating” drug. However, some critics of psychopharmaceutical enhancement decidedly deny that any change of per-

sonality caused by a pill could ever add to a person's authenticity. They would rather argue that it holds the potential for alienating people from their "true" selves.

As regards the social level, a prominent concern is that the increasing usage of pharmaceutical means for enhancement purposes may undermine distributive justice. If such drugs were so costly that only wealthy people who anyway are in a privileged position could benefit from their mind-enhancing effects, then this might actually fuel social inequality. In stark contrast, those taking a permissive attitude towards enhancement drugs point out that these drugs might as well alleviate the hardships of the "genetic lottery" which endows people most unequally with cognitive assets. Further social concerns relate to cases in which an enhancement is not autonomously sought for, but rather heteronomously imposed on, as for instance by parents on their children or by the state on detainees awaiting parole.

Both kinds of concern, those pertaining to the individual and those pertaining to the social level, are being addressed in the project at hand. In order to set the stage for a balanced assessment of ethical and legal problems arising from the trend towards psychopharmaceutical enhancement two tasks must be completed beforehand: First, the current pharmacological options to achieve cognitive and mood enhancement as well as the associated adverse effects should be known. Second, the enhancement debate is burdened by a number of notoriously vague concepts like authenticity and autonomy. Unless their meaning is clarified they can become obstacles to consensus building on normative issues. In sum, an interwoven set of normative, empirical and conceptual questions has to be answered to obtain a comprehensive assessment of the emerging trend towards psychopharmaceutical enhancement.

### Working Programme

The project is divided into four intimately linked subprojects represented by four cooperating institutions: The aim of the first project is to review the available evidence on the possibilities and risks of psychopharmaceutical enhancement from the point of view of medical science. To this end, a survey of those substance classes will be provided whose enhancing properties are currently under discussion. Apart from giving an outline of the status quo of medical research, the first subproject will also point out foreseeable developments.

The second subproject is dedicated to conceptual and theoretical questions that are of fundamental importance to the ethical and legal debate on pharmacological approaches to mental enhancement. It will attempt to develop a terminological

framework for the description of consequences possibly arising from enhancement measures on the individual and social level. Furthermore, methodical problems of confirming the efficacy of psychopharmaceutical enhancement will be addressed. The focus of the third subproject is the ethical evaluation of the trend towards psychopharmaceutical enhancement. The validity of several objections to this trend is being put to test. For instance, some opponents consider heteronomous kinds of enhancement – as in the case of parents deciding on enhancements of their children – as morally unacceptable. Furthermore, the above mentioned arguments concerning the possible impact of enhancements on personal authenticity and on social justice will be discussed.

The fourth part of the joint project aims to clarify the legal and legal-ethical foundations of potential pharmaceutical enhancements of mental features. From a legal perspective, it is important to draw the distinction between enhancement problems arising within the realm of the social system of medicine, financed by distributive principles of solidarity, and normative problems concerning the actions of individuals. The normative principles upon which, under varying pre-conditions, the legitimacy of enhancement techniques depends will be clarified for both these spheres.

#### Current State of the Project

By the end of 2008, altogether 11 meetings have taken place. Five of them were meetings of all project group members securing the continuous integration of research results from the different subprojects. Because the closely related philosophical, ethical and legal issues require intensified collaboration, members working on subprojects 2 to 4 attended four additional meetings. Finally, two “junior group meetings” were meant to provide the project associates with further opportunities for exchange.

The results of the systematic review (subproject 1) will be published in two separate articles the first of which concentrates on neuroenhancement properties of antidepressants while the second one focuses on stimulant medication. The former article has been accepted by *Poiesis & Praxis* and will be issued in summer 2009 (Volume 6, Number 3), the latter is currently under review. The other subprojects yielded two closely related publications so far, both addressing the possible impact of neuroenhancement drugs on individual consumers. They examine concerns related to autonomy and authenticity of consumers respectively. Both publica-

tions are currently under review and presumably will be published in 2009. Further publications are being prepared. The working period of the project has been extended until October 2009.

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Federal Ministry of Education and Research (BMBF): Research on ethical, legal, and social aspects in biomedicine

### **1.5 The Research Guiding Function of Metaphors from the Information Sciences and their Relevance to the Transformation of the Philosophy of Man** (Duration: 9/06–5/09)

#### Background and Tasks

This project looks into the significance of research-guiding metaphors for the constitution of new concepts of man as well as alterations to pre-existing ones. In a first step the work focuses on the relevance of informational metaphors in information sciences, in biology, and philosophical anthropology. Informational metaphors are often central for scientific and research practices in knowledge-based societies, they dominate interdisciplinary controversies mediating the reception of results in natural science research by humanities and cultural sciences – evident, for example, in the debates about the human genome project. Thus, informational metaphors have to be reconstructed in the way they are used in computer science and genetics (e.g. the term “information”) in terms of linguistic criticism by reflecting upon the pre-suppositions introduced to natural sciences through such metaphors; furthermore, the reductionistic philosophy of man generated by life-science research is critically examined. Thus, analyzing the validity conditions for an adequate philosophy of man by making manifest the research guiding function of informational metaphors and their eventual role for the transformation of the concept of man, the latter might be evaluated with respect to the aims of science. The Europäische Akademie pursues the particular viewpoint that such metaphors can generally be perceived as a technique; thus, they can also be reconstructed through an analysis of technology and philosophical statements about the effects of technology on humans. Therefore, there is reason for technology-guided transformations of the concepts of man, whose consequences must be evaluated in order to draw a more precise picture of knowledge-based societies and the role of man as an actor within them.

#### Working Programme

The project is carried out by three research groups and is coordinated by the Europäische Akademie GmbH. The research groups are working independently on the one hand and integrate their intermediary results on the other hand together with the Europäische Akademie GmbH in regular meetings.

**The three different parts of the project are:**

1. The influence of information techniques on the transformation of concepts of man
2. Semantic of the term “gene” as an informational metaphor
3. Anthropology of development and evolution

In February 2007 and 2008 two greater meeting involving invited experts from different areas (informatics, biology, and philosophy) took place to discuss working results and to provide new ideas on pursuing the project. In January 2008 some first papers had been published in the journal “Poesis & Praxis. International Journal of Ethics of Science and Technology Assessment” (volume 5, Number 3–4): they comprise topics like a discussion of the term “information” as a metaphorical construction in the field of informatics and genetics and on the function the usage of metaphors might have considering them as a technique for certain purposes. The regular Spring Conference of the Europäische Akademie in March 2009 is designed to the project’s subject matter on the interdependence of technique and the concept of man. The final results of the project are expected to be published in the middle of 2009.

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Funding

Federal Ministry of Education and Research (BMBF): Humanities in the societal dialogue

## **1.6 Fuel Cells and Virtual Power Plants as Elements for a Sustainable Development. Innovation Barriers and Implementation Strategies (Duration: 7/06–12/08) (completed)**

### Background and Tasks

One major aspect of sustainable development in society is an assured, efficient and sustainable energy supply. In this context, the fuel cell is treated as a promising energy conversion technology. The reason is its attractive technical principle of the reverse electrolysis of water which is characterised by a high efficiency in converting chemical energy directly into electricity and, if the fuel cell is driven with pure hydrogen, the exclusive environmental-friendly chemical reaction product water. A major application field for fuel cells is seen in stationary combined heat and power plants which can cover the demand of individual households up to whole residential areas including small companies. Installations of such facilities on a grand scale require technically elaborated decentralised energy systems which may include, beside fuel cells, further supplementing technologies for the generation and storage of heat and electricity. Decentralised facilities can be coupled to a so-called ‘virtual power plant’. Such a combination of plants ensures a better exploitation of available energy sources and a warranty of energy supply even in situations with high peak consumption which could not be served by individual small facilities. In spite of the long development time and the accessibility of some first devices which are already economically interesting for investors, the market penetration of stationary fuel cells has not gone beyond the installation of a small number of demonstration facilities. A similar situation can be observed for virtual power plants consisting of small facilities with a few kilowatt of produced power which so far have only been realised as small scale projects.

The aim of the study was to identify factors which interfere with the introduction and implementation of fuel cells and virtual power plants on the market and to develop strategies to change these with adequate effort and consequences. In order to reach this aim, the project team first analysed the short-term, midterm and long-term potentials of the technologies and their potential contributions to a sustainable development relatively to competing alternatives. Additionally, determinants and impacts of innovation processes required to realise the identified potentials were examined. Furthermore, barriers for introducing and implementing

the technology on the market, particularly on local and regional level, were investigated. Beside others, especially technical, economic, and legal aspects were considered. In a next step measures were found and combined to efficient strategies in order to eliminate the barriers before their potential sideeffects were explored. Finally, recommendations for decision makers and practitioners were drawn from the findings achieved in the project. Overall, the study was designed to concretise the results worked out in the former project of the Europäische Akademie “Sustainable Development and Innovation in the Energy Sector” (Springer 2003, Translation of volume 18 “Nachhaltige Entwicklung und Innovation im Energiebereich”, series “Ethics of Science and Technology Assessment”) in the area of fuel cells and virtual power plants.

In order to cope with the tasks of the project, the focus of the study was set on small fuel cells, so-called ‘fuel cell heating devices’, applied for house energy supply and German framework conditions.

Beside researchers and students from the respective scientific fields, the addressees of the study represent particularly actors concerned with the implementation of the analysed energy systems from policy and energy industry and the interested public.

#### Working Programme

Pre-Phase, July 2006–January 2007

In the pre-phase of the project, the main focus of the study, the strategy for the project, the detailed work programme, responsibilities of the group members and the first draft structure of the final book have been elaborated. Additionally, a Kick-off Meeting has been carried out at the end of January 2007 in order to discuss the work programme with external experts of the respective fields: Rüdiger Barth (Universität Stuttgart), Dr. Martin Rumberg (TU Kaiserslautern), Alexander Dauensteiner (Vaillant GmbH), Gesine Arends (Robert Bosch GmbH), Dr. Jürgen Pawlik (Viessmann Werke GmbH & Co KG), Martin Hopfer (E.ON Energie AG), Dr. Oliver Franz (RWE Energy AG), Dr. Heinz Wenzl (TU Clausthal), Sabine Frenzel (Bundesnetzagentur), and Dr. Michael Brand (Institut für ZukunftsEnergie-Systeme gGmbH). Furthermore, first seeding papers to basic issues of the study have been produced.

First Main Phase, January 2007–October 2007

In the first main phase of the project the work programme was fixed, further seeding papers have been produced and already existing papers have been better worked out to incorporate them into a first draft of the final study. This draft included already the major elements, except for the chapter on strategies and the recommendations. The interim draft was discussed with external referees from science and practice in a Mid-term Meeting on 8<sup>th</sup> November 2007: Dr. Frank Koch (Kompetenz-Netzwerk Brennstoffzelle und Wasserstoff NRW), Tobias Barth (EWE AG), Dr. Martin Pehnt (ifeu – Institut für Energie- und Umweltforschung Heidelberg GmbH), Dr. Ines Omann (SERI Nachhaltigkeitsforschung und -kommunikations GmbH, Wien), Michael Kohlhaas (Finanzwissenschaftliches Forschungsinstitut an der Universität zu Köln), Professor Dr. Wilhelm Althammer (HHL – Leipzig Graduate School of Management), Dr. Olaf Däuper (Becker Büttner Held, Rechtsanwälte Wirtschaftsprüfer Steuerberater, Berlin), Professor Dr. Reinhard Madlener (E.ON Energy Research Center, RWTH Aachen), and Professor Gernot Klepper, Ph.D. (Institut für Weltwirtschaft an der Universität Kiel (ifw)).

Second Main Phase, November 2007–December 2008

Within the second main phase of the project, the comments of the reviewers were considered, existing papers to specific subjects have been further integrated and the integrated parts of the study on barriers, strategies and recommendations have been composed by the group. Furthermore, the whole study was reviewed by the Europäische Akademie's Scientific Advisory Board, finalised and published as a book which was presented at 9<sup>th</sup> December 2008.

Results

From the elaborations of the individual aspects and the obstacle-removal strategies, 29 concrete recommendations have been derived which are aimed at the further handling of the technologies. Some of the recommendations are summarised in the following:

Technical Development of Fuel Cell Technology

- In order to be also applicable for prospectively future low heat demand of houses, additionally to the existing fuel cell heating devices, *small facilities with electric power below 1 kW<sub>el</sub>* should be developed.

- For a long-term and widespread usage of the technology, additional possibilities to, respectively, recycle and exchange some *rare materials* required for the production of the devices should be worked out.

#### Integration of Fuel Cell Heating Devices into the Energy System

- Operational modes of fuel cell heating devices in houses should be switched, dependent of the height of payments which could be received for electricity feed-in, between serving *the actual heat demand* of the object and *external pre-settings*.
- Micro-CHP-plants in Virtual Power Plants should ideally be operated to provide shares of *base and peak load* which currently are produced in much less efficient large-scale power plants as well as to improve the *supply security in the distribution grid* and thus, to support the application of regenerative energies with fluctuating availability.

#### Support for the Realisation of Benefit Potentials of Virtual Power Plants

- In order to use micro-CHP-plants for grid management, these have to be perceived, beside grid extensions, as an option by the grid operator. As one essential item in this context the *quality regulation* in the area of incentive regulation should be designed adequately.
- More *flexibility in balancing power and the compensation energy market* should be realised. This would allow markets to emerge through which peripheral facilities could contribute to a larger extent to electricity balancing, even without the way over the transmission network.

#### Configuration of Framework Conditions

- A number of *market distortions* exist due to the current regulation of taxes, charges, and subsidies, as well as in governmental funding systems and regulations, which should be removed wherever possible.
- Incentives should be provided to depart from the *priority principle* when operating a plant and *distribution mechanisms* for cases of insufficient grid capacity should be reviewed.

Final report

B. Droste-Franke, H. Berg, A. Kötter, J. Krüger, K. Mause, J.-C. Pielow, I. Romey, T. Ziesemer, Brennstoffzellen und Virtuelle Kraftwerke. Energie-, umwelt- und technologiepolitische Aspekte einer effizienten Hausenergieversorgung (volume 36 of the series “Ethics of Science and Technology Assessment”, ed. C. F. Gethmann). Springer, Berlin 2009

In addition, the English summary of the study was published in the Europäische Akademie’s “Graue Reihe”:

B. Droste-Franke, H. Berg, A. Kötter, J. Krüger, K. Mause, J.-C. Pielow, I. Romey, T. Ziesemer: Fuel Cells and Virtual Power Plants. Energy, Environmental, and Technology Policy Aspects of an Efficient Domestic Energy Supply. Executive Summary (volume 47 of the “Graue Reihe”), 11/2008

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Funding

Federal Ministry of Education and Research (BMBF): Competition for interdisciplinary junior scientist groups within the framework of innovation and technology analysis

## **1.7 Pharming. Genetically Modified Plants and Animals as Future Production Site of Pharmaceuticals?** **(Duration: 7/06–12/08)** **(completed)**

### Background and Tasks

Pharming is a new branch of biotechnology that uses transgenic plants or animals as living “factories” to produce human or animal pharmaceuticals. The class of drugs that is manufactured with pharming technology is called biopharmaceuticals. These are pharmaceutical compounds – in most cases therapeutical proteins – that cannot be produced by conventional chemical synthesis. Instead, they can be isolated from biological material (e.g. blood plasma) or they can be produced in living systems. Biopharmaceuticals have a wide range of applications, including some vaccines and cancer treatments. Their market value is estimated to rise to about 70 billion US dollar by 2010. The increasing demand for biopharmaceuticals has caused a shortage in production capacity and first cases of patient-waiting-lists, because the current method to produce biopharmaceuticals by fermenter grown recombinant cell cultures is costly and inefficient. It is hoped that with pharming the enlargement of production capacities (e.g. growing more transgenic crops or breeding more transgenic animals) may be quicker, cheaper, and more flexible compared to current production processes. In addition, by overcoming technical or financial limitations, pharming may also enable the development of new therapeutic compounds.

However, while pharming is hoped to be useful for producers, patients and social security systems, it also raises a number of complex ecological, ethical, societal and juridical questions, e.g. with regard to contamination of the food/feed chain, gene flow and gene drift into the environment, harm to the production animals, safety of the medicines for the patients. The project has evaluated the potentials and risks of pharming, addressed the corresponding ethical, legal and social questions, and made recommendations with regard to legal regulation and policy action for the responsible further development of pharming.

### Project Progress

In spring 2006, a project group was constituted with representatives from plant biology, ecology, animal biotechnology, animal welfare, ethics, sociology and law

(see list of project members below). Four of the group members were external senior scientists, and three formed a junior research group at the Europäische Akademie. In addition, an industrial partner and a Ph.D. student were affiliated with the project.

#### Phase 1: Exploration and consolidation

During the first phase of the project, in a series of three meetings, the group members introduced each other to their respective areas of expertise and lay the foundations for the interdisciplinary work. The general strategy for the project was set up, the topics to be covered were chosen, and a basic structure for the envisaged book was devised. The first project phase was finalised with the project group's fourth meeting in September 2006, for which external experts – Dr. rer. nat. Stefan Schillberg, Professor Dr. phil. Dieter Birnbacher, Professor Dr. jur. Ralf Müller-Terpitz, Professor Margaret Eaton, Pharm. D., J. D., and Professor Dr. rer. nat. Joachim Schiemann – were invited to the Berlin-Brandenburgische Akademie der Wissenschaften. Proceedings were published as volume 43 in the Europäische Akademie's "Graue Reihe". A break-through for the pharming industry coincidentally also marked the end of the first project phase: the first animal pharming product, an anti-blood-clotting factor, obtained regulatory approval in Europe.

#### Phase 2: Working out the main results

Over the course of the next year, seed texts for all chapters were prepared by the authors, and discussed by the group in a series of five meetings. The texts were then sent to external experts who were invited to review them and to present their comments at a meeting in Berlin in September 2007. The reviewers were:

Priv.-Doz. Dr. rer. nat. Broder Breckling, Universität Bremen, Germany

Professor Dr. vet. med. Jörg Luy, Freie Universität Berlin, Germany

Professor Dr. jur. Ralf Müller-Terpitz, Universität Passau, Germany

Professor Dr. Peter Sandøe, Ph.D., Københavns Universitet, Denmark

Dr. rer. nat. Stefan Schillberg, Fraunhofer IME, Aachen, Germany

Dr. rer. nat. Elmar Schmitt, Merck KGaA, Darmstadt, Germany

Professor Gary Walsh, Ph.D., University of Limerick, Ireland

Professor Bruce Whitelaw, Ph.D., Roslin Institute, Scotland

Professor Dr. jur. Gerd Winter, Universität Bremen, Germany

Following the expert meeting, a symposium was carried out in cooperation with the Berlin-Brandenburgische Akademie der Wissenschaften, to address the topic of genetic engineering in livestock on a broader basis (funding obtained for the symposium from the Heckmann Wentzel Stiftung Berlin is gratefully acknowledged). Proceedings of the symposium were subsequently published with contributions by Professor Louis-Marie Houdebine, Ph.D., Professor Dr. phil. Matthias Kaiser, Professor Dr. med. vet. Heiner Niemann (with Dr. rer. nat. Wilfried Kues and Joseph Carnwath, Ph.D.), Professor Angelika Schnieke, Ph.D., Dr. Cornelius G. Van Reenen, Ph.D., and Professor Gary Walsh, Ph.D.

### Phase 3: Finalising the project

On the basis of the criticism and suggestions received from their peers in Berlin, the authors went on to revise their drafts and present them to the group for new rounds of discussion. At this point, data from a large 15-country survey supporting the chapter on public views and attitudes also became available and were integrated into the project. The group started to consider the conclusions and recommendations chapter which was written jointly in a process of draft sharing, and to which the two final meetings were almost exclusively devoted. In spring 2008, the draft of the final report book was presented to the Europäische Akademie Scientific Advisory Board and approved of with minor corrections. It was printed and publicly presented at the Berlin-Brandenburgische Akademie der Wissenschaften in October 2008. Further dissemination of the project's results continued in November and December 2008.

### Conclusions and recommendations

The group concluded that pharming is a viable and potentially competitive way of producing biopharmaceuticals. However, a clearer regulatory framework (including common EU guidelines) and more transparency on the side of the responsible authorities were recommended. In this context, better access to information and promotion of risk research are required. It is also necessary to take into account that the current lack of knowledge leads to a high level of uncertainty in the scientific risk assessment of pharming. Therefore, pharming should only be realized with strong security measures and after case-by-case assessment of each individual project. Such case-by-case assessment, the authors demand, should include evaluation of the potential benefit of the envisaged product, in addition to a compre-

hensive risk assessment that specifically takes into account potential animal suffering in the case of animal pharming and the potential spread of pharming-genes in the case of plant pharming.

Final report

E. Rehbinder, M. Engelhard, K. Hagen, R. B. Jørgensen, R. Pardo Avellaneda, A. Schnieke, F. Thiele, Pharming. Promises and risks of biopharmaceuticals derived from genetically modified plants and animals (volume 35 of the series “Ethics of Science and Technology Assessment”) Springer, Berlin 2009, ISBN 978-3-540-85792-1

**In addition, external speakers’ papers at the kick-off meeting and the symposium were published in:**

M. Engelhard, K. Hagen, F. Thiele (eds) Pharming. A New Branch of Biotechnology. Volume 43 of the “Graue Reihe”, Europäische Akademie Bad Neuenahr-Ahrweiler, 11/2007

M. Engelhard, K. Hagen, M. Boysen (eds) Genetic Engineering in Livestock. New Applications and Interdisciplinary Perspectives (volume 35 of the series “Ethics of Science and Technology Assessment”) Springer, Berlin 2009, ISBN 978-3-540-85842-3

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Funding

Federal Ministry of Education and Research (BMBF): Competition for interdisciplinary junior scientist groups within the framework of innovation and technology analysis (BMBF-Wettbewerb für interdisziplinäre Nachwuchsgruppen im Rahmen der Innovations- und Technikanalyse)

### **1.8 Responsibility for Future Generations. Implementation of Sustainability in Schooling** **(Duration: 1/06–9/08)** **(completed)**

#### Background and Tasks

A successful implementation of the concept of sustainability in social planning and acting presupposes that it is supported by as many people as possible. Thus, the adolescent generation should be enabled to identify long-term problems as early as possible, to reflect on them rationally and to cope with them legitimately in view of their responsibility for future generations. The assumption of responsibility for future generations requires a broad development of competences in perceiving, reflecting und solving problems of a long-term dimension. Hitherto, the advancement of such competences has not yet been a systematic subject of schooling and thus, it appears in the curricula only occasionally. The project “Responsibility for Future Generations. Implementing Sustainability in Schooling” worked on the basis for this implementation.

