



EUROPÄISCHE AKADEMIE

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

Direktor: Professor Dr. Dr.h.c. Carl Friedrich Gethmann

NEWSLETTER

AKADEMIE-BRIEF • NO 88

APRIL 2009

EDITORIAL

■ In January 2009 the director of the Europäische Akademie GmbH, Professor Dr. Dr.h.c. Carl Friedrich Gethmann, celebrated his 65th birthday. On this occasion members of staff and colleagues prepared a Festschrift in his honour. The title of the book is “Erkennen und Handeln” (Fink Verlag) and was edited by Dr. Georg Kamp and Priv.-Doz. Dr. Felix Thiele, members of staff at the academy.

The volume contains 24 contributions covering the fields of ‘philosophy of language and the philosophy of logic’, ‘epistemology and philosophy of science’ and ‘ethics and applied philosophy’ representing Gethmann’s systematic interest in a broad range of topics in philosophy. The contributing authors, colleagues and former students of Professor Gethmann, used the welcome opportunity to pay tribute to his scientific achievements.

The Festschrift was presented to Professor Gethmann on 26 March 2009 on the occasion of the academy’s spring conference in Bad Neuenahr-Ahrweiler on ‘transformation of the philosophy of man in the age of information sciences’ which was also attended by a number of authors of the book.

For further information about the conference see “Conferences” in this Newsletter edition.

KM/MP/FW

FOCUS

Human Enhancement – What Does “Enhancement” Mean Here?

Armin Grunwald

For several years there has been talk of new possibilities for “technically enhancing” humans. Technically upgrading the human body and mind is entering the realms of feasibility and raises ethical issues on the future of human nature. Conceptual clarifications are closely bound up with or at the root of these ethical questions. In this paper I will trace the apparently self-evident concept of “enhancement” and put forward suggestions for a self-conscious use of the concept in the context of the debate on the “technical enhancement” of humans. The conceptual field of healing, doping and enhancement can be structured in such a way as to make the normative uncertainties involved in each case the transparent starting points of ethical reflection.

Following the publication of ‘Converging Technologies for Improving Human Performance’ by the National Science Foundation of the USA, the discussion on “human enhancement” rapidly started up worldwide. The new scientific visions and utopias of the “technical enhancement” of humans include the expansion of human sensory abilities, the extension of brain functions using technical aids, and the deceleration or cessation of the aging process. The term “enhance” has fundamentally positive connotations in the lifeworld as the opposite of “worsen”, but with regard to the question of enhancing humans, caution is indicated: in totalitarian regimes, the “enhancement” of humans was placed at the service of the reigning ideology. In National Socialist Germany, “enhancement” was understood against the background of the ideology of scientific racism, primarily as breeding to achieve perceived Aryan ideals. Under Stalin, the emphasis was on propaganda and indoctrination to make people “better” in the sense of the orthodox ideology. Against this background, one often hears the argument that approaches to enhance humans intrinsically manifest totalitarian features. This means that caution

must be exercised whenever there is talk of specifically “enhancing” humans.

Indeed, even the word “enhancement” and its use must be examined carefully. “Enhancement” is not a one-place predicate, but can only be determined relative to certain criteria. Caution must be used to avoid running into the rhetorical trap suggested by everyday language of regarding an enhancement as intrinsically positive. Rather, one must basically enquire after the criteria by which a simple change is evaluated as an “enhancement”.

Enhancement represents an activity, an action through which an object is changed into a particular direction: there are *actors* (the subjects of enhancement) who enhance *something* (the object of enhancement) according to *criteria*. In accordance with this, “enhancement” necessarily includes three semantic dimensions:

1. A *starting point* for enhancement. An enhancement is only plausible as an *enhancement* if the starting point of change is given;
2. A *criterion* of enhancement. A normative criterion, relative to which the enhancement

takes place, must be given. A criterion consists of the declaration of a *parameter* (quantitative or qualitative) and the *direction* in which the parameter will be altered to constitute an enhancement. The direction of change in which something is seen as an enhancement depends on the target of enhancing;

3. A *measure* of enhancement. Measuring the *size* of an enhancement is primarily significant in weighting processes if the enhancement in one place is offset by a deterioration in another, and balancing is necessary.

While *enhancing* relates to the change compared to a starting point in the intended direction, *optimizing* and *perfecting* are different subjects. Enhancing entails only the *direction* of a change, while optimizing and perfecting are orientated to an envisaged *final or target status*. Although enhancing is bound up with a direction, it is open in measure and has no defined end, while an optimization is at an end when the optimum is reached. Thus, although the technical “enhancement” of humans and their optimization or perfection are frequently equated, they are simply not identical.

Talking of a “technical” enhancement, as it is intended here, assumes that the starting point of the enhancement itself (see above) can be described technically. Criteria and the direction of the enhancement then emerge by being established relative to the technomorphically determined starting point. A technical enhancement of humans, if it is not to be meant merely metaphorically, needs up-front technical human modelling through the declaration of ‘performance parameters’ which might be enhanced.

Technical enhancement is usually preceded by the technical compensation of deficits, e.g. organs that have failed through disease or as the result of an accident. The standard to be achieved here as the aim of the technical compensation is attainment of the usual level of human performance with the technical implant. In keeping with medical ethics, the target for the patient is to regain his full capabilities through a technical reconstruction which is equal in result to the natural body functions.

Now, assuming one succeeds in technically re-creating, for instance, a sensory organ like an eye with equally good results. An artificial eye of this kind – as is customary in technical development and production – would be given a version number by its manufacturer: it would be ‘eye 1.0’. However, version 1.0 will not be the last one, because as soon as version 1.0 will have been developed and tested, engineers and physicians will be thinking of the next version: enhancement is a technological imperative in modern technology. Hereby, there may be entirely different directions of enhancement, e.g. a

reduction in costs or the service interval for eye version 1.0. Thus, by no means version 2.0 has to be improved with regard to human sensory capabilities (e.g. giving night-sight ability or zoom options) – but this enhancement forms part of the spectrum of the technological imperative, as applied to eye 1.0. A technical enhancement of humans is, thus, revealed as a consequential step of a technical restoration of failed or deficient body functions. The transition from interventions that are *restorative* to those that are *enhancing* is a gradual one *from a technical perspective* and by no means revolutionary in this respect. In this field the efficacious technological imperative *necessarily* leads from healing to enhancing if it is not guided normatively by arguments of a different type.

Then enhancement has no intrinsic limits or measures but opens up an infinite space of the possible. Once a status has been achieved in enhancing humans, this does not mean the enhancement process stops in the sense of a target being reached; rather it serves as the starting point for the next enhancement, and so on. This feature radically distinguishes healing from enhancement: healing comes to an end when the patient is healthy, while enhancement does not come to an end, even if it is successful, but is driven ever onwards by the restlessness of the technological imperative.

Large parts of the enhancement debate attempt exclusively to clarify the border between *healing* and *enhancement*, or they argue that no clear border can be drawn here. However, even if the border between healing and enhancement might be controversial and unclear on the object plane, it does represent a limit on discourse. The discourse of healing is different from that of enhancement. What is crucial is the clarification of what is regarded as the *starting point* of the enhancement (see above):

1. The physical or mental endowment of a specific human *individual*,
2. the standard of an average healthy person, as measured for instance according to statistical surveys of human performance potential, or
3. the achievement potential of humans which can be achieved under optimal conditions; that is to say, at the upper end of the statistical distribution of the achievement potential.

In the first case, even a pair of glasses would be an enhancement of an individual whose eyes did not come up to the expectations placed on healthy human eyes. In the second case, it would only constitute an enhancement if a particular measure meant that the standard of a healthy human were exceeded, and in the third case, one would ultimately speak of an enhancement only if the “usual” human abilities were exceeded.

My suggestion is to consider only those measures as human enhancement which take the starting point of a healthy human being under optimal conditions and go beyond this. Corresponding criteria are – according to the examples above – e.g. the perceptibility of electromagnetic radiation using the parameter of its wavelength, the storage capacity of the brain or the rate of forgotten knowledge. Thus, only those alterations will be regarded as human enhancements which make humans in some regard more efficient than is normally expected of them under optimal conditions – and this “normally” should also encompass the methods of sports training, coaching techniques, etc. This means that normal cosmetic surgery, in contrast to what is widely maintained, does not serve to enhance humans, at least as long as its aim is to realise ideals of beauty who are not out of the ordinary within cultural development and history.