The project was established in the context of the action programme of the UN-Decade “Education for Sustainable Development 2005–2014” that the United Nations concerned about the consequences not-sustainable human styles of live and management will have for future generations have initiated to sensitise the adolescent generation for long-term aspects of their present and future behaviour. Similarly it supports the German Federal Government’s initiative to intensify the transfer from results from the sustainability research into the public and in the practice of schooling in particular.

Especially the project “Responsibility for Future Generations” aims to justified recommendations on what exactly is to be promoted in school: What does it mean to assume responsibility for future generations adequately? How is ‘sustainability’ to be defined, if a sustainable development should measure up the responsibility for future generations? Which competences are to be developed and promoted to meet the challenges?

The interdisciplinary working group was established in early 2006, founded in the framework of the Programme “Research for climate protection and protection against climatic impact” of the German Federal Ministry of Education and Research. Macro- and micro-economists, philosophers, educationalists, specialists

in decision-theory and risk-analysis as well as teachers worked together on these tasks until the end of 2007 and presented, in collective authorship, an integrated study with detailed recommendations in September 2008.

### Working Process

The project group started – after a constitutional and preliminary phase – with a first meeting in December 2006 and worked out a detailed disposition of and first contributions to the intended study. First results of an explorative inventory of the status quo of the education for sustainability in Germany showed that in the governmental guidelines for schooling the idea of sustainability is only of a marginal range and the daily practice in school is foremost dependent on the teachers' own initiative and conviction. In most cases it regularly submits a concept of preservation of natural resources instead of a concept of rational and accountable utilization as is implied in the idea of sustainability.

Hence in the very first place an offer were to be submitted for a plausible and comprehensible understanding of sustainability that meets as well the requirements both of the now living and of the future generations. A survey of the different concepts of sustainability and, since it is an essential part of it, of the different concepts of justice was given and the pros and cons of each discussed. A so-called critical sustainability will be recommended that allows (a) controlled but principally unrestricted use of some classes of resources, as long as equivalent substitutions are hold available, (b) only restricted and controlled use of those resources that are not substitutable and (c) no use of unique resources that are destroyed by any utilisation.

This and other preliminary parts of the study, mostly in the form of extended abstracts, were the subject-matter of the first feedback meeting on 15<sup>th</sup> December 2006 at the Universität Bremen. The panel of external experts consisted of:

#### **Professor Dr. Andreas Ernst**

Professor of environmental systems analysis at the Center for Environmental Systems Research of the Universität Kassel and chairman of the environmental psychology division of the German Psychological Association

#### **Professor Dr. Andreas Fischer**

Professor of the didactics of economics at the Universität Lüneburg and chairman of the German Gesellschaft für berufliche Umweltbildung e.V.

**Professor Dr. Ulrich Hampicke**

Professor of the economics of landscapes and resources at the Institut für Botanik und Landschaftsökologie at Universität Greifswald

**Professor Dr. Monika Keller**

research scientist at the Center for Adaptive Behavior and Cognition of the Max Planck Institute for Human Development (MPI für Bildungsforschung) in Berlin

**Professor Dr. Christoph Lumer**

Professor of Moral Philosophy at the University of Siena

The project group adopted a few helpful suggestions of these referees e.g. that the study should not, as was originally planned, be restricted on the senior years of secondary school (Sekundarstufe II) alone, that an expansion of some chapters dealing with normative aspects of the topic would be helpful, or that the agenda should be supplemented by an extensive examination of and reflexion on life-styles. But since in its essence the further agenda was approved by all commentators, the working group started to work out in detail its hitherto provisional plans.

In the following the extensive discussion on the “seed text” on the topic of sustainability revealed misconceptions and disagreements between the representatives of the various disciplines that indicated – in departure from the original plan – a closer analysis of the concept of ‘sustainability’. The concept is not only classificatory but normative and encloses prudential requirements that gain their legitimation from what is practically necessary for a circumspective long-term planning, as well as ethical requirements that are legitimated with respect to the concepts of justice. These requirements can collide, and since this inhomogeneity can lead in contradictions, that may obstruct planning, decisions and their outworking in action, the group worked on a more concise reconstruction of what should be the core of so-called education for sustainable development. Consequentially the group in its ongoing discussion the group developed a more differentiated concept of “education for sustainable and just development” that names the two requirements by different terms, makes the possible collisions identifiable and tries to enable the pupils to cope with the resulting dilemmas.

As another seed paper worked out, dilemmas like this are ubiquitous in the field of sustainability. There are for example the dilemmas between now-for-now-pref-

erences and now-for-then-preferences, that could not be satisfied together, the dilemma between sustainability and efficiency, between ecological, economical and social aspects of sustainable acting and others. Competences that support an effective dealing with dilemmas in general are therefore, among others, a necessary part of the canon of competencies that should be educated in school, according to the project group's further analysis. Since the competence to cope with dilemmas proved to be an outstanding one the group decided, to give it a further treatment in another part of the study, that became later on a whole chapter on "economic competences, dilemmas and sustainable consumption" (chapter 9).

Those dilemmas are just one of several obstacles the project group identified in the way of those that are willing and even highly motivated to behave in a manner that meets the principles of sustainability and justice. And as empirical studies showed convincingly that there is no lack of realization of ecological problems or motivation to solve them, the project group decided to focus on these obstacles and the competences that will enable the adolescents to master them.

So, among others, the project group analysed effective strategies to cope with huge masses of not necessarily coherent information. Moreover, in most relevant cases information will be accessible only incompletely and deciders have to cope with probabilities and profound uncertainties. Another essential shaping-competence (Gestaltungskompetenzen) the group worked out is the capacity to take the consequences of one's own behaviour into account, even if, in relation to the overall amount, it may be insignificant (e.g. the reduction of one's individual CO<sub>2</sub>-emission compared to the total emergence), or the capacity of effective and cooperative participation in collective decision-making. Other obstacles the decider has to master are the problems involved in long-term planning and in dealing with risks. These parts of the argument that became the basis for most of the recommendations developed later on, had been worked out by several members of the project group in very close cooperation and discussed in a workshop together with.

**Professor Dr. Ortwin Renn**

Professor and Chair of the Department for Sociology of Technology and Environment at the Universität Stuttgart

**Professor Dr. Lucas Meyer**

Professor for Moral Philosophy at Universität Bern

**Dr. Stephan Lingner**

Deputy Director of the Europäische Akademie GmbH, Bad Neuenahr-Ahrweiler

The adequate recognition of these obstacles required a significant enlargement of the hitherto established conceptions of competency based education. The systematic derivation of the necessary enhancements of this conception and a critical view on its opportunities and limits consequentially were the topics of the last period of the project that ended with the presentation of its final report in September 2008.

*Results*

The analysis on what should be the aims and what could be the appropriate means of an education for sustainable and just development led to some normative consequences.

These are assorted in three groups:

*Orientation to the principles of justice and sustainability*

- (1) The normative concept of justice, as well in its synchronic as in its diachronic dimension, should be the determinative frame of what the UN calls education for sustainable development. Theories of justice should take a prominent part in the implementation of sustainability in schooling.
- (2) As the strategies the pupils use in order to justify their own claims are necessarily universal, they should be instructed in analysing these strategies and to draw the ethical consequences.
- (3) Especially with respect to the non-renewable resources criteria and limits of substitutability should be an integrated part of the discussion.
- (4) The valuation of resources by economic means is an important means of an efficient resource management. Schooling should communicate the opportunities and limits of these means.

*Mastering obstacles*

- (5) Education for sustainable and just development should enable to cope with decisional dilemmas effectively and constructively.
- (6) It should enable to cope with highly complex as well as incomplete informa-

tion. Stochastic methods, decision strategies and thumb-rule-like heuristics are important “tools” to maintain the capability of acting.

- (7) Collective decisional dilemmas tend to detain the individual from acting even if it is decided in what goals it wants to realise. Shaping of and participating in institutional frameworks can be effective measures to prevent these dilemmas. Thus, schooling should give opportunities to recognise and to react appropriately to collective decisional dilemmas.
- (8) Humans tend to underestimate the long-term effects of their action and at the same time to overestimate the effects in the immediate future. Education for sustainable and just development should enable to estimate them rationally.
- (9) Humans tend to irrational reactions to risks. Education for sustainable and just development should enable to an attentive but justification-based reaction.

(C) Alignment to an education based on the concept of shaping competencies

- (10) Education for sustainable and just development should not overmaster and ideologise pupils but offer interestbased approaches to e.g. the intergenerational justice (Überwältigungsverbot).
- (11) In general, education for sustainable and just development should not be designed with respect to the question, which topics are to be treated, but with respect to the question, which competences pupils need to master the obstacles. Education should be output-, not input-oriented.
- (12) The temporal resources for schooling are scarce and should be focussed on what is most necessary. Education for sustainable and just development therefore should react to local and national requirements.
- (13) Competencies alone are not sufficient for effective planning, deciding an acting – they have to meet favourable felicity-conditions too: The actor must, to a certain degree, be able, to manage ambiguities, to reflect on its own emotional guidance and to recognise himself as someone who purposefully can cause some effects. Education for sustainable and just development should support these psychic dispositions.
- (14) Since the complexity of sustainable and just planning raises scientific, sociological, ethical as well as economical questions, education for sustainable and just development should provide modes of learning that are trans-disciplinary and discipline-integrating. It therefore should be planned in a trans-disciplinary framework as well.

### Final report

G. de Haan, G. Kamp, A. Lerch, L. Martignon, G. Müller-Christ, H. G. Nutzinger, Nachhaltigkeit und Gerechtigkeit. Grundlagen und schulpraktische Konsequenzen (volume 33 of the series “Ethics of Science and Technology Assessment”) Springer, Berlin 2008, ISBN 978-3-540-85491-3

In addition to the final report there are two separate and independent studies that emerged in the context of the project and that were published in the Europäische Akademie’s Graue Reihe:

J. A. Bollinger, Profilierung und Qualitätsentwicklung von Schulen durch Bildung für eine nachhaltige und gerechte Entwicklung. Volume 45 of the “Graue Reihe”, Europäische Akademie Bad Neuenahr-Ahrweiler 11/2008

### Project Members

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#### Funding

Federal Ministry of Education and Research (BMBF): Research for climate protection and protection from climate impacts – a contribution to the BMBF-framework programme “Research for Sustainability”

## 1.9 Societal Implications of Electrical Power Grids

(Duration: 1/06–6/08)

(completed)

### Background and Tasks

The continuous supply of heat and electric current is a central mission of energy supply systems of modern societies. In the electricity sector stable power systems for the provisioning and the distribution of electric power are the prerequisite to achieve this task. Nevertheless, the reliability of supply in Europe has recently shown several infirmities: the heavy blackouts in London, in South Sweden/Denmark and Italy in 2003, in North Rhine-Westphalia and Luxembourg respectively in September 2004 and not least the outages in vast parts of Western Europe at the end of 2006 document this ostensibly. They were apparently caused by defects in crucial areas of the supply mains – likewise the breakdowns in the northern parts of the United States. In 2005 even worse power outages occurred in North Rhine-Westphalia, which were however only partly caused by technical aspects, but by extraordinary weather conditions. Other reasons for a failure of the provisioning are also supposable, for example natural catastrophes, overloading of the capacities or terrorist attacks.

The consequences of blackouts of this dimension are always marked by high economic detriments and disturbances and impairments of private and public life, which is severely hindered and endangered in the affected regions. One may well imagine that these incidences can recur – maybe in larger scale – if not for distinct changes of the status quo.

It is necessary to counter steer in time with appropriate measures to avoid an unbearable endangering of a continuous electricity supply in the future. This appears especially important as the functioning of the information society and the industry likewise become more and more dependent on electricity.

The observable and conceivable threats to the security of the power supply can be attributed to modified constraints for the European network. During the work of the research project the following aspects were identified as the most determining with respect to future conditions: (1) The present degradation of the capacitances of power stations leads to a decline of reserve capacities, possibly below a critical quantity, that could be essential during a disturbance. (2) The increasing feed of energy with fluctuating power rating (wind energy or other regenerative energies) requires higher compensation capacities. The balancing potential of an efficient

measurement and control technology should be analysed in this context. (3) The power supply systems suffer from a major lack of investments. This can mainly be traced back to the cost pressure developed from the deregulation of the European network and the distributed responsibilities of the operation and the upgrading of the power system. (4) A further extension of the European network can moreover lead to additional dynamic stability problems, which are only to be handled with sumptuous technical measures. Again, the difficulties of shared competencies may have negative implications. Germany is especially swayed with this problem as it is a main country for third party access due to its central site in Europe.

From the technical point of view it has been analysed whether existing or foreseeable disposable technologies can embrace future demands for electric networks. If necessary, accordant research targets have to be advised. Thereby the deliberation on the question of the correct timing of a potentially needful reconstruction surpasses a merely technical approach. The comparative judgement of the costs of power failures and of upgrading scenarios to avoid them in the future and the configuration of cost distribution depend on economic science expertise to attain to economically ideal resolutions. It has been presented in detail that politics have to arrange for a regulation which advances the vicinity of power stations and consumers, allocate transmission costs and ensure an efficient extension of power lines with longlasting resources. Economic competence is also essential for the assessment of methodical problems of European market structures and their accomplishment in the energy sector. The perspective of business economics aims in particular at companies, which have to cope with profound reorganisations and their commercial feasibility. Aspects of regulation presuppose juridical expert knowledge. The judicial appraisal of deregulation and re-regulation has been carried out in consideration of the cross-national situation to assure that the recommendations are in line with the European legal framework.

The entitlement of the project work consists of an integration of the competencies of electrical engineering, economics and jurisprudence appropriately to give coherent guidelines for the affected fields of policy and the power industry. The interdisciplinary processing of the work presents an essential aspect and at the same time closes a gap in the scientific evaluation of power networks. The European perspective of the project corresponds to the development trend towards a further incorporation of the European power networks. The aspirated recommendations for integration combine the aspects of high efficiency and security of supply regarding the general

set-up of an elevated contingent of renewable energies. The future power network ought to be able to fulfil its supply assignment even under complex preconditions and provide both economically justifiable and dependable supply of electricity.

### Results

The results of the project work were presented to political institutions, decision-making units and the interested public on 26<sup>th</sup> June 2008 in Berlin.

In Europe as well as in other developed countries, the dynamic transformation of the electricity industry from an integrated public utility monopoly to a competitive generation and sales of electricity with a regulation of the grids is anything but completed. The experience so far has probably raised more questions and dilemmas than originally expected. The different approaches and conditions in the EU might, on the one hand, slow down the process towards a common market for electricity but, on the other hand, they allow enriching learning and comparison of experiences, results and toolboxes. Learning does not mean copying but it needs a systematic approach, a platform for dialogue, where research and regulatory and industry experience come together and, as a result, improve the regulatory frameworks or management practices, e.g. regarding the modelling of auctions.

The recommendations can be summarised as follows:

- A learning platform is to be created in the EU to share the experiences of different and new approaches (e.g. auctions) to improve the regulatory framework and industry practice.
- Given the high cost of blackouts, it must be ensured that the regulatory framework encourages investments in the “upper range” of reasonable demand projections to maintain the high quality of electricity supply.
- Fines for low service quality should be included in the incentive-based regulation, as proposed by the BNA.
- Interruptible contracts should be considered as an effective tool to keep investments for short peak seasons low and diminish the risk of widespread cut-offs even further.
- The principle of electricity generation close to the consumer is still valid, both in economic and in ecological terms. The direct or indirect subsidisation of non-grid-optimal choices for power plant sites and long-distance electricity transport can endanger the goal of an overall cost-effective electricity supply. The additional grid cost might cancel out the efficiency gains of competitive generation. The electricity generators should therefore share in the high costs they induce.

- Auctions are probably economically the most effective way of allocating scarce electricity grid capacity. Their broader use under specific conditions should therefore be further developed and integrated into the regulatory framework in the years to come.
- No decisive advantages of ownership unbundling can be seen for the time being and therefore it is preferable to let the new incentive-based regulation work.

#### Final report

U. Steger, U. Büdenbender, E. Feess, D. Nelles, Die Regulierung elektrischer Netze. Offene Fragen und Lösungsansätze (volume 32 of the series “Ethics of Science and Technology Assessment”) Springer, Berlin 2008, ISBN 978-3-540-68417-6

In addition, the English summary of the study was published in the Europäische Akademie’s “Graue Reihe”:

U. Steger, U. Büdenbender, E. Feess, D. Nelles, The Regulation of Electricity Networks – Open Questions and Methods of Solution. Executive Summary. Volume 44 of the “Graue Reihe” Europäische Akademie Bad Neuenahr-Ahrweiler, 7/2008

#### Project Members

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**Project Coordination: Dr. rer. nat. Ruth Klüser, Dipl.-Chem.**

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#### Funding

Foundation for Innovation in Rhineland-Palatinate

## 2 Master Programme

### 2.1 Post Graduate Master Study Programme in Medical Ethics

The Master's degree has been accredited 2006. The course can be completed on an extra occupational basis and single modules from the course are accepted as further training courses required for medical professionals. Its programme takes the fact into consideration that during the past few decades the importance of medical ethics has considerably increased as regards clinical practice, medical research and health policy. Due to medical progress as well as societal and economic changes the capability for ethical reflections has turned out to be a required secondary competence for those working in medical sectors in their professional workaday routine. The concept of the study programme is a four-terms training, and the subjects of the study programme (eight modules with six to eight courses each) are sent by mail and are acquired in distant learning. Parallel to the professional career the form of distant learning it enables students to acquire and furnish proof of their medical ethical competence by an academic degree (M.A. in Medical Ethics).

The study programme includes the following subjects:

#### First year

- I Basics of ethics and philosophical anthropology
- II Basics of medical ethics/anthropology
- III Ethics of institutions
- IV Acting of physicians within the health care system

#### Second year

- I Medical ethics and law
- II Clinical ethics and consultation
- III Transplantations
- IV Genetic diagnostics and reproduction

Since October 2008 the “Advanced Master's Degree Course in Medical Ethics”, so far offered at the FernUniversität in Hagen, continues at the Institute of History, Theory, and Ethics in Medicine at the Johannes Gutenberg-Universität Mainz in

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cooperation with the Europäische Akademie GmbH. The latter contributes to the course in medical ethics by providing teaching material originating in various interdisciplinary studies resulting from the work of its project groups.

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## 3 Studies

### 3.1 The Restoration and Enhancement of Human Capacities by Neural Implants

(Duration: 4/06–9/09)

#### Background and Aims of the Study

The nervous system is one of the most important physiological systems of the human body and nearly every organ is under neural influence. Disturbances of the nervous system can therefore have far-reaching consequences. In the 1960s it was still almost inconceivable to intervene in this complex system with the aim of restoring failing functions. Since then, enormous scientific and technological progress has led to the development of electronic devices which can be surgically implanted in sensory organs or even in the brain. For instance, as of today, approximately 100,000 people worldwide have received cochlear implants. These can help deaf people (re)gain comprehension of spoken language by directly stimulating auditory nerves inside the cochlea with electrical impulses. Ongoing research in neuroprosthetics is aiming at the development of retinal implants. Apart from sensory implants, the possibilities of motor prosthetics are currently being investigated.

Based on this success story it is now being discussed whether such techniques can also be used not only for restoring impaired capabilities but also for enhancing the capacities of healthy humans. The background study currently being undertaken is based on a state of the art report on the spectrum of neuroprosthetic devices and applications and examine the ethical, legal and social implications of these developments – inter alia addressing questions on the moral evaluation of enhancement techniques; the assessment of the potential for abuse, safety and liability issues; and problems of distributive justice such as access to and fair allocation of these novel techniques.

The study forms one of the working packages of the integrated research project on nanotechnology applications in medicine “Nanotechnology and Health. Technological options, risk evaluation and precautionary strategies (NanoHealth)” under the auspices of the Helmholtz Association (Helmholtz-Gemeinschaft Deutscher Forschungszentren/HGF). Within this project, neural implants have been singled out as one of the risk discourses relevant to the question of how the public

perceives the benefits and risks related to the so-called converging technologies (CT) and their expected impacts. At present, public opinion on neuroprosthetic progress varies between critical or even alarmist concerns about the future of humanity on the one hand and science fictional visions or transhumanist expectations on the other hand. The background study will therefore put special emphasis on an in-depth analysis of the ethical, societal und legal questions arising from presently available and foreseeable future neural implants.

#### Working Progress

In April 2006 the cooperation partners held their initial meeting of the Nano-Health project. Since, the partners of the working packages related to neural implants have worked towards a state of the art-report on current neuroprosthetic devices which was published in 2008 at the Forschungszentrum Karlsruhe (FZK: Wissenschaftliche Berichte, FZKA 7387). The background study is scheduled for the beginning of 2009.

#### Cooperation Partners

Forschungszentrum Karlsruhe (FZK) and its subdivisions Institute for Technology Assessment and Systems Analysis (ITAS), Institute of Toxicology and Genetics (ITG), and Institute for Applied Computer Science (IAI), as well as EMPA Technology and Society Lab Sankt Gallen.

**Responsible: Katja Stoppenbrink, LL.M., M.A.**

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### 3.2 Spatial Planning and the Virtualisation of Life-Worlds

Duration: 7/06–6/07

(completed)

#### Background and Task

The study idea is based upon the fact that modern information and communication technology (ICT) became an inevitable factor of human life. Now, an upcoming challenge arises for the public from the emergence of ICT into communal life and the development of urban and rural regions. For example, the growing markets for e-shopping or e-working will change respective demands for mobility and housing, significantly. This will have to be considered in the course of rational spatial planning together with other probably interfering mega-trends, like the consequences of demographic change in Europe. This interference might influence the above mentioned demands for spatial planning, substantially. Moreover, spatial planning, IT and social politics will have to deal with the growing virtualisation of daily life. The ambiguity of citizens' expectations towards privacy and societal participation seems to be central, here. The critical reflecting of this ambiguity might offer normative knowledge, which could enable decision makers and planners not to push possibly undesirable developments.