In this conceptual suggestion, a semantic gap arises between healing and enhancement when the enhancement of individuals does not exceed a humanly customary level. It is precisely here that we find the gap relating to doping in sports. Doping is neither healing nor is it an enhancement going beyond abilities that are humanly possible. For this reason, to sharpen our linguistic usage and – at the same time – to draw attention to each of the different, normative regimes that regulate these options, the following terminology is suggested on the basis of the distinctions given above:

1. *Healing* as the removal of individual deficits relative to recognized standards of an average healthy human being.
2. *Doping* as an increase in individual performance potential without there being any existing deficit in terms of (1), but in a measure that the performance achieved through it still appears as conceivably “normal” within the spectrum of usual human performance – either in sport or in normal life.
3. *Enhancement* as an increase in performance going beyond abilities that are regarded as “normally” achievable by humans who are healthy, capable and ready to perform under optimal conditions.
4. *Alteration* of human composition, e.g. inventing new organs or bodily functions.

In doping-like cases – unlike “enhancement” in the full sense – questions of human self-image and the future of human nature, which dominate the enhancement debate, are not touched upon. For new forms of doping, normative frameworks exist which can be taken into account; for the enhancement of human beings, however, in terms of the production of “super-human” or “transhuman” capabilities and features, these do not exist at all. The normative insecurities involved, thus, differ in terms of category – and for this reason it is recommen-

ded to make this distinction and work with it, for example in ethical reflection. Between the considerations of how one should handle the consumption of drugs to improve brain performance that is currently increasing strongly, and questions of the direction a society would take in which in the future the discriminability between humans and technology would be largely removed, there are hardly any overlaps. The conceptual means by which we speak of these topics should reflect such differences.

These considerations were presented at the philosophical colloquium at the Universität Duisburg-Essen on 5 January 2009. They are published in: A. Grunwald, Auf dem Weg in eine nanotechnologische Zukunft. Philosophisch-ethische Fragen, Freiburg 2008.

Professor Dr. rer. nat. Armin Grunwald is professor of philosophy and ethics of technology at the Technische Universität Karlsruhe and head of the "Institut für Technikfolgenabschätzung und Systemanalyse (ITAS)" at the Forschungszentrum Karlsruhe. Furthermore he has been head of the „Office of Technology Assessment at the German Bundestag (TAB)" since 2002. He was deputy director of the Europäische Akademie GmbH from 1996 to 1999.

CONFERENCES

Spring Conference 26/27 March

■ The conference "Transformation of the Philosophy of Man in the Age of Information Sciences", hosted by the Europäische Akademie and the Philipps-Universität Marburg, addressed the topic of metaphors which have found their way into computer science and life sciences research. They are not to be ignored in today's "knowledge society" and are ever increasing (e.g. terms such as "information" or "gene"). The speakers were experts from the fields of computer science, biology, and philosophy. In the first section it was demonstrated that talking about the semantically charged term "information" only makes sense if the observer is capable of interpreting it. The second section discussed implicit assumptions in various philosophies of man in the context of technology and knowledge (e.g. robotics and "ambient computing"). At the end of the conference, perspectives regarding the use of metaphors for an informed understanding of man were presented; their role regarding a critique as well as the assumptions which are made in current life sciences research were particularly emphasised.

Expert Meeting on Public Health

■ The second expert meeting on "Ethical Questions of Public Health Policy" was held on 19/20 March at the Europäische Akademie.

Again it involved several experts from the fields of medicine, jurisprudence, sociology and philosophy and focused on socio-political and ethical questions with regard to public health, especially those related to the problem of justice. Dr. P. Schröder-Bäck (University of Maastricht) spoke about the basic requirements of ethics in the field of public health, while Professor G. Marckmann (Universität Tübingen) tried to outline a more specific methodical framework for evaluating measures taken in this respect. Dr. O. Rauprich (Ruhr-Universität Bochum), on the other hand, proved several basic theories of justice with regard to their usefulness of solving conflicts of policy in public health. Finally, Professor V. H. Schmidt (University of Singapore) proposed some new ideas on restructuring the health care system taking into account that resources are becoming more and more narrow.

"Neurocultures" Conference in Berlin

■ Do we live in a "neuro-centric culture"? A workshop on "Neurocultures" (20–22 February 2009) at the Max Planck Institute for the History of Science in Berlin, in collaboration with the BIOS Centre of the London School of Economics (LSE), tried to shed light on the phenomenon that neuroscientific knowledge has pervasively penetrated other disciplines and recently led to the emergence of fields such as neuro-economics, neuro-aesthetics, neuro-ethics, etc. Not being confined to science proper, knowledge about the brain reaches our everyday life and – such the underlying hypothesis of the workshop organisers – "our culture as a whole". The workshop examined the plurality of "such constellations of ideas, practices, and social forms" under the hitherto not established wording of "neurocultures".