#### Working Progress

Since July 2006 a one-year study was prepared by the academy in cooperation with the Technische Universität Kaiserslautern (Professor Dr. Gerhard Steinebach, Chair of Urban Planning). This study is part of the university's umbrella project on "Spatial Impacts of Virtualisation and its Technological and Societal Preconditions". The project is supported by the programme "Wissen schafft Zukunft" of the Federal State Rheinland-Pfalz.

On 16<sup>th</sup> October, the project partners held an expert workshop on the "Societal Framework for the Virtualisation of Urban Life".

**Responsible: Dr. rer. nat. Stephan Lingner, Dipl.-Geol.**

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Publications

S. Lingner, S. Allin, G. Steinebach (eds) Gesellschaftliche Randbedingungen der Virtualisierung urbaner Lebenswelten. Volume 42 of the “Graue Reihe” Bad Neuenahr-Ahrweiler, 5/2007

## 4 Study Groups

### 4.1 Practical Philosophy

The Europäische Akademie is concerned with the scientific study of consequences of mid- and long-term processes that are especially influenced by natural- and engineering sciences and the medical disciplines. Its aim is to assist in preparing political decisions with contributions from the scientific point of view. The project groups set up for this purpose argumentatively identify and recommend those options that would be chosen rational acting individuals and collectives. Argumentations like this depend on some normative premises: e.g. the supposed standards of rationality, the adequacy criteria for the reconstructive shaping of decisions scenarios and, last but not least, general principles for action that would be chosen (according to one or another set of standards) by rational actors. Such standards, criteria and principles have always been a subject to philosophy, especially in such disciplines as the theory of argumentation (logic), the philosophy of science and ethics. The study group “Practical Philosophy” will critically discuss these traditions as well as relevant contemporary philosophical debates and incorporate its results into the work of the Europäische Akademie.

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## 4.2 Ethical Evaluation – SKRIBT (Joint Research Project “Protection of Crucial Bridges and Tunnels of Road Traffic”) (Duration: 11/08–02/11)

### Background and Task

Road bridges and tunnels connect people, enable broad mobility and allow exchange of goods and services. Nevertheless, construction and operation of these infrastructures are highly critical with respect to security questions. These questions may arise from risks from natural disasters and human factors, which might be mitigated by planning, installation and operation of appropriate monitoring and safety systems. However, these measures could irritate road users and service personnel because they will enable e.g., identification and control of vehicles and their drivers and thus a broad collection, analysis and storage of sensible, personal movement data. Respective concern about excessive “data mining” and on endangered individual privacy gives reason to the above mentioned evaluation in an early stage of development. The study aims at the development of acceptable and ethically sound safety measures (including also non-technical means), which address central normative questions of data protection.

### Working Progress

The study group contributes to the joint research project “Protection of crucial bridges and tunnels of road traffic (SKRIBT)” by an ethical evaluation of the ongoing research. The joint project is funded by the Federal Ministry of Education and Research (BMBF).

On 14 November 2008 the study group held an initial meeting with the “Bundesanstalt für Straßenwesen (BASt)”, which is prime contractor of the umbrella project.

### Study Group

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**Professor Dr. phil. Dr. phil.h.c. Carl Friedrich Gethmann**

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### **III SCIENTIFIC COMMUNICATION AND COOPERATION**

## 1 Academy Conferences

### 1.1 Spring Conference 2007: Digital Publishing in the Faculties of Arts and Humanities

30.–31.3.2007, SETA-Hotel, Bad Neuenahr-Ahrweiler

From the point of view of the faculties of arts and the humanities, what are the opportunities and risks stemming from the fact that texts are increasingly available in digital form? This was the topic of this conference, “Digital Publishing in the Faculties of Arts and Humanities”. The event was also part of the Federal Ministry of Education and Research’s “Year of the Humanities 2007”.

For the text-centred humanities, typically focussing on interpreting, analysing, and comparing literature and written documents, new options arise from the availability of digitalised texts. Simultaneously, the new media also offer alternative ways for the humanities themselves to publish and communicate. Online discussion forums and e-journals seem to be increasingly replacing traditional journals. Texts which are available free of cost on the web sites of university research institutions may prove to be a genuine alternative to expensive journals and books.

In an often lively discussion, academics from the faculties of arts, humanities and book studies, publishers, head librarians, and software developers examined the changes which the humanistic publication culture is undergoing, what its future will be, and what it ought to be. Digital publishing does not yet, however, define everyday life at universities. On the contrary: Professor Dr. Gudrun Gersmann (History Dept. at Cologne University), herself the editor of e-journals, stated that only small circles of people are intensively making use of such offers. Many academics are rather sceptical about such innovations. In many appointment procedures, a higher rating seems to be given to publications in traditional journals as compared to e-publications, although experts say that, without a doubt, many e-journals provide the same quality as printed publications. Dr. Gudrun Gersmann called for university lecturers to familiarise themselves and their students as quickly as possible with the responsible way of dealing with these new forms of publication.

At the same time, the operators of such digital media as well as the renowned science publisher, Professor Dr. Wulf-D. von Lucius, made it clear that the optimistic expectation that research budgets would be to a considerable extent relieved by digitalising journals was exaggerated: “The internet is nothing less than an eco-

conomic marvel” (v. Lucius). Precisely those quality assurance measures that need to be taken by the organisers and publishers of a major publication are at the root of a large part of the costs, no matter whether a journal is distributed conventionally or made available via a university server. Covering those costs is something that the academic world will have to guarantee in any case. And whilst a bound volume of journals is permanently available after having been put on the shelf, the digitalised data record requires continuous data management and adjustments to meet the latest standards of hardware and software development. As Professor Dr. Wilhelm Ott (emeritus) from Tübingen University emphasised, this can involve enormous costs. An active, foresightful shaping of the transition may help to make full use of the opportunities that come with these changes.

Dr. Norbert Lossau, director of the State and University Library at Göttingen, an in this respect very advanced institution, presented future prospects explaining what has been and may in the future be achieved in terms of the performance support which modern and possibly future virtual research environments can contribute to the humanities. Dr. Günter Mey and Dr. Katja Mruck from the Free University in Berlin demonstrated the potentials of net-based academic work using the example of their own internet portal, “qualitative-research.net”. Two participants from Hamburg University, librarian Dr. Stefan Gradmann and literary scholar Professor Dr. Jan C. Meister, stressed the potential added value of digital texts as opposed to the printed alternative, if intelligent software – “heuristic machines” – can support academic analysts in dealing with texts.

There was a controversial discussion as to the role of journal publishers in the changing publication environment: Will their services as organisers of academic communication still be required or will academic institutions take over that task themselves? How can they continue to contribute their expertise of over three centuries of being an integral part of the scholarly communication system?

There was consensus, however, on one aspect: Books will continue to be found on the shelves of libraries and the desks of scholars, thanks to their unbeatable qualities. However, Professor Dr. Stephan Füssel, book scientist and Gutenberg Fellow at Mainz University, emphasised that paper may be doomed to be replaced in some cases: At the end of his lecture he pointed out how seminal the development of electronic paper is, which, although not wholly unlike a sheet of paper, can wirelessly receive, save, and display in high definition the data of academic contributions and even newspapers.

Publication

Journal “Poiesis & Praxis” Vol. 5 No. 2, April 2008 (Focus “Digital Publishing”)

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## 1.2 Autumn Conference 2007: New Applications of Genetic Engineering in Livestock

21.–22.9.2007, Berlin-Brandenburgische Akademie der Wissenschaften, Berlin  
Which opportunities arise from genetically engineering farm animals, what progress is made in this technology, and which concerns should be dealt with? Together with the Berlin-Brandenburgische Akademie der Wissenschaften (BBAW), the Europäische Akademie had invited an interdisciplinary audience and panel of speakers to discuss these questions at the BBAW in Berlin on 21<sup>st</sup> and 22<sup>nd</sup> September.

Professor Angelika Schnieke (Technische Universität München) who was also a member of the project group “Pharming” (duration: 7/06–12/08) told the audience about the long and difficult path to the first approval of a biopharmaceutical produced in transgenic livestock. In the late 1990ies, the expectation had been for this process to take only four to five years. However, intellectual property problems and other difficulties hampered the progress. Now, 20 years later, the breakthrough has been achieved with a human blood clotting factor produced in transgenic goats. This may just be the start: Professor Gary Walsh (University of Limerick, Ireland) spoke about the growing market for biopharmaceuticals, and how transgenic animals may play a role in delivering to it.

Will transgenic animals also have a breakthrough in food production? Professor Heiner Niemann (FAL Mariensee) thought so and expressed his view that in 20 years, genetic engineering will probably be one method among others for breeding desired traits in farm animals. He introduced the audience to the many potentials of transgenic farm animals: besides medical applications as bioreactors, medical models and organ donors, transgenic farm animals are also envisaged to provide healthier food products, healthier production animals, and a better environment. Some genetically engineered lines are already waiting for market approval: transgenic salmon that grow quickly, cows that are resistant to udder inflammation, and pigs that have reduced phosphate content in their faeces.

Professor Louis-Marie Houdebine (INRA, Jouy-en-Josas, France) explained to the audience the biotechnological challenges and possible solutions at the forefront of research. Refinement of these methods is important not only for effective production of transgenic “founder animals” (this is how the first transgenic generation is called) but also for elimination of side-effects on animal welfare. However, as the

audience learned from Professor Adroaldo Zanella (Norges Veterinærhøgskole, Norway), little is at present known about the potential effects of genetic engineering on animal welfare. He explained that how animals can cope with challenges depends partly on the expression of specific proteins in their brains, and genetic changes could influence these mechanisms. Dr. Kees van Reenen (ID Lelystad, The Netherlands) explained a biotechnology-integrated approach to investigating effects of transgenesis on animal welfare by testing the appropriate generations of a transgenic line bred from the founder animals.

Professor Matthias Kaiser (The National Committee for Research Ethics in Science and Technology in Norway) suggested that in order to justify taking risks with a technology, it is not sufficient to identify a benefit. He called for an integrated ethical assessment where risks and benefits are seen in their societal perspective (e.g. who benefits?, who takes on responsibility?). Kaiser argued for a transparent democratic ethical debate where scientists take the initiative to also explain the scientific insecurities regarding the consequences of the technology. He stressed that given the plurality of values and complex risks, the precautionary principle needs to be observed and each product should be evaluated case-by-case. In the near future, he thought that only “pharming” would hold the promise of sufficient benefits to counter objections to the use of transgenic farm animals.

#### Proceedings

M. Engelhard, K. Hagen, M. Boysen (eds) *Genetic Engineering in Livestock. New Applications and Interdisciplinary Perspectives* (volume 35 of the series “Ethics of Science and Technology Assessment”) Springer, Berlin 2009, ISBN 978-3-540-85842-3

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### 1.3 Spring Conference 2008: Clinical Research in Vulnerable Populations

3.–4.4.2008, Berlin-Brandenburgische Akademie der Wissenschaften, Berlin  
Research in vulnerable populations, especially in minors and in the mentally ill, is becoming an increasing and urgent problem. For example, a large part of pharmaceuticals which is given to minors and adolescents is not licensed for them; whereas in other cases effective pharmaceuticals have often not been developed yet (e.g. dementia).

On this issue the Europäische Akademie and the Berlin-Brandenburgische Akademie der Wissenschaften organised the conference “Clinical Research in Vulnerable Populations” in Berlin on 3<sup>rd</sup> and 4<sup>th</sup> April.

Experts covering the fields of paediatrics, psychiatry, pharmacology, ethics, law, and industry discussed questions and possible solutions. Although recently, politicians have taken steps to remedy this deplorable state – e.g. by introducing the regulation (EC) No 1901/2006 on medicinal products for paediatric use, the realisation of this regulation, however, is causing a number of ethical, legal and economical problems: Overall, speakers showed concern about the great amount of data still needed to analyse the effectiveness of drugs for such people. They debated to what extent and on which ethical and legal foundation risky research in vulnerable populations is acceptable at all. In addition, some added, realisation of clinical studies in smaller groups of patients (infants, minors, adolescents) was complex, time-consuming, and therefore very costly. Thus, they discussed the question whether the established ways of drug development are appropriate at all for fulfilling societal needs.

Altogether, the participants agreed on the need of improving clinical research for vulnerable populations. The Europäische Akademie and the Berlin-Brandenburgische Akademie der Wissenschaften are now planning to establish an interdisciplinary project group on this topic.

Scientific coordinators:

- Professor Dr. med. Jörg Fegert (director of the Klinik für Kinder- und Jugendpsychiatrie/Psychotherapie, Universität Ulm);
- Professor Dr. med. Dr. h.c. Günter Stock (president of the Berlin-Brandenburgische Akademie der Wissenschaften, Berlin);
- Dr. med. Felix Thiele (deputy director, Europäische Akademie GmbH, Bad Neuenahr-Ahrweiler).

**Speakers:**

- Professor Dr. med. Hanfried Helmchen (former director of the Psychiatrische Klinik und Poliklinik, Freie Universität Berlin);
- Professor Dr. med. Hannsjörg W. Seyberth (former director of the department Kinderheilkunde I, Philipps-Universität Marburg);
- Benedetto Vitiello, M.D. (director of the child and adolescent treatment and preventive interventions research branch, US National Institute of Mental Health, Bethesda);
- Professor Dr. jur. Gerfried Fischer, LL.M. (Lehrstuhl für Bürgerliches Recht, Internationales Privatrecht, Rechtsvergleichung und Arztrecht, Universität Halle);
- Dr. med. Birka Lehmann (professor and director Licencing 3, Bundesinstitut für Arzneimittel und Medizinprodukte, Bonn);
- Dr. med. André Hertkorn (Boehringer-Ingelheim, managing director of medicine, Biberach a. d. Riss);
- Philippe Auby, M.D. (director of the international clinical research department of paediatric neuro-psychiatry, Lundbeck, Paris);
- Jacinta Tan, M.D., Ph.D. (senior clinical research fellow, Ethox Centre, Universität Oxford).

**Proceedings**

F. Thiele, J. M. Fegert, G. Stock (eds) Clinical research in minors and the mentally ill. Volume 46 of the “Graue Reihe”, Europäische Akademie Bad Neuenahr-Ahrweiler, 11/2008

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See also the current project “Clinical Research in Vulnerable Populations” on p. 15ff.

#### **1.4 Autumn Conference 2008: Global Remote Sensing Systems and Security. How Can Innovative Security Services Contribute?**

9.–10.10.2008, European Space Policy Institute, Wien

Today, satellite-based navigation systems are a permanent feature of everyday life. There are new satellite systems in the planning stage that will open up even more possibilities for earth observation, allowing for a more precise space-based sensing and detection of terrestrial structures. On the one hand, this is working to provide new potentials for a comprehensive early detection of natural or man-made risks and space-based crisis response; on the other hand, questions arise as to the quality and validity of such earth observation data and the protection of sensitive locations and institutions as well as privacy protection. Liability issues in the case of non-achievement and failure of such remote sensing security services also need to be addressed yet.

Against this backdrop, the Europäische Akademie GmbH in co-operation with the German Aerospace Center e.V. (Cologne) and the European Space Policy Institute (Vienna) hosted a conference on “Global Remote Sensing Systems and Security. Emergence of New Security Services?” on 9–10<sup>th</sup> October 2008 in Vienna. European experts discussed technological, societal, and legal issues arising with a view to the expectations users of satellite-based security services may have. Dr. rer. nat. Josef Aschbacher (European Space Agency, Frascati) began by presenting an overview of the wide variety of security-relevant potentials of the European initiative “Global Monitoring for Environment and Security” (GMES), ranging from the detection of natural and environmental dangers all the way to border surveillance and the verification of land use requiring authorisation. The swift provision of processed remote sensing data for crisis management while avoiding the circulation of data collected for military purposes pose a particular challenge (Dr. rer. nat. Monika Gähler, German Aerospace Center, Oberpfaffenhofen). In this context, Professor Dr. iur. Lesley Jane Smith (Riga Graduate School of Law) gave two particular reasons for the necessity of precise and accurately timed regulations: On the one hand, public remote sensing services tend to get increasingly withdrawn for the sake of commercial providers and, on the other hand, discrimination-free access to remote sensing data – for third countries also – has already been agreed upon on the international political stage. At the same time, Priv.-Doz. Dr. phil. Andreas Metzner-Szigeth called for the avoidance of

such developments, which are based on security rigorism, in the light of the privacy protection rights. In this context, he demanded a critical reflection of the public and private need for security.

It became evident during the panel discussion that users expect great potentials from the provision of marine services in the near future. However, such earth observation services should be incorporated into integrated security concepts, contain preventive, non-technological elements, and be fashioned in a way acceptable to both users and society at large.

Science conference coordinators:

- Dr. rer. nat. Stephan Lingner (Europäische Akademie Bad Neuenahr-Ahrweiler GmbH)
- Dr.-Ing. Wolfgang Rathgeber (European Space Policy Institute, Vienna)

Speakers and panelists:

- Dr. rer. nat. Josef Aschbacher (European Space Agency, Frascati)
- Dr. rer. nat. Monika Gähler (Deutsches Zentrum für Luft- und Raumfahrt, Oberpfaffenhofen)
- Univ.-Doz. Dkfm. Dr. Lothar Beckel (GEOSPACE International GmbH, Salzburg)
- Dipl.-Geogr. Holger Floeting (Deutsches Institut für Urbanistik, Berlin)
- Priv.-Doz. Dr. phil. Andreas Metzner-Szigeth (Universität Münster)
- Professor Dr. iur. Lesley Jane Smith (Riga Graduate School of Law)
- Professor Dr. phil. Heinz Gärtner (Österreichisches Institut für Internationale Politik, Wien)
- Staatsrat Dr. rer. pol. Heiner Heseler (Senatskanzlei Bremen)
- Dipl.-Phys. Peter Knopf (ehem. Eidgenöss. Departement für auswärtige Angelegenheiten, Bern)
- Dipl.-Kfm. Rüdiger Koppe (EADS Astrium GmbH, Taufkirchen)
- Dipl.-Ing. Jürgen K. von der Lippe (vdl consult, Hannover)

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## 2 Expert Meetings

The Europäische Akademie organises – partly in co-operation with other institutes – expert meetings which serve to explore further research topics or to deepen the discussion on overlapping interdisciplinary topic fields. These meetings, held by small circles of experts, complement the conferences run by the academy, covering three main areas, namely ethics of medicine, environment, and engineering technology and address scientists, political authorities as well as the public, potentially affected by the consequences of science and technology.

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## 2.1 International Summer School “The Impact of Current Developments in the Neurosciences on the Concept of Psychiatric Disease”

From 2<sup>nd</sup> to 8<sup>th</sup> October 2007 a group of international junior researchers met in Bonn to discuss the impact of current developments in the neurosciences on the concept of psychiatric disease, neurosciences have experienced a spectacular boom during the past decades: new and improved methods in molecular- and cell-biology as well as imaging techniques have deepened our understanding of the nervous system and contributed to the understanding of neurological and psychiatric diseases. In addition, a range of novel interventional methods – e.g. from the fields of neuro-surgery, neuro-prosthetics and psychopharmacology – has been developed with partly impressive results. Despite of this considerable advance the relationship between neuroscientific research and the clinical disciplines neurology and psychiatry proves to be strained at times. Especially amongst psychiatrists it remains a hotly debated issue to what extent the neurosciences improve clinical practice or, to the contrary, amount to an undue “scientification” of psychiatry. A broad range of issues related to this thematic framework was discussed by the participants covering the fields of medicine, the neurosciences, psychology, philosophy, law, the social sciences, and theology. The discussions were augmented by several lectures by senior scientists and two field trips to the department of psychiatry and the Life & Brain Institute (both Universität Bonn). The Summer School – jointly organised with the department of psychiatry (Universität Bonn) – was funded by the German ministry of education and research (BMBF).

For further information see: [www.neuroscience-psychiatry.de](http://www.neuroscience-psychiatry.de).

Publication

Journal “Poiesis & Praxis” Vol. 6 (2009)

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## 2.2 Research Methodologies in Psychiatry – Philosophical Considerations

On 19<sup>th</sup> June 2008 the colloquium “Research Methodologies in Psychiatry – Philosophical Considerations” took place at the Universitätsclub Bonn. Participants were Jean-Claude Dupont, D.E.A. (Collège de France), Professor Dr. Anne Fagot-Largeault (Collège de France), Professor Dr. Alain Leplège (Université Paris 7 (Denis Diderot)), Professor Dr. phil. Michael Quante (Universität zu Köln), Katja Stoppenbrink, LL.M., M.A. (Europäische Akademie), and Dr. med. Felix Thiele (Europäische Akademie).

Quante spoke on “Psychic Disorders and Biographical Identity” and explored the “limits of personhood” along the following lines: (i) The notion of person cannot be used in contexts where the normal standard conditions for its use are not present. (ii) In case studies the limits of personhood could be explored in non-standard cases. (iii) Our ethical and legal intuitions on the one hand and our descriptive intuitions on the other hand should be sorted out properly in order to avoid the traps described above. Afterwards Leplège presented a talk on “Clashes of perspectives in outcome evaluation in psychiatry”. He focused on the question whether and how it is possible to make outcome evaluation in psychiatry, notably in psychotherapies following a psychoanalytical approach.

Finally, Thiele spoke on “Action Theory & Psychiatric Research”. He argued that the clarification of basic concepts relevant for psychiatry, e.g. ‘action’ and ‘autonomy’, needs to be done prior to setting up a research programme and is not a matter of interpreting the results of psychiatric research.

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### 2.3 Ethical Questions of Public Health Policy

On 6<sup>th</sup> and 7<sup>th</sup> November 2008 an expert meeting was held at the Europäische Akademie GmbH on “Ethical Questions of Public Health Policy” involving participants from the fields of medicine, jurisprudence, sociology, and philosophy. Discussions focussed on ethical, socio-political, and juridical questions of public health policy. Professor S. Geyer (Medizinische Hochschule Hannover) and Dr. A. Mielck (GSF-Neuherberg) stressed the empirical basis of several factors causing inequality in the health sector from a sociological point of view, emphasizing the need for rational ethics to solve normative questions in this context. A first contribution to this task was given by Professor M. Quante (Universität Köln) talking about the problem of moral and psychic obstacles in public health policy. Medical aspects of healthcare politics were stressed by Professor N.W. Paul (Universität Mainz) who reflected the possibility of prediction and prevention of health risks in the era of molecular medicine. Finally, Professor St. Huster (Universität Bochum) explained the socio-judicial framework of healthcare politics.