Talks and comments were given by philosophers, cultural anthropologists, social scientists and historians of science as well as neuroscientists. The attempt to give some critical "Notes on Neuroethics" (Fernando Vidal) regrettably resulted in a lop-sided depiction of the activities in this field as an enterprise of apologetic advocacy.

In a well-balanced account of the legal implications of neuroscientific advances Nikolas Rose, director of BIOS and professor of sociology at the LSE, talked about "Governing Risky Brains" under the title "Screen and Intervene". In his view, the nascent field of neurolaw has less to expect from the debate on free will and determinism and the related questions of whether a culpability-based criminal law will have a future. Rather, it will have to deal with the practical options arising from neuroscientific findings for crime-preventive public policies.

By and large the "Neurocultures" workshop demonstrated that the existing and sometimes colliding scientific 'cultures' have not overcome

their cleavages in view of an alleged shared 'neuro-centrism'. Inter- or transdisciplinary scientific approaches risk to fail if some basic understanding and benevolent 'rapprochement' is not provided for.

Further information: <http://www.mpiwg-berlin.mpg.de/PDF/NeuroculturesFlyer.pdf>

Contact:

Katja Stoppenbrink, LL.M., M.A.

+49 (0) 2641 973-323

katja.stoppenbrink@ea-aw.de

Conferences on Energy

■ In the context of his project "Energy storages and virtual power plants" Dr. B. Droste-Franke participated at conferences in Brussels (16/17 February) and Fulda (25/26 March). The final results of the NEEDS project (Brussels) include new developments of the valuation methodologies for energy systems, the valuation of selected energy technologies and the analysis of various future energy scenarios. Furthermore, Droste-Franke attended the VDI conference (Association of German Engineers) "Elektrische Energiespeicher, Schlüsseltechnologie für energieeffiziente Anwendungen" in Fulda. Besides other topics, the development status of electrical energy storages and their integration into the energy system were discussed.

Contact:

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

+49 (0) 2641 973-324

bert.droste-franke@ea-aw.de

NEWS

Habilitation of Felix Thiele

■ In January 2009 Felix Thiele became member of the faculty of humanities, Universität Duisburg-Essen. He achieved the permission to teach "practical philosophy with special regard to medical ethics" (*venia legendi*).

Netzwerk Technikfolgenabschätzung (NTA)

■ The German speaking community "Netzwerk Technikfolgenabschätzung (NTA)" (network on technology assessment) approached its fifth year of activity. This gave reason to the NTA's coordination team to initiate a critical review process which should help the members to decide whether the network activities should be continued and in which way the community should evolve further. The coordination team prepared a corresponding questionnaire which will be sent to the members of the network for inquiry. Early results of the evaluation might be presented on the occasion of the next annual NTA conference in autumn 2009.

WORKING GROUPS

- Project Group “Clinical Research in Vulnerable Populations”: 17–18/3/2009 in Berlin
- Project Group “Potentials and Risks of Psychopharmaceutical Enhancement”: 15/4/2009 in Münster
- Project Group “Radioactive Waste. Technical and Normative Aspects of its Disposal”: 23–24/4/2009 in Berlin

Project Group on Radioactive Waste

■ The second meeting of the project group “Radioactive Waste. Technical and Normative Aspects of its Disposal” took place at the Europäische Akademie in Bad Neuenahr-Ahrweiler on 17/18 February 2009. The group was concerned with classificatory concepts which allow to treat the different strategies to cope with the problem of radioactive waste in a systematic manner. Professor K.-J. Röhlig (Technische Universität Clausthal) made first suggestions and, in cooperation with Professor W. Kröger (ETH Zürich), will work out a well-functioning concept. Professor E. Rehlinger (Frankfurt) presented first results of his exploration of the legal regulation of the treatment of radioactive waste while Professor Ch. Streffer (Essen) gave a survey on biological effects of ray exposition and their dependence on the dosis.

 Contact:

Dr. phil. Georg Kamp, M.A.
 +49 (0) 2641 973-308
 georg.kamp@ea-aw.de

Ethical Evaluation – SKRIBT

■ On 10 March 2009 the joint research project “Protection of crucial bridges and tunnels of road traffic (SKRIBT)” held its third regular meeting at the faculty of civil engineering at the Universität Bochum. Main topics were presentations and discussions of surveys on the diversity of hazards to crucial constructions and of possible countermeasures to cope with corresponding risks. The ongoing ethical evaluation of the

provisional results will enable the partners to formulate acceptable provisions in favour of crucial infrastructures and their users.

 Contact:

Dr. rer. nat. Stephan Lingner, Dipl.-Geol.
 +49 (0) 2641 973-306
 stephan.lingner@ea-aw.de

PUBLICATIONS

Carl Friedrich Gethmann

■ “Das Ethos des Heilens und die Effizienz des Gesundheitssystems”, in: Th. Junginger/ K.J. Lackner (eds.), *Medizin und Gewissen*, Mainz 2008, 117–134

Georg Kamp/Felix Thiele

■ (eds) *Erkennen und Handeln*, Festschrift für Carl Friedrich Gethmann zum 65. Geburtstag, Fink Verlag 2009

LECTURES

Thorsten Galert

21/1/2009

■ “Durch Pillen zu mehr Scharf- und Frohsinn? Ethische Probleme des Neuroenhancements”, Interdisziplinäres Diskussionsforum Fachschaft I/1, RWTH Aachen

Carl Friedrich Gethmann

2/4/2009

■ “Die Rolle der Bioethik in der interdisziplinären Forschung”: Conference “Integrative Bioethik”, Ruhr-Universität Bochum

Katja Stoppenbrink

3/4/2009

■ “Das Gewissen im Recht. Die Gewissensfreiheit als rechtliche Strategie zur Lösung moralischer Konflikte mit dem Recht?”, 16. Jahrestagung des Jungen Forums Rechtsphilosophie, “Konflikte im Recht – das Recht der Konflikte”, 3.–4. April 2009, Göttingen

PERSONALITIES



■ Heidmarie Zimmermann is member of staff at the Europäische Akademie GmbH and responsible for general administration. From 1978 to 1981 Zimmermann underwent a vocational training as office clerk in the purchasing and sales as well as accounting departments of the firm of Franke Großhandel in Meckenheim near Bonn. After that training she was employed with the Klinik Dr. Ernst in Bad Neuenahr-Ahrweiler. Her tasks covered the correspondence held with patients and insurance companies and the typing of medical final reports. From 1982 to 1991 Zimmermann worked as secretary to a head of department at the Federal Armed Forces in Bad Neuenahr-Ahrweiler. This was followed by an employment as secretary to the marketing and general manager of the Volksbank Bad Neuenahr-Ahrweiler from 1991 to 1995. Among others, she worked both in the credit and accounting departments. From 1995 to 1999 she was on maternity leave. Since November 2000 Zimmermann has been member of staff at the Europäische Akademie GmbH where she is responsible for personnel affairs (preparation of contracts, managing personnel files, governing removal expenses and the cooperation with responsible agencies outside the academy), the handling of travel expenses and general tasks in the administration office such as correspondence, circular letters, house administration and support in the preparation and implementation of conferences.

Heidmarie Zimmermann is staff member of the Europäische Akademie GmbH and responsible for general administration.

Publisher:

Europäische Akademie zur Erforschung von Folgen wissenschaftlich-technischer Entwicklungen
 Bad Neuenahr-Ahrweiler GmbH, Wilhelmstraße 56, 53474 Bad Neuenahr-Ahrweiler, Germany

E-Mail & Internet:

europaeische.akademie@ea-aw.de • www.ea-aw.de

Director:

Professor Dr.phil. Dr.phil.h.c. Carl Friedrich Gethmann (V.i.S.d.P.)

Editing:

Katharina Mader, M.A., Phone +49 (0) 2641 973-313, Fax 973-320
 katharina.mader@ea-aw.de

Typesetting/Layout:

Heim für angewandte Grafik, Heidelberg, Mannheim, info@heimzentrale.de

Print:

Lambertz Druck, Köln, Bornheim, info@lambertzdruck.de
 ISSN 1432-0150, frequency of publication: 8–10 times per year, 2.700 copies,
 reproduction is permitted with reference to the source, please send two voucher copies.