The participating experts concluded that there is further need to continue discussions on a range of unresolved questions and decided to meet again in spring 2009 (19<sup>th</sup>–20<sup>th</sup> March).

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### 3 Publications

#### 3.1 Book Series “Ethics of Science and Technology Assessment” (Wissenschaftsethik und Technikfolgenbeurteilung), issued by Carl Friedrich Gethmann

**Volume 29:** R. Merkel, G. Boer, J. Fegert, T. Galert, D. Hartmann, B. Nuttin, S. Rosahl, *Intervening in the Brain. Changing Psyche and Society*. Berlin 2007

**Volume 31:** G. Hanekamp (ed) *Business Ethics of Innovation*. Berlin 2007

**Volume 32:** U. Steger, U. Büdenbender, E. Feess, D. Nelles, *Die Regulierung elektrischer Netze. Offene Fragen und Lösungsansätze*. Berlin 2008

**Volume 33:** G. de Haan, G. Kamp, A. Lerch, L. Martignon, G. Müller-Christ, H. G. Nutzinger, *Nachhaltigkeit und Gerechtigkeit. Grundlagen und schulpraktische Konsequenzen*. Berlin 2008

**Volume 34:** M. Engelhard, K. Hagen, M. Boysen (eds) *Genetic Engineering in Livestock. New Applications and Interdisciplinary Perspectives*. Berlin 2009

**Volume 35:** E. Rehbinder, M. Engelhard, K. Hagen, R. B. Jorgensen, R. Pardo Avellaneda, A. Schnieke, F. Thiele, *Pharming. Promises and risks of biopharmaceuticals derived from genetically modified plants and animals*. Berlin 2009

**Volume 36:** B. Droste-Franke, H. Berg, A. Kötter, J. Krüger, K. Mause, J.-C. Pielow, I. Romey, T. Ziesemer, *Brennstoffzellen und Virtuelle Kraftwerke. Energie-, umwelt- und technologiepolitische Aspekte einer effizienten Hausenergieversorgung*. Berlin 2009

### 3.2 “Graue Reihe”

The “Graue Reihe” is produced and published by the Europäische Akademie GmbH and is a platform for shorter texts and anthologies by members of project groups, staff members or external scientists.

It includes text material on current topics in Technology Assessment and Ethics of Science scientists at the Europäische Akademie GmbH and from outside continuously work on. Unlike the book series “Ethics of Science and Technology Assessment” (Springer Verlag) the Graue Reihe publishes texts on ideas and reflections which sometimes are smaller products of the long-term research projects of the academy.

**No 40:** C. F. Gethmann, N. Rohner, K.-U. Schrogl (eds) Die Zukunft der Raumfahrt. Ihr Nutzen und ihr Wert. 1/2007

**No 41:** M. Decker (ed) Angewandte interdisziplinäre Forschung in der Technikfolgenabschätzung. 1/2007

**No 42:** S. Lingner, S. Allin, G. Steinebach (eds) Gesellschaftliche Randbedingungen der Virtualisierung urbaner Lebenswelten. 5/2007

**No 43:** M. Engelhard, K. Hagen, F. Thiele (eds) Pharming. A New Branch of Biotechnology. 11/2007

**No 44:** U. Steger, U. Büdenbender, E. Feess, D. Nelles, The Regulation of Electricity Networks – Open Questions and Methods of Solution. Executive Summary. 7/2008

**No 45:** J. A. Bollinger, Profilierung und Qualitätsentwicklung von Schulen durch Bildung für eine nachhaltige und gerechte Entwicklung. 9/2008

**No 46:** F. Thiele, J. M. Fegert, G. Stock (eds) Clinical research in minors and the mentally ill. 11/2008

**No 47:** B. Droste-Franke, H. Berg, A. Kötter, J. Krüger, K. Mause, J.-C. Pielow, I. Romey, T. Ziesemer, Fuel Cells and Virtual Power Plants. Energy, Environmental, and Technology Policy Aspects of an Efficient Domestic Energy Supply. Executive Summary. 11/2008

### 3.3 Newsletter

The Newsletter (“Akademie-Brief”) appears regularly eight to ten times per year and informs about current activities of the Europäische Akademie.

**No 68:** “Moral Responsibility, Criminal Law and the Neurosciences”, Felix Thiele

**No 69:** “Bounded Rationality. A short synthesis of a programme with possible consequences for the discussions on sustainability in schools”, Laura Martignon

**No 70:** “Climate for action in the greenhouse”, Stephan Lingner

**No 71:** “Regulatory Management of Electricity Grid Companies – A European Comparison of Germany, France and the United Kingdom”, Christoph Adamczyk

**No 72:** “Kampf der Kulturen?“, Carl Friedrich Gethmann

**No 73:** “Perspectives on Psychopharmacological Enhancement”, Stephan Schleim et al.

**No 74:** “Why are the Humanities relevant to Europe?“, Jürgen Mittelstraß

**No 75:** “Towards a properly greened GDP”, Bert Droste-Franke

**No 76:** “Rethinking computer science”, Kei Ishii, Bernd Lutterbeck

**No 77:** “Is there an imminent renaissance of nuclear energy?“, Klaus Heinloth

**No 78:** “Pros and cons of nuclear energy: Private versus social costs”, Thomas Ziesemer

**No 79:** “Research on Minors”, Felix Thiele

**No 80:** “The value of authenticity in the age of pharmaceutical neuroenhancement”, Jan Christoph Bublitz

**No 81:** “Is ownership unbundling of energy utilities in Germany necessary?“, Ruth Klüser

**No 82:** “Legitimising Prohibitive Claims in Bioethics”, Minou B. Friele

**No 83:** “Circumspective Planning and Sustainability”, Georg Kamp

**No 84:** “Transgenic animals in the fields?“, Kristin Hagen

**No 85:** “Operationalising Efficiency and Sustainability for the Evaluation of Energy Technologies”, Bert Droste-Franke

### 3.4 Journal “Poiesis & Praxis. International Journal of Ethics of Science and Technology Assessment”

The Europäische Akademie, together with Springer Verlag Berlin, are the editors of an international and interdisciplinary English-language journal on the ethics of science and technology assessment. The Journal was first published in December 2001 and is called “Poiesis & Praxis. International Journal of Ethics of Science and Technology Assessment”. The Europäische Akademie’s director as editor-in-chief of the journal, holds full responsibility for it, and is supported by an advisory committee consisting of international and interdisciplinary experts relevant to the respective theme of each issue. Dr. rer. nat. Stephan Lingner has been the journal’s managing editor since volume four. Each volume consists of four issues of about 80 pages in total. Besides the “Original Papers” and book reviews, the journal offers a section called “Forum” consisting of shorter contributions as well as review articles on various publications. Additionally, some issues have a “Focus” section with contributions on a current key subject.

#### Overview of Articles

For an overview of articles go to:

<http://www.springerlink.com/content/109376/>

Selected topics from recent issues:

- **Information: a universal metaphor in natural and cultural sciences? (Focus)** (Vol. 5, No. 3/4) 2008;
- **Digital publishing (Focus)** (Vol. 5, No. 2) 2008;
- **Polymorphism-screening: genetic testing for predisposition – guidance for technology assessment** (Vol. 5, No. 1) 2008;

#### Imprint

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- Jens G. Reich, Max-Delbrück-Center für Molekulare Medizin Berlin, Germany  
(Life Sciences and Bioethics)
- Warren T. Reich, Georgetown University, Washington D.C., USA  
(Bioethics and the History of Ideas)
- Josef Reiter, Johannes Gutenberg-Universität Mainz, Germany (Ethics)
- Erich Schweighofer, Universität Wien, Austria  
(Information Technology and International Law)
- Kristin Shrader-Frechette, University of Notre Dame (Indiana), USA  
(Environmental Ethics, Probabilistic Risk Assessment and Science Policy)
- Hans-Ludwig Schreiber, Universität Göttingen, Germany  
(BioLaw and Medical Law)
- Ruud Smits, Centre for Science and Innovationmanagement Utrecht,  
The Netherlands (Science Policy and Innovation Management)
- Gunther Tichy, Austrian Academy of Sciences Wien, Austria  
(Economics and Technology Assessment)
- Benedetto Vitiello, National Institute of Mental Health, Bethesda, M.D., USA  
(Psychopharmacology and Treatment Research)

Further Information and Online Ordering at [www.SpringerOnline.com](http://www.SpringerOnline.com).

### 3.5 External Publications

Bert Droste-Franke

“Innovationsbarrieren und Umsetzungsstrategien für Brennstoffzellen und virtuelle Kraftwerke” *energielwasser-praxis* 12(2007), DVGW Jahresrevue 70

“Stationary Fuel Cells in Virtual Power Plants as Support for Fluctuating Regenerative Energy Supply” (Poster) Third International Renewable Energy Storage Conference (IRES 2008), Berlin

Thorsten Galert

*Together with Stephan Schleim*

“Eingriff ins Gehirn oder Angriff auf die psychische Integrität?”, *Nervenheilkunde* 7/2007:618–622

“Auch das Gehirn lässt sich dopen – Plädoyer für eine Debatte über Enhancement-Präparate”, *Deutsche Zeitschrift für klinische Forschung* 7–8/2007:16–18

“What it means to ascribe pain to animals”, in Klaus Müller, Norbert Sachser (eds.): *Theology meets Biology. Anthropological Perspectives on Animals and Human Beings*, Regensburg: Friedrich Pustet, 2008: 130–136

“Wie mag Neuro-Enhancement Personen verändern?”, in B. Schöne-Seifert, D. Talbot, U. Opolka, J. S. Ach (Hrsg.): *Neuro-Enhancement. Ethik vor neuen Herausforderungen*, Paderborn: Mentis, 2008: 159–187

Carl Friedrich Gethmann

*Vom Bewusstsein zum Handeln. Das phänomenologische Projekt und die Wende zur Sprache*, Fink, 2007

“Die Krise des Wissenschaftsethos”, in: *BioSpektrum* 13 (2007), 96–97

Greeting on the occasion of the granting of an honorary doctor degree to Professor Dr. Marek Siemek, in: W. Hoguebe (ed.), Marek J. Siemek, *Jenseits der Zwänge. Schillers Suche nach dem schönen Spielraum der Freiheit*, 2007, 11–15

“Praktische Vernunft und technische Kultur”, in: B. Rolf, K. Draken, G. Münnix (Hgg.), *Orientierung durch Philosophieren*, Berlin 2007 (Philosophie und Bildung, Bd. 6; Nachdruck von 1.4–105)

“Verantwortungsvoller Umgang mit Wissen” (Interview), *Energiewirtschaftliche Tagesfragen* 57, 5/2007:54–56

“Modell für ein neues Gesundheitssystem”: RBB Kulturradio 14.6.2007

Berlin-Brandenburgische Akademie der Wissenschaften (Hg.), *Kausalität. Streitgespräch in den Wissenschaftlichen Sitzungen der Versammlung der Berlin-Brandenburgischen Akademie der Wissenschaften am 9. Dezember 2005 und am 5. Mai 2006*, Berlin 2007, 106ff, 125f

*Together with G. Abel and A. Esser*

Interview “Die Chancen nutzen, die sich gegenwärtig bieten”, in: *Information Philosophie*, 8/2007, 28–34

*Together with Stephan Lingner*

“Rationale Technikfolgenbeurteilung bemannter Raumfahrt. Die deutsche Diskussion”. In: H. Trischler/K.-U. Schrogl (Hgg.) *Ein Jahrhundert im Flug. Luft- und Raumfahrtforschung in Deutschland*. Frankfurt/New York 2007, 479–488

“Ethische Aspekte zukünftiger globaler Stromerzeugung”, in: *Kraftwerke 2007* (19.–21.9.2007), Salzburg 2007, P3, 1–3

“Wissenschaftliche Politikberatung in Deutschland – Was erwarten die Adressaten?”, in: *Gegenworte* 18 (2007), 25–27

“Rationale Risikobeurteilung”, Berlin-Brandenburgische Akademie der Wissenschaften (ed.), *Risiko. Streitgespräch in den Wissenschaftlichen Sitzungen der*

Versammlung der Berlin-Brandenburgischen Akademie der Wissenschaften am 15. Dezember 2006 und am 22. Juni 2007, Debatte 6, Berlin 2007, 47–51

“Egzystencjnlne pojecie nauki. Odnosnie do §69 b Bycia i czasu”, in: N. Lesniewskiego (ed.), *Heidegger w Kontekstach*, Posen 2007, pp 65–98

Editor: Oskar Becker, *Grundprobleme existenzialen Denkens*, Frommann-Holzboog: Stuttgart-Bad Cannstatt 2008

Introduction to: Oskar Becker, *Grundprobleme existenzialen Denkens*, Frommann-Holzboog: Stuttgart-Bad Cannstatt 2008, pp XV–XXXIV

“Welche Hauptschule sollte der Vorschule folgen? Zur Architektonik der konstruktiven Vernunft in der Erlanger Schule”, in Jürgen Mittelstraß (ed.), *Der Konstruktivismus in der Philosophie im Ausgang von Wilhelm Kamlah und Paul Lorenzen*, Paderborn 2008, pp 43–62

“La concepción de la acción en Ser y tiempo de Heidegger”, in: Gustavo Leyva (ed.), *La Filosofía de la Acción. Un análisis histórico-sistemático de la acción y la racionalidad práctica en los clásicos de la filosofía*, Madrid 2008, pp 533–560  
“Energie und Ethik. Ethische Aspekte zukünftiger globaler Stromerzeugung”, in: *VGB Power Tech 1/2* (2008), pp 32–35

“Energie und Ethik. Ethische Aspekte zukünftiger globaler Stromerzeugung”, in: *VGB Power Tech 1/2* (2008), pp 32–35

Editor: *Ethische Aspekte des züchterischen Umgangs mit Pflanzen*, Berlin: Berlin-Brandenburgische Akademie der Wissenschaften 2008 (Materialien der Interdisziplinären Arbeitsgruppe “Zukunftsorientierte Nutzung ländlicher Räume”, No 16), together with S. Hiekel

“Kann Politik vernünftig sein?”, in: Helmut Schmidt, Peter Janich, Carl Friedrich Gethmann (eds.), *Die Verantwortung des Politikers*, Fink: München 2008, pp 27–43

“Das Ethos des Heilens und die Effizienz des Gesundheitssystems”, in: Annemarie Gethmann-Siefert, Felix Thiele (eds.), *Ökonomie und Medizinethik*, Fink: München 2008, pp 33–48

“Gerechtigkeit, Verantwortung, Vertrautheit” and “Ethische Aspekte von Innovationen”, in: R. F. Hüttel, O. Bens, T. Plieninger (Hgg.) *Zur Zukunft ländlicher Räume. Entwicklungen und Innovationen in peripheren Regionen Nordostdeutschlands*, Akademie-Verlag, Berlin 2008, pp 216–222 and 225–235 (with S. Hiekel)

“Gedankenexperiment”, 33–36; “Gefühl”, 37–39; “Geschichtlichkeit”, 106f.; “Gestalt”, 125; “Gestalttheorie”, 125–128; “Goodmansche Paradoxie” (with P. Schröder-Heister) 127f.; “Heidegger”, 319–325; “Hempel”, 345–347; “Hempelsche Paradoxie”, 347–349; “Hintikka”, 403–405; “Horizont”, 442f.; “Ich”, 497–502; “Immunisierung”, 551; “Imperativlogik”, 557–561; “In-der-Welt-sein”, 573f.; “Indifferenz” 579f.; “Individualismus”, 583–585, in: Jürgen Mittelstrass (Hg.) *Enzyklopädie Philosophie und Wissenschaftstheorie*, Bd. 3, J. B. Metzler, Stuttgart 2008

#### *Together with Felix Thiele*

“Ethische Probleme der Molekularen Medizin. Grundlagen und Anwendungen unter Berücksichtigung der rechtlichen Rahmenbedingungen”, in: Detlev Ganten, Klaus Ruckpaul (eds.) *Grundlagen der Molekularen Medizin*, Springer, Heidelberg 2008<sup>3</sup>, pp 510–532 (revised and extended version of “Grundlagen der ethischen Bewertung der Gentechnik”, 2004)

Kristin Hagen

“Animal welfare aspects of creating transgenic farm animals”, in: W. Zollitsch, C. Winkler, S. Waiblinger, A. Haslberber (Hrsg.), *Sustainable food production and ethics*, Wageningen 2007

“Animal Welfare aspects of gene technology in animal production”, in: L. Boxle, N. O’Connell, A. Hanlon (eds) *Applied Ethology – addressing future challenges in animal agriculture*. Proc. of the 42<sup>nd</sup> Int. Congress of the ISAE, 2008, p. 245

Georg Kamp

Art. ‘Gebrauchstheorie der Bedeutung’; Art. ‘Gehirn im Tank’; Art. ‘Genius Malignus’; Art.; ‘Handlungslogik’; Art. ‘Handlungstypen/Handlungstoken’; Art. ‘Humesches Gesetz’; Art. ‘Implikatur’; Art. ‘indem-Relation’; Art. ‘Interventionismus’; Art. ‘Jørgen Jørgensen’; Art. ‘Jørgensens Dilemma’ in: Jürgen Mittelstraß (Hrsg.) Enzyklopädie Philosophie und Wissenschaftstheorie. Second, updated and extended version. Stuttgart, Weimar 2005ff.

“‘Wenn man sich im gemeinsamen Handeln wirklich eine Sprache aufbaut...’ Logische Propädeutik als Mittel zur lebensweltlichen Störungsbewältigung”, in: Jürgen Mittelstraß (ed.): Der Konstruktivismus in der Philosophie im Ausgang von Wilhelm Kamlah und Paul Lorenzen, Paderborn 2008, pp 63–91

Stephan Lingner

*Together with Gerd Hanekamp and Ruth Klüser*

“Elektrische Energieversorgungsnetze in interdisziplinärer Perspektive”, Energie-wirtschaftliche Tagesfragen, 56 (2006) 12

“Macht Lärmschutz uns arm? Rechtliche und ökonomische Aspekte des Verkehrslärmschutzes”, in: Hamann Consult AG (eds.) Tagungsband 16. Konferenz “Verkehrslärm” 2007, Dresden 2007

*Together with Carl Friedrich Gethmann*

“Rationale Technikfolgenbeurteilung bemannter Raumfahrt. Die deutsche Diskussion.” In: H. Trischler/K.-U. Schrogl (Hgg.) Ein Jahrhundert im Flug. Luft- und Raumfahrtforschung in Deutschland. Frankfurt/New York 2007

*Together with Jerzy Runge and Jan Maciej Waga*

“Spatial Planning” (polish: “gospodarka przestrzenna”). Workshop report in: Fraunhofer Anwendungszentrum Logistiksystemplanung und Informationssysteme (Hg.) Visionen der Informationsgesellschaft 2016 (DVD), 2007

*Together with Katharina Mader and Friederike Wütscher*

“10 Jahre Europäische Akademie”, in: Technikfolgenabschätzung. Theorie und Praxis, 16(1), 2007, 64–67

“Human spaceflight as a matter of culture and national vision”, in: L. Codignola, K-U. Schrogl (eds.) *Humans in Outer Space – Interdisciplinary Odysseys*, 2008, Springer, Berlin

Karsten Mause

Konsumentenschutz im Hochschulbereich. Unvollständige Nachfragerinformation, Marktversagen & markt-basierte Schutzmechanismen, Berlin: Duncker & Humblot, 2007

“Zur Ökonomik des Konsumentenschutzes im Hochschulsektor”, in: *Jahrbuch für Wirtschaftswissenschaften*, vol. 58(3), 2007, 265–278

“Rethinking Governmental Licensing of Higher Education Institutions”, in: *European Journal of Law and Economics*, vol. 25, 1/2008, 57–78

“The Tragedy of the Commune: Learning from Worst-Case Scenarios”, in: *Journal of Socio-Economics*, vol. 37, 1/2008, 308–327

Katja Stoppenbrink

“Tiefe Hirnstimulation. Eine Herausforderung für die Medizintechnikfolgenbeurteilung” NTA3/TA'08: “Technology Governance – der Beitrag der Technikfolgenabschätzung”(Poster) 28.5.–30.5.2008, Austrian Academy of Sciences, Vienna

Felix Thiele

*Together with Jörg A. Auer, Allen Goodship, Steven Arnoczky, Simon Pearce, Jill Price, Lutz Claes, Brigitte von Rechenberg, Margarethe Hofmann-Antenbrink, Erich Schneider, Ralf Müller-Terpitz, Klaus-Peter Rippe and David W. Grainger*  
“Refining animal models in fracture research: seeking consensus for changing the agenda in optimising both animal welfare and scientific validity for appropriate biomedical use”, *BMC Musculoskeletal Disorders*, 2007(8)72 (1 August 2007)

“Zur moralischen Bewertung der Patentierung von Genen”, slightly abridged, in: K. P. Liessmann, G. Zenaty, K. Lacina (Hgg.) (2007) Vom Denken. Einführung in die Philosophie. Austrian Schoolbook, Braumüller, Wien, 283

Ökonomie und Medizinethik, Annemarie Gethmann-Siefert, Felix Thiele (eds.), Fink: München 2008

## 4 Lectures

Bert Droste-Franke

**11.5.2007**

“Assessing technology induced environmental pollution with respect to Sustainability and Efficiency”

Europe-India T2B Conference 2007, IIT-EU Alumni Association, Paris

Margret Engelhard

**6.3.2008**

“Organmangel. Ist der Tod auf der Warteliste unvermeidbar?”

Working group Medical Ethics, Europäische Akademie zur Erforschung von Folgen wissenschaftlich-technischer Entwicklungen GmbH, Bad Neuenahr-Ahrweiler

Thorsten Galert

**3.5.2007**

“Neuroenhancement and Personal Identity”

8<sup>th</sup> Meeting of the “Nachwuchsgruppe Philosophie des Geistes”, 2.–4.5.2007, Villa Giersch, Frankfurt/Main

**5.6.2007**

“Neuroethik und personale Identität”

Conference 2007 of the Netzwerk der deutschsprachigen Technikfolgenabschätzungs-Community (NTA), Wien

**19.6.2007**

“Die Bedeutung des Persönlichkeitsbegriffs für die Ethik des Neuroenhancement“  
Seminar “Neuroethik: Philosophie, Recht und Hirnforschung” (Stephan Schlem, M.A., Dr. jur. Dr. rer. pol. Tade M. Spranger, Dr. med. Susanne Erk and Prof. Dr. med. Dr. phil. Henrik Walter), Klinik und Poliklinik für Psychiatrie und Psychotherapie der Rheinischen Friedrich-Wilhelms-Universität Bonn

**23.11.2007**

“Zur Ethik des Neuroenhancements”

Main symposium “Gesellschaftspolitische Aspekte von Neuroenhancement”,  
GDPPN Congress 2007 (Deutsche Gesellschaft für Psychiatrie, Psychotherapie  
und Nervenheilkunde), 21.11.–24.11.2007, Berlin

**8.2.2008**

“Die Ethik des Neuroenhancements”

Radio broadcast “Das philosophische Radio”, WDR 5, 9.05 pm–10 pm

**17.4.2008**

“Neuroenhancement”

Radio interview, uniRadio 97.2 Berlin-Brandenburg, “Campus live!”, 7.30–7.40 pm

**26.4.2008**

“Mit Pillen dem Geist auf die Sprünge helfen? Zur Ethik des ‘Neuro-Enhancements’”

Conference “Verkabelter Geist. Die neuen Techniken der Hirnforschung und  
ihre ethische Bewertung”, Evangelische Akademie Sachsen-Anhalt e.V., 25.4.–  
27.4.2008, Lutherstadt Wittenberg

**4.6.2008**

Paper Neil Levy: “Cognitive Enhancement and Intuitive Dualism”

Comments by Thorsten Galert

Workshop “Botox for the Brain”,

Fundatie van Renswoude, Utrecht, The Netherlands

**2.9.2008**

“Ethical issues of psychopharmaceutical enhancement”

invited by the European College of Neuropsychopharmacology on occasion of its  
21<sup>st</sup> Congress (30.8.–3.9.2008) in Barcelona

**16.9.2008**

“Die Bedeutung des Authentizitätsbegriffs für die Ethik des Neuroenhancements”

XXI. Deutscher Kongress für Philosophie, Essen

3.10.2008

“Pharmaceutical Neuroenhancement and the Ideal of Authenticity”,  
im Rahmen des Workshops “On the Ethical and Philosophical Relevance of Neuro-  
science” (3.–5. Oktober) im Universitätsclub in Bonn

10.10.2008

“Die narrative Theorie personaler Identität”  
Workshop of the Graduiertenkolleg Bioethik, Eberhard-Karls-Universität Tübingen,  
Freudenstadt

Carl Friedrich Gethmann

27.2.2007

“Kann Politik vernünftig sein?”  
Lecture on the occasion of the granting of an honorary doctor degree to the former  
chancellor Helmut Schmidt at the Faculty of Social Sciences and Philosophy,  
Philipps-Universität Marburg

27.4.2007

“Was definiert Europa?”  
XXXVI. Congresso Nazionale della Società Filosofica Italiana, Verona

9.5.2007

“Untersuchungen zum alltäglichen Sollen”  
Series of Lectures Argumente und Argumentationen in der Gegenwartsphilosophie,  
Universität Hamburg

12.5.2007

“Der Geist der Geisteswissenschaften”  
Conference of the spokesmen of the Cusanuswerk, Bonn

30.5.2007

“Ethische Probleme autonomer Entscheidungen am Lebensende”  
Lectures in medical ethics Autonomie und Fürsorge am Lebensende, Universitäts-  
klinikum Mannheim

5.6.2007

“Können wir uns ein Leben ohne Schmerz, Leiden und Tod sinnvoll wünschen?”  
Series of Lectures Arzt und Patient, Nixdorf Museumsforum, Paderborn

13.6.2007

“Der ‘Geist’ der Geisteswissenschaften”  
Talk on the occasion of Tag der Forschung, Universität Trier

14.6.2007

Laudatory speech on the occasion of awarding the position of a scientist in residence to Professor Dr. Julian Nida-Rümelin by the Universität Duisburg-Essen

25.6.2007

“Ethische Probleme der Lebendorganspende”  
Alfried Krupp Wissenschaftskolleg Greifswald

10.7.2007

Laudatory speech on the occasion of awarding the honorary doctor degree (Dr. phil. h.c.) to Professor Dr. Dr. h.c. mult. Dr.-Ing. e.h. Jürgen Mittelstraß by the faculty of humanities, Universität Duisburg-Essen

17.7.2007

“Das abendländische Vernunftprojekt und seine Grenzen”  
Conference “Glaube und Vernunft im Kontext der universitas litterarum”,  
Katholisch-Theologische Fakultät, Universität Regensburg

7.9.2007

“Der Mensch handelt mittels seines Gehirns. Sprachpragmatische Überlegungen zu einigen Amphibolien in der gegenwärtigen Diskussion”  
Colloquium “Mensch, Gehirn & Technik”, Albert-Ludwigs Universität Freiburg (public evening lecture)

20.9.2007

“Ethische Aspekte zukünftiger globaler Stromerzeugung”  
VGB-Kongress Kraftwerke 2007 (plenary lecture)

29.9.2007

“Wittgensteins angeblicher Sprachspielrelativismus und das Problem trans-kontextueller Geltungsansprüche”: “Wittgenstein: Philosophie und Wissenschaften”  
Forum für Philosophie der Deutschen Gesellschaft für Philosophie, Leipzig

24.10.2007

“Was heißt ‘Wettbewerb’ in den Wissenschaften?”  
Interdisziplinäres Zentrum für Wissenschafts- und Technikforschung,  
Bergische Universität Wuppertal

7.11.2007

“Ethos des Heilens versus Effizienz des Gesundheitssystems”  
Medizinische Gesellschaft Mainz e.V.

22.11.2007

“Entlastung vs. Selbstbestimmung. Ethische und anthropologische Aspekte der Ambient Intelligence”  
Day of Technology, Fraunhofer Institut für Experimentelles Software Engineering,  
Kaiserlautern

11.2.2008

“Ethos des Heilens versus Effizienz des Gesundheitssystems”  
17<sup>th</sup> annual conference: Medizinischer Dienst der Krankenversicherung in Hessen,  
Offenbach am Main

16.2.2008

“Phänomenologische Ethik”  
Scientific Colloquium “Von Becker zu Lorenzen”, FernUniversität Hagen

18.3.2008

“Die ‘praktische’ Aufgabe der Wissenschaftsphilosophie”  
Conference “Was ist Wissenschaft?”, Bonn

**18.4.2008**

“Globaler Wandel. Ethische und wissenschaftstheoretische Aspekte”

Workshop of the interdisciplinary working group “Globaler Wandel – Regionale Entwicklung”, Berlin-Brandenburgische Akademie der Wissenschaften, Berlin

**6.5.2008**

“Klimaforschung und Klimapolitik. Über den verantwortlichen Umgang der Politik mit wissenschaftlichem Wissen”

Annual general meeting of the “Verband der Metall- und Elektroindustrie Rheinland-Rheinessen e.V.”, Bad Neuenahr-Ahrweiler

**12.6.2008**

“Die Einheit der Vernunft vs. die Vielheit der Kulturen”

Geschwister Scholl-Institut, Universität München

**26.6.2008**

“Klimaforschung und Klimapolitik. Über den verantwortlichen Umgang der Politik mit wissenschaftlichem Wissen”

CDU/CSU-Fraktion im Deutschen Bundestag, Berlin

**12.11.2008**

“Ethische Probleme autonomer Entscheidungen am Lebensende”

Hochschulgruppe der Studienstiftung des Deutschen Volkes, Universität Duisburg-Essen (Essen)

**21.11.2008**

“Ethische Probleme der humangenetischen Diagnostik”

Alfried Krupp Wissenschaftskolleg Greifswald

**24.11.2008**

“Paradigmen phänomenologischer Ethik: Husserl – Heidegger – Becker”

Workshop “Phänomenologische Handlungstheorie” (Husserl-Archiv, Universität zu Köln)

Kristin Hagen

**15.9.2007**

“Animal welfare aspects of creating transgenic farm animals”

7<sup>th</sup> Congress of the European Society for Agricultural and Food Ethics, Wien

**10.4.2008**

“Transgene Tiere – Anwendungen und ethische Aspekte”

Guest Lecture, Veterinärmedizinische Universität Wien, “Tierschutzethik und Mensch-Tier Beziehung”

**16.5.2008**

“Towards assessing the welfare of transgenic animals”

Joint East and West Central Europe Regional Meeting of the International Society for Applied Ethology, 15.5.–17.5.2008, Bratislava

**6.8.2008**

“Animal welfare aspects of gene technology in animal production“

42<sup>nd</sup> Int. Congress of the International Society for Applied Ethology, Dublin

Ruth Klüser

**30.9.2008**

“Die Regulierung elektrischer Netze”

Expert Meeting “Klimaerwärmung entschärfen mit Erneuerbaren Energien aus Wüsten und Steppen”, Karlsruhe

Stephan Lingner

**1.3.2007**

“A new approach in justifying space activities – overcoming the dichotomy of ‘utilitarian’ versus ‘trans-utilitarian’”

2<sup>nd</sup> Space and Society Conference: Space Options for the 21<sup>st</sup> Century. ESA/ESTEC (Noordwijk/NL)

**22.6.2007**

“Rational Risk Assessment at the Nanolevel”

Nanotechnology Symposium, Abbott GmbH & Co. KG, Ludwigshafen

**5.10.2007**

“Macht Lärmschutz uns arm? Rechtliche und ökonomische Aspekte des Verkehrslärmschutzes”

16<sup>th</sup> International Conference “Verkehrslär” (traffic noise), Schloss Eckberg, Dresden

**12.10.2007**

“Human spaceflight as a matter of culture and national vision”

ESF/ESA/ESPI Conference Humans in Outer Space – Interdisciplinary Odysseys, Vienna

**29.5.2008**

“Rationale Technikfolgenabschätzung. Ein deliberativer Ansatz der Europäischen Akademie”

NTA3/TA’08: “Technology Governance – der Beitrag der Technikfolgenabschätzung”, 28.5.–30.5.2008, Austrian Academy of Sciences, Vienna

Georg Kamp

**22.2.2008**

“Warum streiten wir uns und wer hat Recht?”

Lecture for children, Universität Duisburg-Essen, Audimax Essen

Karsten Mause

**13.9.2007**

“To License or to Certify Higher Education Institutions? That is (Still) the Question”

24<sup>th</sup> Annual Conference of the European Association of Law and Economics at Copenhagen Business School, Denmark

15.9.2007

Comment on Stefano Clo “Assessing the European Emissions Trading Scheme’s Effectiveness: Have CO<sub>2</sub> Tradable Permits Been Over-Allocated?”

24<sup>th</sup> Annual Conference of the European Association of Law and Economics at Copenhagen Business School, Denmark

11.10.2007

“Ist Marktsignalisierung im Hochschulsektor sozial verschwenderisch?”

Conference “Hochschulen und außeruniversitäre Forschung unter Reformdruck”, Deutsche Hochschule für Verwaltungswissenschaften, Speyer

23.2.2008

“Ist Marktsignalisierung im Hochschulsektor ‘sozial verschwenderisch?’”

10<sup>th</sup> workshop of the Wissenschaftliche Kommission Hochschulmanagement im Verband der Hochschullehrer für Betriebswirtschaft, Ludwig-Maximilians-Universität München

Katja Stoppenbrink

24.7.2007

“Gehört mein Körper mir? – Rechtsdogmatische und -philosophische Überlegungen zu Geltungsgründen und Grenzen des rechtlichen Kommerzialisierungsverbots menschlicher Körper(teile)”

Summer School “Der menschliche Körper zwischen Vermarktung und Unverfügbarkeit. Ethische, rechtliche und soziale Aspekte der Kommerzialisierung des menschlichen Körpers und seiner Teile”, 20.–27.7.07, Interfakultäres Zentrum für Ethik in den Wissenschaften (IZEW), Eberhard-Karls-Universität Tübingen

30.7.2007

“Enhancement without any effort? – Justifying shortcuts to self-creation”

“2<sup>nd</sup> Annual Postgraduate Conference in Bioethics – Why Bioethics? Our research in context”, 30.–31.7.2007, King’s College in Cambridge, UK

**18.9.2007**

“Brain Computer Interfaces (BCI) –Gedankenexperimente oder Gefährdung der ‘Natur des Menschen?’”

Summer School “Die Technisierung des Gehirns. Ethische Aspekte aktueller Neurotechnologien”, 16.–23.9.07, research group of the Federal Ministry of Science and Education “Zur Relevanz der ‘Natur des Menschen’ als Orientierungsnorm für Anwendungsfragen der biomedizinischen Ethik”, Institut für Ethik und Geschichte der Medizin, Albert-Ludwigs-Universität Freiburg

**29.4.2008**

“Big brother on my desk – Can office surveillance systems be compatible with privacy protection at the workplace? A question of legal clarity and corporate responsibility”

Contribution to the workshop on ethics and security at the final conference “Towards privacy enhancing security technologies – the next steps” of the European research project PRISE (Privacy and Security. Privacy enhancing shaping of security research and technology – A participatory approach to develop acceptable and accepted principles for European Security Industries and Policies), 28.4.–29.4.2008, Austrian Academy of Sciences, Vienna

Felix Thiele

**15.11.2007**

“Klinische Prüfung mit Arzneimitteln für Kinder – eine moralische Herausforderung”

Finzelberg-Symposion 2007, 15.–16.11.2007, Lahnstein

**23.11.2007**

“Sterbehilfe”

Conference “Künstliche Ernährung und Ethik”

Deutsche Gesellschaft für Ernährungsmedizin e.V., 23.–24.11.2007, Machern

**15.1.2008**

“The interdisciplinary project groups at the Europäische Akademie Bad Neuenahr-Ahrweiler GmbH”

European Commission Directorate-General Joint Research Centre Institute for Health and Consumer Protection, Ispra, Italy

28.2.2008

“Institutionalisierung der Ethik in der Wissenschaftspolitik”

International Conference, Austrian Federal Ministry of Science and Research, Vienna

30.4.2008

“Pharming”

Lecture at the Franz-Haniel-Gymnasium, Duisburg

## 5 Teaching Activities

Carl Friedrich Gethmann

Universität Duisburg-Essen, Institut für Philosophie

### WS 2006/2007

OS     Solidarität

V       Einführung in die Angewandte Ethik

### SS 2007

OS     Inferentialismus

V       Einführung in die Angewandte Ethik II (Medizinethik)

### WS 2007/2008

OS     Bedeutung in präskriptiven Kontexten

V       Einführung in die Ethik

### WS 2008/2009

OS     Würde

V       Einführung in die Ethik

## Post Graduate Master Study Programme in Medical Ethics

26.–27.1.2007

Grundlagen der Medizinethik und medizinischen Anthropologie, Modul II,  
Bad Neuenahr-Ahrweiler

6.7.–7.7.2007

Menschliche Grenzerfahrungen und Strukturprobleme des Gesundheitssystems,  
Modul IV, Bad Neuenahr-Ahrweiler

13.7.–14.7.2007

Medizin und “Menschenbild”, Modul I/II, Bad Neuenahr-Ahrweiler

31.8.–1.9.2007

Ethische und rechtliche Probleme der Transplantationsmedizin, genetischen Diagnostik und Reproduktionsmedizin, Modul VII/VIII, Bad Neuenahr-Ahrweiler

**23.11.–24.11.2007**

Ethische und wissenschaftstheoretische Grundlagen der modernen Medizin/  
Medizin und “Menschenbild”, Modul I/II, Bad Neuenahr-Ahrweiler

**25.1.–26.1.2008**

Medizin und “Menschenbild”, Modul II, Bad Neuenahr-Ahrweiler

**25.4.–26.4.2008**

Ethische und wissenschaftstheoretische Grundlagen der modernen Medizin, Modul I,  
Bad Neuenahr-Ahrweiler

**30.5.–31.5.2008**

Menschliche Grenzerfahrungen und Strukturprobleme des Gesundheitssystems,  
Modul IV, Bad Neuenahr-Ahrweiler

**20.6.–21.6.2008**

Medizin und Menschenbild, Modul II, Bad Neuenahr-Ahrweiler

**20.6.–21.6.2008**

Ethische und rechtliche Probleme der Transplantationsmedizin, genetische Diag-  
nostik und Reproduktionsmedizin, Modul VII/VIII, Bad Neuenahr-Ahrweiler

**7.11.–8.11.2008**

Ethische und wissenschaftstheoretische Grundlagen der modernen Medizin,  
Modul I, Bad Neuenahr-Ahrweiler

Stephan Lingner

**University of Applied Sciences Koblenz/Remagen**

**WS 2006/2007**

Lecture/Seminar on “Ecology”

Georg Kamp

**Universität Duisburg Essen, Institut für Philosophie**

**WS 2007/2008**

Seminar: “Konflikt und Vertrag. Einführung in den moralphilosophischen Kontraktualismus”

**SS 2008**

Seminar: “Klassische und moderne Beiträge zur Theorie der Gerechtigkeit”

**WS 2008/2009**

Vertiefungskurs Hermeneutik

Felix Thiele

**Post Graduate Master Study Programme in Medical Ethics**

(Membership Scientific Advisory Board and Steering Committee)

Continuous teaching in the areas of philosophy and ethics of medicine, especially human genetics, health care reform, euthanasia.

**Universität Duisburg-Essen, Institut für Philosophie**

**WS 2007/2008**

S William James: Pragmatismus-Vorlesungen

**SS 2008**

S Einführung in die Tierethik

**WS 2008/2009**

S Klassiker des Liberalismus

## 6 Qualification Plan

### 6.1 Habilitation

Georg Kamp

#### **Normative Instrumentalism. A Language Philosophical Critique of Practical Reasoning**

This project undertakes an analysis of those speech acts that constitute rational practical discourses. Discourses are to be called practical insofar they are targeted on being effective for the action planning of oneself or others (postulate of practical effectiveness). They are to be called rational insofar their effectiveness should depend only on the successive and rule-conform establishing of arguments (postulate of rationality). With the Tradition of the enlightenment it will be supposed, that the participants of such discourses ascript at each other no more epistemic competences as they are disposed to ascribe to themselves (postulate of epistemic symmetry).

It will be shown, that rational practical discourses that comply with these postulates will always have the interests of it's participants as one of its issues. They therefore have the form of counselling and negotiation. This leads to a conciliatory understanding of ethics that does not aim to absolute justifications of categorical norms, but to interest-relative and therefore instrumental justifications of weakly regulating speech acts such as recommendations and suggestions.

Felix Thiele

Dr. med. Felix Thiele, M.Sc. worked out a study on autonomy and informed consent. The habilitation procedure was opened in October 2007 and is supposed to be finished in early 2009.

## 6.2 Doctoral Projects

Jan Bollinger

### **Transformational Leadership and Interim Management**

Globalisation and dynamic change are the main drivers of economy in the 21<sup>st</sup> century. To be successful in this environment, business companies must adapt to its development. On the organisational level, companies need to manage change processes and utilise their resources in an efficient and flexible way. Interim Management (i.e. the ex ante temporary assignment of an executive manager specifically for the task and with the authority to manage a period of transition, crisis or change within an organisation) has proven to be an effective tool for planning and managing fundamental change in organisations successfully. The most important obstacle to organisational change is that it is often perceived as a threat by the employees of the organisations, resulting in loss of motivation and performance and even active resistance against necessary changes. The theory of transformational leadership postulates that leaders may influence their followers' values, attitudes and behaviour and thereby increase their work motivation and performance by using a combination of inspirational leadership and external rewards. The dissertation thesis analyses the correlation of transformational leadership and organisational success in the Interim Management context.

This dissertation project is conducted at the Universität Kassel under the supervision of Professor Dr. rer. pol. habil. Hans G. Nutzinger in cooperation with Professor Dr.-Ing. Jacques J. A. M. Reijniers of the Nyenrode Business University.

Ulrike Henckel

### **Anthropological Basics of Medical Ethics**

The modern demand for basing medical ethics on an anthropological foundation to govern the actions of the physician is based on understanding the human being as an actor. This anthropology aims at an integrale definition of human beings and has to be the basis also for medicine as a natural, human science. The aims of medical actions have to be discussed and the pertinent medical techniques have to be subordinated to them. The example will be the relationship between the physician and the patient, particularly the relationship between the physician and the patient who is not able to decide for himself. This requires a concept of tutorial action.

The dissertation “Anthropological Basics of Medical Ethics in Philosophy” by Ulrike Henckel will be prepared at the Institut für Philosophie at the FernUniversität Hagen and supervised by Professor Dr. phil. Annemarie Gethmann-Siefert.

Katja Stoppenbrink

### **Unintentional Actions? Foundations of Negligence in Action Theory and Philosophy of Law**

Legally, we are not only responsible for intentional or wilful actions but, under certain conditions, also for unintentional or negligent actions. However, it is questionable as to why an unintentional action is ethically and legally relevant. The aim of this thesis is to clarify how we are to understand negligent actions. I will thus ask whether it makes any sense to speak about “negligent actions” (cf. § 15 of the federal German criminal code) in the first place. The point of departure is the discussion among legal scholars and philosophers of law on the appropriate explication of liability for negligence in tort law. Depending on whether its function is regarded as fault-based liability, compensation for damage or prevention of loss, the concept of negligence is construed in a different way. Another fundamental problem in law is whether, and in what respect the structure of negligent actions in criminal law coincides with their structure in tort law. Based upon a systematic clarification of the positions and arguments put forward in this debate, I will propose an analysis of the structure of negligent actions grounded in philosophical action theory. A central question is the delimitation of negligent actions and omissions. Furthermore, I will examine the relevance of the moral philosophical doctrine of double effect for the ethical and legal evaluation of negligence. The aim is to develop a conception of negligence which can adequately explicate liability for negligence in tort law.

This dissertation project by Katja Stoppenbrink, LL.M., M.A., is conducted at the Universität zu Köln under the supervision of Professor Dr. phil. Michael Quante (Philosophisches Seminar).

## 7 Research Fellowship Programme

The integration of European perspectives into its research is a goal that the Europäische Akademie is pursuing by several means. The academy has approached this goal mainly by inviting European and international scientists to participate in project groups and in interdisciplinary conferences. Since the beginning of the year 2000 the Europäische Akademie has added a further tool for improving the implementation of the European perspective in its work by offering a Research Fellowship Programme. This new programme allows appropriately qualified foreign scholars to carry out research projects in the field of the study of consequences of scientific and technological advance at the Europäische Akademie in Bad Neuenahr-Ahrweiler. Research fellowships for a stay between three and six months are offered on a competitive basis to Europe-based scholars. Main selection criteria are the applicant's qualifications and the relatedness of the proposed projects to the scientific work of the Europäische Akademie. Successful applicants will be awarded a honoraria/scholarship depending on experience and qualifications.

In 2007 and 2008 the Europäische Akademie invited two scientists as research fellows:

- November 2007: Professor em. Dr. phil. Emanoil Ancuta (Bucharest, Rumania)
- April 2007–March 2008: Cletus Andoh Tandoh, D.E.A., M.A. (University of Yaounde, Cameroon, Africa)

**Contact: Dr. phil. Margret Engelhard, Dipl.-Biol.**  
margret.engelhard(at)ea-aw.de

## 8 Colloquiums of the Academy

28.2.2008

Dr. phil. Thorsten Galert, M.A. (Europäische Akademie): Ethik des Neuro-Enhancement

7.2.2008

Dr. med. Felix Thiele, M.Sc. (Europäische Akademie): Ethische Bewertung des Pharming

10.1.2008

Professor Frans Brom, Ph.D. (Ethicist): (Head of the “Technology Assessment” department at the Rathenau Instituut, The Netherlands): An Ethicist in TA country

30.8.2007

Saara Reiman (M.Soc.Sci.) (University of Helsinki, Dept. of Social & Moral Philosophy): Compensation Ethics

28.6.2007

Cletus Andoh Tandoh (D.E.A., M.A.) (Europäische Akademie/University of Yaounde, Cameroon): The ethical dimension of technological progress: an African perspective

8.2.2007

Stephan Schleim, M.A. (Universität Bonn, Abteilung für Medizinische Psychologie): Die Neurophysiologie moralischer Entscheidungen – Eine neurophilosophische Analyse

11.1.2007

Professor Dr. Carl Friedrich Gethmann (Europäische Akademie): Einführung in die Ethik (4)

4.1.2007

Professor Dr. Carl Friedrich Gethmann (Europäische Akademie): Einführung in die Ethik (3)

## 9 Scientific Cooperation

The cooperation between the Europäische Akademie and other scientific institutions is implemented especially within the interdisciplinary working groups. As a result of these cooperations, several conferences have been organised together with other scientific institutions. Further cooperations are described in the following.

### 9.1 Institutional Collaboration

#### **Berlin-Brandenburgische Akademie der Wissenschaften (BBAW)**

“Zukunftsorientierte Nutzung ländlicher Räume” (2004–2007; completed), Deputy Project Coordination: Professor Dr. Dr.h.c. Carl Friedrich Gethmann

“Globaler Wandel – Regionale Entwicklung” (since 1/2008), Project Member: Professor Dr. Dr.h.c. Carl Friedrich Gethmann

“Clinical Research in Vulnerable Populations” (since 12/2008), Speaker: Professor Dr. Dr.h.c. Carl Friedrich Gethmann; Project Member: Dr. med. Felix Thiele, M.Sc.

#### **Post Graduate Master Study Programme in Medical Ethics**

Since October 2008 the “Advanced Master’s Degree Course in Medical Ethics”, so far offered at the FernUniversität in Hagen, continues at the Institute of History, Theory, and Ethics in Medicine at the Johannes Gutenberg-Universität Mainz in cooperation with the Europäische Akademie GmbH. The latter contributes to the course in medical ethics by providing teaching material originating in various interdisciplinary studies resulting from the work of its project groups (see section 2.1 for further information).

#### **Junge Akademie**

Dr. med. Felix Thiele was member of the Junge Akademie (Berlin) and its project group “Deutungsmacht der Biowissenschaften” (until 2007).

#### **Intergovernmental Panel on Climate Change (IPCC)**

Dr. rer. nat. Stephan Lingner served as expert reviewer for the 4<sup>th</sup> IPCC Assessment Report, published in 2007. He reviewed selected chapters of volumes I (Sci-

entific Basis of Climate Change), II (Impacts, Adaptation and Vulnerability) and III (Mitigation of Climate Change).

### **Hydrosol Consortium**

Dr. rer. nat. Ruth Klüser was member of the international Consortium “Hydrosol I”, which was awarded (7<sup>th</sup> March 2007) the Descartes Research Prize of the European Union for the development of a promising concept for renewable hydrogen production.

## **9.2 Memberships in Networks**

- American Association for the Advancement of Science (AAAS)
- Deutsches Netzwerk Wirtschaftsethik (dnwe)/European Business Ethics Network (EBEN)
- European Association of the Study of Science and Technology (EASST)
- European Ethics Network
- European Society for Philosophy of Medicine and Health Care (ESPMH)
- International Association of Bioethics (IAB)
- Netzwerk TA (NTA); the Europäische Akademie is also represented in NTA's Coordination Team by Dr. rer. nat. Stephan Lingner
- Deutsche Gesellschaft für Luft- und Raumfahrt (DGLR)

## 10 Regional Activities

### 10.1 Sponsors' Club

The sponsors' club (Verein der Förderer) was founded on 15<sup>th</sup> November 2001 by companies and citizens of the county Ahrweiler in order to support the Europäische Akademie in scientific and regional activities. To this end, the 36 members of the association support science in the field of ethics and technology assessment and maintain close contact with the regional economy and organisations. Other regional activities are the permanent art exhibitions which are shown within the rooms of the Europäische Akademie and the workshops of the working group "Medical Ethics" ("Arbeitskreis Medizinethik"). In summary, the tasks of the sponsors' club are concentrated on three main fields: Science, Economy, Art.

### 10.2 Working Group "Medical Ethics"

At the suggestion of medical professionals from the Ahr Valley and its neighbouring region, the Europäische Akademie's Sponsors' Club founded a working group on Medical Ethics (Arbeitskreis Medizinethik) in 1998; the academy has thus strengthened its regional activities. The working group's members are medical doctors and other health professionals from the greater Bonn and Ahr Valley area. As part of the working group, the Europäische Akademie hosts regular lectures and debates with external speakers and members of the academy. It thus offers a platform for an exchange of ideas between practising doctors and experts from science and politics. It is the goal of the working group to stimulate discussions about current issues in medical ethics and health law, to transfer current knowledge in the field, as well as to assess concepts of medical ethics in practice by including the participants' experience when developing new concepts.

27.2.2007

Suizid, Selbstbestimmung und psychische Erkrankung

Dr. Felix Thiele

**21.6.2007**

Menschenwürde und Lebensqualität

Professor Dr. Michael Quante

**30.10.2007**

Sollen Krankenkassen Kinderwunschbehandlungen zahlen?

Ethische und rechtliche Überlegungen

Dr. Oliver Rauprich

**6.3.2008**

Organmangel. Ist der Tod auf der Warteliste unvermeidbar?

Dr. Margret Engelhard

**24.9.2008**

Ethische Herausforderungen der Neurowissenschaften

Stephan Schleim, M.A.

**6.11.2008**

Prädiktion und Prävention von Gesundheitsrisiken im Zeitalter der Molekularen Medizin

Professor Dr. Norbert Paul

### **10.3 Art Exhibitions**

**2007/2008**

März 2007–September 2007

Bobo Kriechel

November 2007–Mai 2008

Beate Leisten

**2008**

Mai 2008–Winter 2008

Hanna Ludwig-Schmidhuber

#### **10.4 Lecture Events in Cooperation with the Kreissparkasse Ahrweiler**

21.2.2008

“Neuro-Enhancement: Doping für s Gehirn?” (Professor Dr. Bettina Schöne-Seifert)  
Steigenberger-Hotel Bad Neuenahr-Ahrweiler

#### **10.5 Ahrtal Talks: Expert Discussions in Cooperation with the City of Bad Neuenahr-Ahrweiler**

19<sup>th</sup> November 2008

“A Renaissance of Nuclear Power?”

(Professor Dr. Dr. Christian Streffer and Professor Dr. Thomas Ziesemer)  
Council chamber, Bad Neuenahr-Ahrweiler



## **IV APPENDIX**

## 1 Partners' Assembly

Federal State of Rhineland-Palatinate (Bundesland Rheinland-Pfalz), represented by the Ministry of Finance Rhineland-Palatinate

German Aerospace Center (Deutsches Zentrum für Luft- und Raumfahrt e.V.), represented by the Chairman of the Executive Board

## 2 Managing Committee

Staatssekretär Michael Ebling, Ministerium für Bildung, Wissenschaft, Jugend und und Kultur des Landes Rheinland-Pfalz (Chair)

Professor Dr.-Ing. Johann-Dietrich Wörner, Vorstandsvorsitzender, Deutsches Zentrum für Luft- und Raumfahrt e.V. (Deputy Chair)

Regierungsdirektor Reinhold Bott, Ministerium der Finanzen Rheinland-Pfalz

Stefan Latussek, Leiter Revision und Unternehmensbeteiligungen, Deutsches Zentrum für Luft- und Raumfahrt e.V.

## 3 Scientific Advisory Board

Professor Dr. jur. Peter Marburger, Trier (Chair)

Professor Dr. phil. Peter Fricker, Bern

Professor Dr. ir. W. J. Geysen, Leuven

Professor Dr. rer. nat. Ursula-Friederike Habenicht, Berlin

Dr.-Ing. Margarete Hofmann-Antenbrink, Pully

Professor Dr. med. Dr. h.c. Dietrich Kettler, Göttingen

Professor Dr. med. Jörg Michaelis, Mainz

Professor Dr. phil. Jürgen Mittelstraß, Konstanz

Professor Dr. rer. pol. Herbert Paschen, Berlin

Professor Dr.-Ing. Norbert Wehn, Kaiserslautern

## 4 Council

Professor Dr. Wouter Achterberg†, Amsterdam  
Professor Dr. rer. nat. Rudolf Amann, Bremen  
Dr. phil. nat. Klaus Ammann, Bern  
Professor Dr. sc. phil. Gerhard Banse, Karlsruhe  
Professor Dr. med. Claus R. Bartram, Heidelberg  
Dr. jur. Helmut Bäuml, Kiel  
Professor Dr. phil. Jan P. Beckmann, Hagen  
Professor Dr. Jos Berghman, Leuven  
Professor Dr. Deryck Beyleveld, Sheffield  
Professor Dr. Kornelis Blok, Utrecht  
Gerard Boer, Ph.D., Amsterdam  
Professor Dr. med. Dr. rer. nat. Hermann M. Bolt, Dortmund  
Professor Dr. rer. nat. Michael Bölker, Marburg  
Professor Dr. med. vet. Dr. med. vet. habil. Dr. h.c. Gottfried Brem, Wien  
Professor Dr. rer. pol. Friedrich Breyer, Konstanz  
Professor Dr. jur. Ulrich Büdenbender, Dresden  
Professor Dr. rer. pol. Dieter Cansier, Tübingen  
Professor Dr. Ruth Chadwick, Lancaster  
Professor Dr. rer. nat. Thomas Christaller, Sankt Augustin  
Professor Dr. rer. nat. Martin Claussen, Potsdam  
Professor Dr. jur. Wolfgang van den Daele, Berlin  
Professor Dr. jur. Jos Dumortier, Leuven  
Professor Dr. med. Friedrich W. Eigler, Essen  
Professor Dr. rer. pol. Holger Ernst, Koblenz  
Professor Dr. phil. Eberhard Feess, Aachen  
Professor Dr. med. Jörg Fegert, Ulm  
Professor Dr. rer. nat. Georg Fey, Erlangen  
Professor Joseph J. Fins, Ithaca/NY  
Professor Dagfinn Føllesdal, Ph.D., Oslo/Stanford  
Professor Dr. phil. Christa Fonatsch, Wien  
Professor Dr. jur. Walter Frenz, Aachen  
Professor Dr. rer. nat. Harald Fuchs, Münster  
Dr. jur. Riccardo Genghini, Mailand

Professor Dr. med. Joachim Gilsbach, Aachen  
Professor Dr. med. Barbara Griefahn, Dortmund  
Dr. rer. nat. Werner Grünwald, Stuttgart  
Professor Dr. Annette Grüters-Kieslich, Berlin  
Professor Dr. rer. nat. Armin Grunwald, Karlsruhe  
Professor Dr. med. Gundolf Gubernatis, Hannover  
Professor Dr. agr. Robert Guderian, Essen  
Professor Dr. sc. nat. Hans-Joachim Güntherodt, Basel  
Professor Dr. med. Dr. rer. nat. habil. Walter H. Günzburg, Wien  
Professor Dr. phil. Dr. rer. nat. Mathias Gutmann, Marburg  
Professor Dr. phil. Gerhard de Haan, Berlin  
Professor Dr. Ursula-Friederike Habenicht, Berlin  
Per Hall, M.D., Ph.D., Stockholm  
Professor Dr. med. Dr. med. vet. Claus Hammer, München  
Professor Dr.-Ing. Helmut Harig, Bremen  
Professor Dr. phil. Dirk Hartmann, Essen  
Professor Dr. Axel Haverich, Hannover  
Professor Dr. Hanfried Helmchen, Berlin  
Priv.-Doz. Dr. Jan-Georg Hengstler, Mainz  
Professor Dr. Klaus-Dirk Henke, Berlin  
Professor Dr. med. Dietrich Henschler, Würzburg  
Professor Dr. rer. nat. Andreas Hense, Bonn  
Dr. Spencer Henson, Guelph  
Professor Dr. rer. nat. Wolfgang Hesse, Marburg  
Professor Dr. med. Isabella Heuser, Berlin  
Professor Dr.-Ing. Gerd Hirzinger, Oberpfaffenhofen  
Professor Dr.-Ing. Heinrich Hofmann, Lausanne  
Professor Dr. Jacek Hołowka, Warschau  
Professor Dr. sc. nat. Dieter Imboden, Zürich  
Professor Dr. phil. Dr. theol. Bernhard Irrgang, Dresden  
Dr. rer. nat. Peter Jacob, Neuherberg  
Professor Dr. phil. Peter Janich, Marburg  
Rikke Bagger Jørgensen, Ph.D.Sc., Roskilde  
Professor nadzw. Dr. hab. Andrzej M. Kaniowski, Lodz  
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Professor Dr. phil. habil. Andrzej Kiepas, Katowice  
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Professor Dr. phil. Hartmut Kliemt, Duisburg  
Professor Dr. jur. Michael Kloepfer, Berlin  
Dr. Gerrit Koenen, Den Haag  
Professor Dr. jur. Dr. med. Christian Kopetzki, Wien  
Professor Dr. Wolfgang Kröger, Zürich  
Dr. rer. nat. Harald Krug, Karlsruhe  
Cynthia S. Kubu, Cleveland/OH  
Professor Dr. rer. pol. Rudi Kurz, Pforzheim  
Professor Dr. med. Dr. sc. Karl Lauterbach, Köln  
Professor Dr. Hans Lilie, Halle  
Professor Dr. Robin Lovell-Badge, London  
Professor Dr. jur. Bernd Lutterbeck, Berlin  
Professor Dr. phil. Weyma Lübbe, Leipzig  
Professor Dr. sc. techn. ETH Werner K. Lutz, Würzburg  
Dr. phil. Petr Machleidt, Prag  
Professor Dr. rer. nat. Laura Martignon, Ludwigsburg  
Priv.-Doz. Dr. Ulrich Martin, Hannover  
Professor Helen S. Mayberg, Atlanta/GA  
Professor Dr. Bernd Baron von Maydell, München  
Dr. phil. nat. Marcel Mayor, Karlsruhe  
Professor Dr. jur. Reinhard Merkel, Hamburg  
Professor Dr. Cees Midden, Eindhoven  
Professor Dr. Beran Moseley, Reading  
Professor Dr. rer. pol. Georg Müller-Christ, Bremen  
Professor Dr. med. Dr. med. dent. Dr. h.c. Wolfgang Müller-Ruchholtz, Kiel  
Professor Dr. Ruud Muffels, Tilburg  
Professor Dr.-Ing. Dieter Nelles, Kronberg  
Professor Bart Nuttin, M.D., Ph.D., Leuven  
Professor Dr. rer. pol. Hans G. Nutzinger, Kassel  
Professor Dr. phil. Konrad Ott, Greifswald  
Professor Dr. Deborah Oughton, Ph.D., Aas/Oslo  
Professor Andreu Palou, Ph.D., Mallorca  
Professor Rafael Pardo Avellaneda, Ph.D., Madrid

Professor Dr. rer. nat. Andreas Pfitzmann, Dresden  
Professor Dr. jur. Johann-Christian Pielow, Bochum  
Professor Dr. med. Gerald Pöch, Graz  
Professor Dr. Michael Quante, Essen  
Professor Pirrko-Liisa Rauhala, Ph.D., Helsinki  
Professor Dr. rer. nat. Dr. rer. nat. habil. Gerhard Rechkemmer, München  
Professor Dr. jur. Eckard Rehbinder, Frankfurt a. M.  
Professor Dr. rer. pol. Ortwin Renn, Stuttgart  
Professor Dr.-Ing. Rainer Renz, Kaiserslautern  
Professor Dr. rer. nat. Klaus-Jürgen Röhlig, Clausthal  
Professor Dr.-Ing. Ingo Romey, Essen  
Priv.-Doz. Dr. med Steffen K. Rosahl, Freiburg  
Professor Dr. phil. Georg Rudinger, Bonn  
Professor Dr. rer. nat. Heinz Saedler, Köln  
Professor Dr. med. Thomas E. Schläpfer, Bonn  
Professor Dr. med. Hans Jürgen Schlitt, Regensburg  
Professor Dr. rer. nat. Günter Schmid, Essen  
Professor Dr. rer. pol. Dieter Schmitt, Essen  
Professor Dr. Angelika Schnieke, Ph.D., München  
Professor Dr. med. Bettina Schöne-Seifert, Münster  
Professor Dr. jur. Dr. h.c. Hans Ludwig Schreiber, Göttingen  
Professor Doris Schröder, Ph.D., Lancashire  
Professor Dr. jur. Meinhard Schröder, Trier  
Professor Dr. jur. Dr. soc. oec. Erich Schweighofer, Wien  
Professor Dr.-Ing. Gerhard Schweitzer, Zürich  
Professor Dr. rer. nat. Ulrich Simon, Aachen  
Professor Davor Solter, M.D., Ph.D., Freiburg  
Detlef Sprinz, Ph.D., Potsdam  
Professor Dr. rer. pol. Ulrich Steger, Lausanne  
Professor Dr.-Ing. Gerhard Steinebach, Kaiserslautern  
Professor Dr. phil. Fritz F. Steininger, Frankfurt a. M.  
Professor Dr. Günther Stock, Berlin  
Professor Dr. rer. nat. Dr. med. h.c. Christian Streffer, Essen  
Professor Dr. med. Volker Sturm, Köln  
Professor Dr. phil. Dieter Sturma, Essen

Dr. phil. Elisabeth Swaton, Wien  
Professor Dr. jur. Jochen Taupitz, Mannheim  
Dr. rer. nat. Michael Türkay, Frankfurt a. M.  
Dr. rer. pol. Otto Ulrich, Bonn  
Dr. Gert Verschraegen, Leuven  
Benedetto Vitiello, M.D., Bethesda  
Professor Dr. phil. nat. Viola Vogel, Zürich  
Professor Dr. sc. pol. Reinhard Voßbein, Wuppertal  
Professor Dr.-Ing. Heinrich B. Weyer, Köln  
Professor Dr. jur. Dr. h.c. Rüdiger Wolfrum, Heidelberg  
Professor Dr. Atte von Wright, Kuopio  
Dr. jur. Peter Wysk, Münster  
Professor Dr. rer. pol. Thomas Ziesemer, Maastricht  
Professor Dr. Maciej Żukowski, Poznan

## 5 Staff

### Management

Professor Dr. phil. Dr. phil. h.c. Carl Friedrich Gethmann  
(Director)

Studies of philosophy at the universities of Bonn, Innsbruck and Bochum; 1968 lic.phil. at the Institutum Philosophicum Oenipontanum; 1971 was conferred the Doctor of Philosophy degree at the Ruhr-Universität Bochum; 1978 habilitation for philosophy at the Universität Konstanz. 1968 assistant professor; 1972 lecturer in philosophy at the Universität Duisburg-Essen; 1978 private lecturer at the Universität Konstanz; 1979 professor of philosophy at the Universität Duisburg-Essen; other professorships at the universities of Düsseldorf and Göttingen; was offered full professorships at the Universität Oldenburg (1990; refused), at the Akademie für Technikfolgenabschätzung in Stuttgart (1991; refused) as well as at the universities of Duisburg-Essen (1991; accepted), Konstanz (1993; refused) and Bonn (1995; refused); director of the Europäische Akademie zur Erforschung von Folgen wissenschaftlich-technischer Entwicklungen in Bad Neuenahr-Ahrweiler (since 1996); member of the Academia Europaea (London); ordinary member

of the Berlin-Brandenburgische Akademie der Wissenschaften; elected member of the “Deutsche Akademie der Naturforscher Leopoldina” (Halle) (section: Philosophy of Science).

Dr. med. Felix Thiele, M.Sc.

(Deputy Director)

Deputy Director since 1999. He brings combined expertise in medicine and philosophy to this position. He studied medicine in Hamburg and Heidelberg and received an M.D. from the University of Heidelberg for an experimental work in the field of high blood pressure research. He furthermore received a Master of Science in Philosophy and History of Science from the London School of Economics. Before joining the Academy he worked in the field of Science Management at the Max-Delbrück-Center for Molecular Medicine Berlin-Buch. At the Academy he was manager of the project “Human Genetics. Ethical Problems and Societal Consequences” and is member of the study group “Practical Philosophy”. 2002–2007 he was member of the Junge Akademie an der Berlin-Brandenburgischen Akademie der Wissenschaften und der Deutschen Akademie der Naturforscher Leopoldina. Moreover he is member of the scientific advisory board and the steering committee of the Master studycourse Medical Ethics that the Europäische Akademie is running together with the Universität Mainz and the Fernuniversität Hagen. 2006–2008 he was head of the junior scientists within the project group “Pharming. Genetically Modified Plants and Animals as Future Production Site of Pharmaceuticals?” funded by the German Federal Ministry of Education and Research.

Dr. rer. nat. Stephan Lingner, Dipl.-Geol.

(Deputy Director)

Studies in geology with focus on geochemistry at the Universität Würzburg and the Universität Tübingen; 1984 Diploma. 1990: doctorate at the Universität Münster, Chemistry Department. Professional activities: 1985–1990 planetary research at the Universität Münster. 1990–1995: systems analysis at German Aerospace Center (DLR), Cologne. Since 1996 technology assessment at Europäische Akademie Neuenahr-Ahrweiler GmbH. Coordinator of the projects “Climate prediction and climate precautions” and “Environmental noise; Risk assessment and regulations in the traffic sector” as well as of several study groups. 2000–2007: lecturer in “Ecology” at the Koblenz University of Applied Sciences. Since October

2005 deputy director of the Europäische Akademie and Managing Editor of the Springer journal “Poeisis & Praxis” as well as member of the Coordination Team of the German speaking Network Technology Assessment (NTA). Since November 2008 ethical evaluation of the BMBF-project “Protection of crucial bridges and tunnels of road traffic”.

Dipl.-Kfm. Petra Hermann  
(exited in 2008)

Studied economics at the Rheinische Friedrich-Wilhelms-Universität Bonn and business administration at the Friedrich-Alexander-Universität Erlangen-Nürnberg, with emphasis on accountancy and banking management, public law with main stress on European law and strategic business planning and business policy. She graduated as Diplomkaufmann in 1993. Following her graduation, Hermann joined the statistics department at Sparkasse Leverkusen, the savings bank, where she worked in product cost accounting. 1994: Assistant to the director in charge of fundamental business policies and finance at Leipziger Wohnungs- und Baugesellschaft mbH, the housing and construction corporation, with main responsibilities in controlling. Since the foundation of the Europäische Akademie in 1996, she had been responsible for all matters of administration and finance. She was the contact person for all business and legal matters concerning the corporation, especially for the shareholders and sponsors of the company. Hermann’s contribution was crucial to the foundation of the academy’s association “Verein der Förderer der Europäischen Akademie”. Furthermore she organised the meetings of the working group “Medical Ethics” and the art exhibitions shown in the Europäische Akademie.

Dipl.-Kff. Margret Heyen  
(Chief financial executive and assistant of the director)

1994–1995 High School Year in Houston, Texas, at Spring Woods High School. After the A-level exam 1997, job training at Thomas Cook Travel Agency for 2.5 years. From 2000 on studies at Rheinische Friedrich-Wilhelms-Universität Bonn and Universität Bielefeld in economics and business with emphasis on German taxes, economic computer science and political economics. She graduated in June 2006 as Diplomkauffrau. Since July 2006 staff member of the Europäische Akademie: personal assistant of the director of the Europäische Akademie and responsible for administrative issues. Heyen also is responsible for the work of the sponsors’ club:

She organises the meetings of the working group “Medical Ethics”, the “Ahrtalgespräche” and the art exhibitions in the Europäische Akademie GmbH.

## Scientific Staff

Dipl.-Betriebswirt (FH) Jan A. Bollinger

Studies of Business Administration and Economics in Greifswald, Bonn and Koblenz from 1998 to 2005. After graduation he worked as Project Manager in a business consulting firm specialising in corporate strategy, business development, marketing and sales. In June 2007 he joined the Europäische Akademie as Ph.D. Student and member of the Project Group “Responsibility for Future Generations: Implementation of Sustainability in Schooling”. As a result of the latter he became author of the Graue Reihe Volume 45 “Strategic Positioning and Quality Development in Schools through education for sustainable development” in September 2008. He now is member of the Project “Protection of crucial bridges and tunnels of road traffic”. His doctoral dissertation project is concerned with the topic “Transformational Leadership in Interim Management”.

Dr.-Ing. Bert Droste-Franke, Dipl.-Phys.

Studied physics with the second subject of economics and an emphasis on environmental issues in Göttingen and Heidelberg. From 1995 to 1996 he worked at the Atmospheric Physics Division of the Max-Planck-Institute for Nuclear Physics, Heidelberg, for his diploma thesis. From 1996 to July 2006 he worked as researcher at the institute of energy economics and the rational use of energy of Universität Stuttgart. During this time he contributed significantly to a large number of national and international projects in the area of assessing impacts and damage costs from environmental pollution. Beside EU-projects like e.g. GARP, GREENSENSE, NEEDS and INTARESE, these include projects for the German contribution to the Convention of Long-Range Transboundary Air Pollution funded by the German environment agency and several consulting projects, e.g. for the World Bank Group. Additionally, he was responsible for the further development and distribution of the widely applied integrated assessment model EcoSense. In 2004 he received his doctoral degree with a thesis about the quantification of environmental damages as contribution to environmental accounting.

Since July 2006 he is member of the scientific staff at Europäische Akademie and coordinator of the project “Fuel Cells and Virtual Power Plants as Elements for a Sustainable Development. Innovation Barriers and Implementation Strategies”.

Thomas Engel, M.A.

Studies of philosophy, history and sociology at the Universities of Hagen und Bochum; graduation as M.A. with a thesis on normative implications of philosophical anthropology; studies of psychology at the University of Bochum; diploma envisaged 2008; since 2004 member of the scientific staff of the department of philosophy at the University of Hagen, section Medical Ethics; since 2006 member of the scientific staff of the Europäische Akademie GmbH and project coordinator of the project: “The Research Guiding Function of Metaphors from the Information Sciences and their Relevance to the Transformation of the Philosophy of Man”.

Dr. phil. Margret Engelhard, Dipl.-Biol.

1990–1997 study of biology with microbiology as a main subject at the Philipps-Universität Marburg, Germany, at the University of Edinburgh, Scotland and with an external diploma thesis at the Max-Planck-Institute for Terrestrial Microbiology, Marburg. 8/1995–9/1995 research expedition to Nepal to collect microbial samples for the diploma thesis, 1997 Dipl.-Biol., 8/1997–6/2004 Ph.D. course at the Botanical Institute of the University of Basle, Switzerland with micro- and molecular biology and botany as main fields of research. 11/1997–1/1998 research stay at the Laboratoire de Biologie Moléculaire des Plantes Supérieures, University of Geneva, Switzerland, 2004 Dr. phil. with the dissertation “The role of trehalose in nitrogen fixing nodule symbiosis: studies of rhizobia deficient in the trehalose-6-phosphate synthase gene *otsA*”. Since January 2004, member of the scientific staff at the Europäische Akademie and project coordinator of “Incentives for Organ Donation” (completed) and “Pharming. Genetically modified plants and animals as future production site of pharmaceuticals?”.

Dr. phil. Thorsten Galert, M.A.

M.A. in philosophy (second subject: chemistry) at the University of Marburg in 1997, Ph.D. in philosophy in 2004 at the same university on a thesis about animal pain that explored the general difficulties of conducting research in animal consciousness. Since 2004 member of the scientific staff of the Europäische Akademie

GmbH and coordinator of the project "Intervening in the Psyche. Novel Possibilities as Social Challenges" (concluded in June 2006. Since July 2006 coordinator of a project on "Potentials and Risks of Psychopharmaceutical Enhancement". Since October 2008 coordinator of the project "Deep Brain Stimulation in Psychiatry. Guidance for Responsible Research and Application." Since 2006 member of the European Platform for Life Sciences, Mind Sciences, and the Humanities, a network of 60 young academics doing research at the interface between neuroscience, philosophy and psychology, funded by Volkswagen-Foundation. Research areas: applied ethics in general and neuroethics in particular; philosophy of mind; philosophy of science in general and philosophy of psychology in particular; animal consciousness in general and animal pain in particular. Address: Europäische Akademie zur Erforschung von Folgen wissenschaftlich-technischer Entwicklungen Bad Neuenahr-Ahrweiler GmbH, Wilhelmstraße 56, Bad Neuenahr-Ahrweiler, Germany.

Kristin Hagen, Ph.D.

Studied biology, philosophy and agricultural science at the University of Tromsø (Norway), where she graduated in 1997 (interfaculty cand.mag.). Postgraduate studies with the Animal Welfare and Human-Animal Interactions Group, Department of Clinical Veterinary Medicine, University of Cambridge, as a member of St John's College. Ph.D. awarded in 2001 with the thesis entitled "The expression of learning and emotions in cattle". 2001–2002: postdoctoral scientist at the Institute of Animal Welfare and Animal Husbandry, University of Veterinary Medicine Vienna, investigating the effects of robotic milking on dairy cow health and welfare. 2002–2004: research on heart rate variability and vocalisations in cattle, affiliated with the University of Veterinary Medicine Vienna, the Free University Berlin, and the Research Institute for the Biology of Farm Animals, Dummerstorf. 2005: teacher at a primary school in Bergsfjord, a tiny fishing community in the far North of Norway. Since February 2006 member of scientific staff at the Europäische Akademie for the project group "Pharming".

Dr. phil. Gerd Hanekamp, Dipl.-Chem.

(exited in 2007)

Studied chemistry at Heidelberg and Marburg and at the École Nationale de Chimie in Lille; 1996: Doctorate in philosophy at the University of Marburg; from

1996–2003 junior/senior scientist, from 2003–2005 deputy director, Europäische Akademie Bad Neuenahr-Ahrweiler GmbH, presently on leave for a position at the Office of the Science Council; fields of research: applied ethics, philosophy of science, theory of the social sciences, technology assessment.

Dipl. Päd. Ulrike Henckel

1979 first state examination for teaching profession at Cologne. 1986 diploma in pedagogics, psychology and sociology at the Universität zu Köln. 1994 studies in philosophy at the FernUniversität Hagen. Since 2000 employment at the Institut für Philosophie at the FernUniversität in Hagen. Beginning of dissertation on ‘Anthropological Basics of Medical Ethics’. Since 2002 member of scientific staff at the Europäische Akademie and working for post graduate master study programme in Medical Ethics. Since 2006 project coordinator of the project: “The Research Guiding Function of Metaphors from the Information Sciences and their Relevance to the Transformation of the Philosophy of Man”.

Dr. phil. Georg Kamp, M.A.

After commercial training and two years working as a retail manager studies of philosophy and German language and literature at the universities of Essen, Duisburg and Bochum. Magister Artium 1993, thereafter until 1999 staff member of the Institute of Philosophy at the University of Essen, in 1999 completion of a philosophical dissertation about the possibilities and design of argumentation in regulative contexts. From April 1999 up to March 2002 staff member of the Europäische Akademie, then manager of the study group “Practical Philosophy” and sub-editor of the journal “Poiesis & Praxis” and responsible for the library. During a parental leave he worked as freelance consultant, docent und editor and absolved further education as Mediator at the FernUniversität Hagen. After managing a project on discontinuity in working-biographies at the Niederrhein University of Applied Science for a year he returned to the Europäische Akademie as coordinator of the project group “Responsibility for Future Generations. Implementing Sustainability in Schooling” and headmaster of the study group “Practical Philosophy” again. He currently is coordinator of the project group “Radioactive Waste – Technical and Normative Aspects of Its Disposal”.

Dr. rer. nat. Ruth Klüser, Dipl.-Chem.

1991–1998 study of chemistry at the Rheinische Friedrich-Wilhelms-University in Bonn. Student assistant at the University of Bonn from 10/1997–2/1998 and diploma with a thesis on syntheses of heterocyclic components at the department of Organic Chemistry in 3/1998. 1998–2003 Ph.D.-studies on Combinatorial Chemistry, mainly as a modern concept of determination of active agents. At the same time graduate assistant at the University of Bonn and Co-operation in the BMBF-Project ‘Validated Lead/Target Systems’ within the scope of the part-project ‘Model-experiments for the combinatorial Synthesis of biologically active heterocyclic systems (new pharmaceutical leads) with the building kit principle’. Junior scientist at the German Aerospace Centre in the department of Solar Research from 2004–2006. The project group HYDROSOL she worked for attracted international recognition and has been awarded different prizes, most notably the 2006 Descartes Prize for Collaborative Scientific Research which is endowed with a total of 1 Mio. Euro. Since March 2006 Member of scientific staff at the Europäische Akademie and coordinator of the project group ‘Societal Implications of Electrical Power Grids’.

Dipl.-Volksw. Annette Kötter  
(exited in 2008)

Studies of economics at the Universität Münster and Universidad de Sevilla with emphasis on energy and environmental economics as well as international economic relations. 2006 diploma thesis about the suitability of the European emission trading system to combat climate change. 2005 student worker at the institute for economic education at the Universität Münster, from January 2007 to March 2008 research assistant at the Europäische Akademie GmbH.

Dr. rer. pol. Karsten Mause, Dipl.-Pol.  
(exited in 2008)

1996–2001 studies in Political Science and Economics at University of Marburg, degree: “Diplom-Politologe” (5/2001). 2001–2006 doctoral studies in Economics and Research Assistant at the Department of Economics, University of Marburg, degree: Dr. rer. pol. (10/2006). Since November 2006 member of scientific staff at the Europäische Akademie for the project “Fuel Cells and Virtual Power Plants for a Sustainable Development”. Research interests: Public Choice Theory as well as the economics of higher education, innovation & consumer protection.

Katja Stoppenbrink, M.A., LL.M., Maître en Droit

Studied German, French, European and international law at the universities of Cologne and Paris I (Panthéon-Sorbonne) and history and philosophy at the Universität zu Köln. In 2006 she was co-coordinator of the French-German Master of Laws programme of the universities of Cologne and Paris I. In 2007 she joined the staff of the Europäische Akademie to work on an integrated research project on nanotechnology applications in medicine (NanoHealth) in which she is responsible for the study on “The Restoration and Enhancement of Human Capacities by Neuronal Implants”. Presently, she is preparing a doctoral thesis in philosophy under the auspices of Professor Dr. phil. Michael Quante at the Universität zu Köln and working as a project assistant at the Europäische Akademie for the project group “Deep Brain Stimulation in Psychiatry. Guidance for Responsible Research and Application”.

## Organisation and Administration

Katharina Mader, M.A.

(Editing, Public Relations)

1999–2005 studies of English, Communication Research/Speech Sciences/Phonetics and Psychology at the universities of Jena, Nottingham (UK) and Bonn (M.A. degree in 2005). Voluntarily working experience as a welfare worker both in Germany and the USA. During the studies scientific assistances at universities and editorial assistances at radio stations (Deutschlandfunk, Westdeutscher Rundfunk); journalist co-worker at several radio stations inland and abroad; teaching and supervising experiences (English and German language courses both in Germany and the UK). Since December 2005 member of the staff at the Europäische Akademie GmbH; responsible for editing, public relations and organisation of events.

Friederike Wütscher

(Editing, Public Relations)

Studied German and English at the University of Cologne (1991 to 1997). During this time she had a six month scholarship which she spent at the University of North London. At Cologne University she worked as student assistant at the linguistic institute of the English department. In her University years she gained

work experience in different fields of journalistic working fields., e.g. public relations agency, tv-station, and newspapers. After her examination she worked for the publishing company RAABE Fachverlag für Wissenschaftsinformation which is specialised in scientific publications. Her main working focus was in editing, marketing and developing concepts for new publications. In 1998 she began to work for the Deutsche Krankenhausgesellschaft (German hospital federation) as press officer. Here she was responsible for public relations and events and edited different publications. In March 2001 she started to work for the Europäische Akademie in editing scientific texts and public relations. She works in all fields of the academy which concern publications and events.

Dipl.-Ing. Anja Schlochtermeyer, M.A.

(Acquisition and administrative support of externally funded, in particular EU-funded, research projects)

Studied geography, political sciences as well as town planning and regional planning at the University of Oldenburg. Main focuses of her studies were European policy as well as cross-border- and interregional structural development. After her university studies she worked at the European Commission in Brussels in the Directorate General “Regio” as a “Stagière” where she was responsible for the mid-term evaluation of INTERREG II-A-projects carried out in German border regions (cross-border-cooperation). Since 2000 she worked at the EU-Bureau of the Georg-August-University of Göttingen as EU-research adviser which she finally headed since 2001. Ensuring the participation of researchers at the University Göttingen in the Research Framework Programme of the EU was her main responsibility. In addition, she co-ordinated a European educational project with 12 partners from four countries. After the birth of her daughter, Anja Schlochtermeyer joined the European Academy Bad Neuenahr-Ahrweiler where she is responsible for national and European research funding.

Margret Pauels, Diplom-Übersetzerin

(Reception, Guest Relations)

1965–1969 studies of English and French at the Auslands- und Dolmetscher-Institut Germersheim der Universität Mainz (Institute for Interpreters and Translators in Germersheim, section of the University of Mainz). 1967 studies at Salford University, Lancashire, United Kingdom. 1969–1977: translator at the British Embassy

in Bonn. 1978–1980 translator at the Embassy of Sudan in Bonn. 1990–1999 lecturer of English courses organized by the Chamber of Industry and Commerce Koblenz in Bad Neuenahr-Ahrweiler for foreign correspondence clerks. 1993–2000 social secretary to the Minister and Ambassador at the British Embassy in Bonn and Berlin. Since January 2001, receptionist and guest relation manager at the Europäische Akademie, responsible for the preparation and organisation of international conferences and meetings of the project groups.

Heidemarie Zimmermann  
(General Administration)

Office clerk training. 1981–1999 employment as office clerk and secretary with the Dr. Ernst Clinic, the Federal Armed Forces and the Volksbank – all located in Bad Neuenahr-Ahrweiler. 1995–1999 maternity leave. Since November 2000, member of staff at the Europäische Akademie responsible for the central administration, including personnel, the organisation of meetings of the project groups as well as the accounts of travel expenses.

Maria Icking  
(Accounting)

1995 termination of the study of business economics with the main emphasis on data processing; 1988–1997 managerial tasks in an orthopaedic practice followed by an employment with the director of the Department of Clinical Pharmacology at the University of Bonn as well as with a private clinic in Bonn (the GOC Verwaltung mbH); since October 1999 member of staff at the Europäische Akademie, responsible for wages and financial accounting, payments and costing.

Arno Schatz (exited in 2008)  
(IT-Administration)

1989 final examination in foreign trade and as wholesaler at the training college Bohlscheid in Cologne, Germany. Specialized in IT. 1991 computer specialist at the German Aerospace Center (DLR): Construction, development and maintenance of the IT-data network as well as user-assistance and planning of soft- and hardware equipment, linkage of branches with the PT-network. Training of users in different programmes. Since 2001, IT specialist at the Europäische Akademie.

## 6 Archive

### **Intervening in the Psyche. Novel Possibilities as Social Challenges (Duration: 1/04–6/06)**

Project Members

**Chair: Professor Dr. jur. Reinhard Merkel**

Seminar für Strafrecht und Kriminologie, Universität Hamburg

**Gerard Boer, Ph.D.**

Department of Neuroregeneration, Netherlands Institute for Neuroscience, Amsterdam

**Professor Dr. med. Jörg Fegert**

Abteilung für Kinder- und Jugendpsychiatrie/Psychotherapie, Universitätsklinikum Ulm

**Professor Dr. phil. Dirk Hartmann**

Institut für Philosophie, Universität Duisburg-Essen, Campus Essen

**Professor Bart Nuttin, MD, Ph.D.**

Department of Neurosurgery, U.Z. Gasthuisberg, Catholic University of Leuven

**Professor Dr. med. Steffen Rosahl**

Abteilung für Neurochirurgie, Helios Klinikum Erfurt

**Project Coordination: Dr. phil. Thorsten Galert, M.A.**

thorsten.galert(at)ea-aw.de

#### **Final report**

R. Merkel, G. Boer, J. Fegert, T. Galert, D. Hartmann, B. Nuttin, S. Rosahl, *Intervening in the Brain. Changing Psyche and Society* (volume 29 of the series “Ethics of Science and Technology Assessment”) Springer, Berlin 2007, ISBN 978-3-540-46476-1

**Environmental Noise. Risk Assessment and Regulations  
in the Traffic Sector  
(Duration: 7/03–12/05)**

Project Members

**Chair: Professor Dr. Michael Kloepfer**

Institut für Öffentliches Recht und Völkerrecht, Humboldt-Universität zu Berlin

**Professor Dr. Barbara Griefahn**

Institut für Arbeitsphysiologie, Universität Dortmund

**Professor Dr. Andrzej M. Kaniowski**

Katedra Etyki, Uniwersytet Łódzki

**Professor Klepper, Ph.D.**

Institut für Weltwirtschaft, Kiel

**Professor Dr.-Ing. Gerhard Steinebach**

Lehrstuhl Stadtplanung, Technische Universität Kaiserslautern

**Professor Dr. Heinrich B. Weyer**

Deutsches Zentrum für Luft- und Raumfahrt, Köln

**Dr. Peter Wysk**

Oberverwaltungsgericht für das Land Nordrhein-Westfalen, Münster

**Project Coordination: Dr. rer. nat. Stephan Lingner, Dipl.-Geol.**

stephan.lingner(at)ea-aw.de

**Final report**

M. Kloepfer, B. Griefahn, A. M. Kaniowski, G. Klepper, S. Lingner, G. Steinebach, H. B. Weyer, P. Wysk P, *Leben mit Lärm? Risikobeurteilung und Regulation des Umgebungslärms im Verkehrsbereich* (volume 28 of the series “Wissenschaftsethik und Technikfolgenbeurteilung”, ed. C. F. Gethmann) Springer, Berlin 2006, ISBN10 3-540-345 09-4

## Incentives for Organ Donation (Duration: 7/03–6/06)

### Project Members

**Chair: Professor Dr. rer. pol. Friedrich Breyer**

Chair of Economic and Social Policy, Department of Economics,  
Universität Konstanz

**Professor Dr. jur. Wolfgang van den Daele**

Director of the research unit “Standard-setting and Environment”,  
Wissenschaftszentrum Berlin für Sozialforschung; Professor for Sociology at the  
Freie Universität Berlin

**Professor Dr. med. Gundolf**

Gubernatis Hospital board, patients medical care, Reinhard-Nieter hospital,  
Wilhelmshaven

**Professor Dr. Hartmut Kliemt**

Faculty of Philosophy, Universität Duisburg-Essen

**Professor Dr. jur. Dr. med. Christian Kopetzki**

Faculty of Law, Institute for Public Law/Law of Medicine, Universität Wien;  
additional: Institute for Ethics and Law in Medicine

**Professor Dr. jur. Jochen Taupitz**

Chair for Civil Law, Civil Procedural Law, International Private Law, and  
Comparative Law at the Universität Mannheim

**Professor Dr. med. Hans Jürgen Schlitt**

Director of the Clinic and Polyclinic for Surgery, Universität Regensburg

**Project Coordination: Dr. phil. Margret Engelhard, Dipl.-Biol.**

margret.engelhard(at)ea-aw.de

### Final report

F. Breyer, W. Daele van den, M. Engelhard, G. Gubernatis, H. Kliemt, C. Kopetzki,  
H. J. Schlitt, J. Taupitz, Organmangel – Ist der Tod auf der Warteliste unvermeid-  
bar? Springer, Berlin 2006, ISBN 3-540-33054-2

### Publications

F. Breyer, M. Engelhard (eds) Anreize zur Organspende. Volume 39 of the series  
“Graue Reihe”, Europäische Akademie Bad Neuenahr-Ahrweiler, 11/2006

## **Nanomaterials, Nanodevices, Nanocomputing. Determination of Present Position and Perspectives**

**(Duration: 7/03–12/05)**

### Project Members

**Chair: Professor Dr. Günter Schmid**

Institut für Anorganische Chemie, Universität Duisburg-Essen

**Professor Dr. Holger Ernst**

Lehrstuhl für Betriebswirtschaftslehre, WHU Koblenz

**Professor Dr. Armin Grunwald**

Institut für Technikfolgenabschätzung und Systemanalyse,

Forschungszentrum Karlsruhe GmbH

**Dr. Werner Grünwald**

formerly Robert Bosch GmbH, Gerlingen

**Professor Dr. Hans-Joachim Güntherodt**

Institut für Physik, Universität Basel, Switzerland

**Professor Dr. Heinrich Hofmann**

DMX Ecublens, EPF Lausanne, Switzerland

**Dr. Harald Krug**

Institut für Toxikologie und Genetik, Forschungszentrum Karlsruhe GmbH

**Professor Dr. Peter Janich**

Lehrstuhl 1 für Philosophie, Philipps-Universität Marburg

**Dr. Marcel Mayor**

Institut für Nanotechnologie, Forschungszentrum Karlsruhe GmbH

**Professor Dr. Ulrich Simon**

Institut für Anorganische Chemie, RWTH Aachen

**Professor Dr. Viola Vogel**

Institute for Biologically Oriented Materials, ETH Zürich, Switzerland

**Project Coordination: Dr.-Ing. Wolfgang Rathgeber**

### **Final report**

G. Schmid, H. Brune, H. Ernst, A. Grunwald, W. Grünwald, H. Hofmann, H. Krug, P. Janich, M. Mayor, W. Rathgeber, U. Simon, V. Vogel, D. Wyrwa, Nanotechnology. Assessment and Perspectives (volume 27 of the series “Wissenschafts-

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ethik und Technikfolgenbeurteilung”, ed. C. F. Gethmann) Springer, Berlin 2006, ISBN-103540-32819-X

**Contact: Dr. rer. nat. Stephan Lingner, Dipl.-Geol.**  
stephan.lingner(at)ea-aw.de

### **European Social Policy** (Duration: 1/03–6/05)

Project Members

**Chair: Professor Dr. jur. Bernd Baron von Maydell**, Sankt Augustin

**Professor Dr. rer. pol. Klaus-Dirk Henke**, Berlin

**Professor Dr. Ruud Muffels**, Tilburg

**Professor Dr. phil. Michael Quante**, Essen

**Professor Dr. Pirkko-Liisa Rauhala, Ph.D.**, Helsinki

**Dr. Gert Verschraegen**, Leuven

**Professor Dr. Maciej Żukowski**, Poznan

**Project Coordination: Dott. Rupert Leitner**

### **Final report**

B. v. Maydell, K. Borchardt, K.-D. Henke, R. Leitner, R. Muffels, M. Quante, P.-L. Rauhala, G. Verschraegen, M. Żukowski, Enabling Social Europe (volume 26 of the series “Wissenschaftsethik und Technikfolgenbeurteilung”) Springer, Berlin 2006, ISBN 3540-29771-5

**Contact: Dr. med. Felix Thiele, M.Sc.**  
felix.thiele(at)ea-aw.de

## **Functional Foods**

**(Duration: 1/01–5/04)**

### Project Members

**Chair: Professor Dr. Ruth Chadwick**, Lancaster

**Professor Spencer Henson, Ph.D., B.Sc.**, Guelph

**Mr. Gerrit Koenen**, Den Haag

**Professor Dr. Cees Midden**, Eindhoven

**Professor Dr. Bevan Moseley**, Reading

**Professor Andreu Palou**, Mallorca

**Professor Dr. rer. nat. Dr. rer. nat. habil. Gerhard Rechkemmer**, München

**Dr. Doris Schröder**, Preston

**Professor Dr. Atte von Wright**, Kuopio

**Project Coordination: Miltos Ladikas, Ph.D.**

### Final report

R. Chadwick, S. Henson, G. Koenen, M. Liakopoulos, C. Midden, B. Moseley, A. Palou, G. Rechkemmer, D. Schröder, A. von Wright, Functional Foods (volume 20 of the series “Wissenschaftsethik und Technikfolgenbeurteilung”) Springer, Berlin 2004, ISBN 3-540-20120-3

**Contact: Dr. med. Felix Thiele, M.Sc.**

felix.thiele(at)ea-aw.de

## **TAMI: Technology Assessment in Europe: between Method and Impact**

**(Duration: 1/02–12/03)**

### Members

TAMI was co-ordinated by the Europäische Akademie. The following institutions have participated in the TAMI project:

- The Europäische Akademie zur Erforschung von Folgen wissenschaftlich-technischer Entwicklungen Bad Neuenahr-Ahrweiler GmbH, Germany

- The Parliamentary Office of Science and Technology (POST), UK
- The Forschungszentrum Karlsruhe GmbH (FZK), Institute for Technology Assessment and System Analysis (ITAS), Germany
- The Academy for Technology Assessment in Baden Württemberg (CTA), Germany
- The Danish Board of Technology (DBT)
- The Centre for Science and Technology Studies (TA-SWISS), Switzerland
- The Centre of Science, Technology and Society Studies at the Institute of Philosophy of the Academy of Sciences (STSS Centre), Czech Republic
- The Warsaw School of Economics (SGH), Institute of Modern Civilisation (IPWC), Poland
- The Consejo Superior de Investigaciones Científicas (CSIC), SPRITTE (Spanish Policy Research on Innovation & Technology, Training and Education), Spain

Additionally, the following institutes have also participated in the project albeit not as full members. They have been invited to TAMI meetings and also been asked to contribute to the scientific outcome as external experts:

- The Committee on Industry, External Trade, Research and Energy, European Parliament, Belgium
- The Rathenau Institute, The Netherlands
- The Flemish Institute for Science and Technology Assessment (viWTA), Belgium

**Project Coordination: Dr. Miltos Ladikas, Dr. Michael Decker**

#### **Final report**

M. Decker, M. Ladikas (eds) *Brigdes between Science, Society and Policy. Technology Assessment – Methods and Impacts* (volume 22 of the series “Wissenschaftsethik und Technikfolgenbeurteilung”) Springer, Berlin 2004, ISBN 3-540-21283-3

**Contact: Dr. rer. nat. Stephan Lingner, Dipl.-Geol.**  
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**Embryo Experimentation in Europe.  
Bio-medical, Legal and Philosophical Aspects  
(Duration: 1/01–12/03)**

Project Members

**Chair: Professor Dr. Davor Solter, M.D., Ph.D.,** Freiburg

**Professor Dr. jur. Deryck Beyleveld,** Sheffield

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**Professor Dr. Jacek Holówka,** Warsaw

**Professor Dr. jur. Hans Lilie,** Halle

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**Project Coordination: Minou Bernadette Friele, M.A.**

**Final report**

D. Solter, D. Beyleveld, M. B. Friele, J. Holówka, H. Lilie, R. Lovell-Badge, C. Mandla, U. Martin, R. Pardo Avellaneda, *Embryo Research in Pluralistic Europe* (volume 21 of the series “Wissenschaftsethik und Technikfolgenbeurteilung”) Springer, Berlin 2003, ISBN 3-540-20379-6

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**Environmental Standards.  
Low Dose Effect Relations and their Risk Evaluation  
(Duration: 1/01–5/04)**

Project Members

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**Final report**

C. Streffer, H. Bolt, D. Føllesdal, P. Hall, J. G. Hengstler, P. Jacob, D. Oughton, K. Prieß, E. Rehbinder, E. Swaton, Low Dose Exposures in the Environment. Dose-Effect Relations and Risk Evaluation (volume 23 of the series “Wissenschaftsethik und Technikfolgenbeurteilung”) Springer, Berlin 2004, ISBN 3-540-21083-0

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## **Sustainable Development and Innovation in the Energy Sector (Duration: 9/00–12/03)**

### Project Members

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**Project Coordination: Dr. phil. Gerd Hanekamp, Dipl.-Chem.**

### **Final report**

U. Steger, W. Achterberg, K. Blok, H. Bode, W. Frenz, C. Gather, G. Hanekamp, D. Imboden, M. Jahnke, M. Kost, R. Kurz, H. G. Nutzinger, Th. Ziesemer, Nachhaltige Entwicklung und Innovation im Energiebereich (volume 18 of the series “Wissenschaftsethik und Technikfolgenbeurteilung”) Springer, Berlin 2002

### **Publications**

G. Hanekamp, U. Steger (ed) Nachhaltige Entwicklung und Innovation im Energiebereich. Volume 28 of the “Graue Reihe”, Europäische Akademie, Bad Neuenahr-Ahrweiler, 7/2001

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## **Climate Prediction and Climate Precautions (Duration: 12/98–12/01)**

### Project Members

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### Final report

M. Schröder, M. Claussen, A. Grunwald, A. Hense, G. Klepper, S. Lingner, K. Ott,  
D. Schmitt, D. Sprinz, Klimavorhersage und Klimavorsorge (volume 16 of the  
series “Wissenschaftsethik und Technikfolgenbeurteilung”) Springer, Berlin 2002

**Publications**

S. Lingner, C. F. Gethmann, Klimavorhersage und -vorsorge. Volume 6 of the “Graue Reihe”, Europäische Akademie Bad Neuenahr-Ahrweiler, 7/1997

S. Lingner, Klimavorhersage und -vorsorge. Aufgaben und Ziele eines interdisziplinären Forschungsprojekts. In: TA-Datenbank-Nachrichten 8 (2): 26–28, ITAS Karlsruhe, 1999

M. Schröder, S. Lingner (eds) Modelling Climate Change and Its Economic Consequences. A Review. Volume 15 of the “Graue Reihe”, Europäische Akademie Bad Neuenahr-Ahrweiler, 6/1999

M. Schröder, M. Claussen, A. Grunwald, A. Hense, G. Klepper, S. Lingner, K. Ott, D. Schmitt, D. Sprinz, Climate Prediction and Precautions (Summary). Volume 23 of the “Graue Reihe”, Europäische Akademie Bad Neuenahr-Ahrweiler, 9/2000

**Contact: Dr. rer. nat. Stephan Lingner, Dipl.-Geol.**

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**Electronic Signatures. Cultural Controllability and Moral Justifiability  
(Duration: 9/99–12/01)**

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**Project Coordination: Dr.-Ing. Christian J. Langenbach****Final report**

C. J. Langenbach, O. Ulrich (eds) Elektronische Signaturen. Kulturelle Rahmenbedingungen einer technischen Entwicklung (volume 12 of the series “Wissenschaftsethik und Technikfolgenbeurteilung”) Springer, Berlin 2002

**Publications**

C. J. Langenbach, “Didaktik im Spannungsfeld zwischen NetUse und IT-Sicherheit”, In: BSI (ed) Zur Didaktik der IT-Sicherheit. Interdisziplinärer Diskurs zu querschnittlichen Fragen der IT-Sicherheit. SecuMedia Verlag Ingelheim, 1999

C. J. Langenbach, “Elektronische Unterschrift. Verliert der Bürger seine Identität?”, in: Akademie-Brief Nr. 15, Europäische Akademie Bad Neuenahr-Ahrweiler, 1999

O. Ulrich, “Protection Profile – ein industriepolitischer Ansatz zur Förderung des ‘neuen Datenschutzes’”. Volume 17 of the “Graue Reihe”, Europäische Akademie Bad Neuenahr-Ahrweiler, 11/1999

G. Banse, C.J. Langenbach, O. Ulrich, “Digitale Signaturen im Weitblick”, KES 99/5, SecuMedia Verlag Ingelheim, 1999, 85–87

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**Robotics: Options for Human Replaceability**  
**(Duration: 2/99–12/01)**

Project Members

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**Final report**

T. Christaller, M. Decker, J.-M. Gilsbach, G. Hirzinger, K. Lauterbach, E. Schweighofer, G. Schweitzer, D. Sturma, Robotik. Perspektiven für menschliches Handeln in der zukünftigen Gesellschaft. (volume 14 of the series “Wissenschaftsethik und Technikfolgenbeurteilung”) Springer, Berlin 2001

## Publications

M. Decker, Perspektiven der Robotik. Überlegungen zur Ersetzbarkeit des Menschen. Volume 8 of the “Graue Reihe”, Europäische Akademie Bad Neuenahr-Ahrweiler, 11/1997

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M. Decker, “Robotics: Options for Human Replaceability”. in: TA Datenbank-Nachrichten, vol.8, No. 3/4, 72–74, 1999

T. Christaller, M. Decker, J.-M. Gilsbach, G. Hirzinger, K. Lauterbach, E. Schweighofer, G. Schweitzer, D. Sturma, Robotik. Perspektiven für menschliches Handeln in der zukünftigen Gesellschaft. Springer, Berlin, ISBN 3-54042779-1, 2001

T. Christaller, M. Decker, Robotik. Perspektiven für menschliches Handeln in der zukünftigen Gesellschaft. Materialienband. Volume 29 of the “Graue Reihe”, Europäische Akademie Bad Neuenahr-Ahrweiler, 11/2001

M. Decker “Robotics: Perspectives for Human Action in Future Society”, In: Technology Assessment. Theory and Practice. No.2, vol. 11, 2002, 107–114

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## **Ethical Questions and Societal Consequences of Human Genetics (Duration: 4/98–3/00)**

Project Members

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**Professor Dr. phil. Dr. theol. Bernhard Irrgang**

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**Project Coordination: Dr. med. Felix Thiele, M.Sc.**

**Final report**

C. R. Bartram, J. P. Beckmann, F. Breyer, G. Fey, C. Fonatsch, B. Irrgang, J. Taupitz, K.-M. Seel, F. Thiele, Humangenetische Diagnostik. Wissenschaftliche Grundlagen und gesellschaftliche Konsequenzen (volume 7 of the series “Wissenschaftsethik und Technikfolgenbeurteilung”) Springer, Berlin 2000

**Publications**

F. Thiele, Ethische Fragen und gesellschaftliche Folgen der Humangenetik. In: TA-Datenbank-Nachrichten, Nr. 1, 8.Jg., 3/99

F.Thiele (ed) Genetische Diagnostik und Versicherungsschutz. Die Situation in Deutschland. Volume 20 of the “Graue Reihe”, Europäische Akademie GmbH, Bad Neuenahr-Ahrweiler, 1/2000

**Contact: Dr. med. Felix Thiele, M.Sc.**

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**Xenotransplantation of Cells, Tissues or Organs.**

**Scientific Developments, Ethical Implications and Social Relevance**

**(Duration: 4/98–3/00)**

**Members**

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**Professor Dr. med. vet. Dr. med. vet. habil. Dr. h.c. Gottfried Brem**

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### **Final report**

J. P. Beckmann, G. Brem, F. W. Eigler, W. Günzburg, C. Hammer, W. Müller-Ruchholtz, E. M. Neumann-Held, H.-L. Schreiber, Xenotransplantation von Zellen, Geweben oder Organen. Wissenschaftliche Entwicklungen und ethisch-rechtliche Implikationen (volume 8 of the series “Wissenschaftsethik und Technikfolgenbeurteilung”) Springer, Berlin 2000

### **Publications**

J. P. Beckmann, Xenotransplantation. Ethische Fragen und Probleme. Volume 7 of the “Graue Reihe”, Europäische Akademie Bad Neuenahr-Ahrweiler, 7/1997

E. M. Neumann-Held, Xenotransplantation von Zellen, Geweben oder Organen. Wissenschaftliche Entwicklungen, ethische Implikationen und gesellschaftliche Relevanz, in: TA-Datenbank-Nachrichten 11/98

J. P. Beckmann, G. Brem, F. W. Eigler, W. Günzburg, C. Hammer, W. Müller-Ruchholtz, E. M. Neumann-Held, H.-L. Schreiber Xenotransplantation von Zellen, Geweben oder Organen. Wissenschaftliche Entwicklungen und ethisch-rechtliche Implikationen. Springer, Berlin, 2000

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## **Biodiversity. Scientific Foundations and Social Relevance (Duration: 10/97–10/99)**

### Project Members

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Dr. rer. nat. Kathrin Prieß (from 11/99)**

### **Final report**

P. Janich, M. Gutmann, K. Prieß (eds) Biodiversität. Wissenschaftliche Grundlagen und gesellschaftliche Relevanz (volume 10 of the series “Wissenschaftsethik und Technikfolgenbeurteilung”) Springer, Berlin 2001

### **Publications**

M. Gutmann, P. Janich, Zur Wissenschaftstheorie der Genetik. Materialien zum Genbegriff. Volume 5 of the “Graue Reihe”, Europäische Akademie Bad Neuenahr-Ahrweiler, 4/1997

W. Barthlott, M. Gutmann (eds) Biodiversitätsforschung in Deutschland: Potentiale und Perspektiven. Volume 11 of the “Graue Reihe”, Europäische Akademie Bad Neuenahr-Ahrweiler, 10/1998

T. Galert, Biodiversität als Problem der Naturethik. Literaturreview und Biblio-

graphie. Volume 12 of the “Graue Reihe”, Europäische Akademie Bad Neuenahr-Ahrweiler, 12/1998

R. Amann, R. Rossello-Mora, The Species Concept in Prokaryotic Taxonomy. Volume 22 of the series “Graue Reihe”, Europäische Akademie Bad Neuenahr-Ahrweiler, 10/2000

### Studies

Literature Review and Bibliographie on: “Die Bewahrung der Biodiversität als Problem der Naturethik” (30.9.1997–28.2.1998) by Th. Galert (Professor Dr. Peter Janich);

Literature Review and Bibliographie on: “Artbegriff in der Paläontologie” (1.7.1998–31.12.1998) by M. Gudo (Professor Dr. Fritz F. Steininger);

Priv.-Doz. Dr. Rudolf Amann: “Der Artbegriff in der Mikrobiologie. Vergangenheit, Gegenwart, Zukunft”;

Dr. Michael Türkay: Study on “Qualifizierungsmöglichkeiten der Biodiversität an einem gegebenen Ort bei Anwendung taxonomischer und systematischer Methoden im Rahmen des Projekts ‘Biodiversität’ der Europäischen Akademie”.

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## **Environmental Standards. Combined Exposures and their Effect on Human Beings and their Environment (Duration: 1/97–1/00)**

Project Members

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**Dr. phil. Gerd Hanekamp, Dipl.-Chem. (from 10/98)**

### **Final report**

C. Streffer, J. Bücken, A. Cansier, D. Cansier, C. F. Gethmann, R. Guderian, G. Hanekamp, D. Henschler, G. Pöch, E. Rehbinder, O. Renn, M. Slesina, K. Wuttke, Umweltstandards. Kombinierte Expositionen und ihre Auswirkungen auf den Menschen und seine Umwelt (volume 5 of the series “Wissenschaftsethik und Technikfolgenbeurteilung”) Springer, Berlin 2000

### **Publications**

S. Saupe “Projekt Umweltstandards: Kombinierte Expositionen und ihre Auswirkungen auf die Umwelt und den Menschen”, in: TA Datenbank-Nachrichten, vol. 6, Nr. 3/4, 1997, 69–72

S. Saupe “Environmental Standards for Combined Exposures? Ethical and Legal Aspects”, in: Preprints der Jahrestagung der Societas Ethica, 19.–23.8., Turku, Finnland, 100, 1998

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## **Technology Assessment of the Research and Development of New Materials**

**(Duration: 1/97–12/99)**

### Members

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### Final report

H. Harig, C. J. Langenbach (eds) *Neue Materialien für innovative Produkte: Entwicklungstrends und gesellschaftliche Relevanz* (volume 3 of the series “Wissenschaftsethik und Technikfolgenbeurteilung”) Springer, Berlin 2000

### Publications

C. J. Langenbach, “Technikfolgenbeurteilung der Erforschung und Entwicklung neuer Materialien”, in: *Informationen zur TA, DLR, VDI, VDI/VDE* (eds) 10/1997, 9–10  
M. Socher, “Neue Werkstoffe – ein interessantes Thema für die Technikfolgenforschung”, Rezension, in: *TA-Datenbank-Nachrichten*, Nr. 3/4, 6. Jahrgang, November 1997, 87–89

H. Harig et al., Technikfolgenbeurteilung der Erforschung und Entwicklung neuer Materialien. Perspektiven in der Verkehrstechnik. Endbericht zum Vorprojekt. Volume 4 of the “Graue Reihe”, Europäische Akademie Bad Neuenahr-Ahrweiler, 1/1997

C. J. Langenbach, “Langfristige Perspektiven in der Materialwissenschaft – Ein Fall für die Technikfolgenbeurteilung?”, in: TA-Datenbank-Nachrichten, Nr. 1, 7. Jahrgang, März 1998, 69–71

H. Harig, C. J. Langenbach (eds) Neue Materialien für innovative Produkte. Entwicklungstrends und gesellschaftliche Relevanz (volume 3 of the series “Ethics of Science and Technology Assessment”, Springer, Berlin, 1999

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