



# Europäische Akademie

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

Direktor:  
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# Newsletter

Akademie-Brief ▪ No. 50 (October 2004)

## Editorial

With the present Newsletter you hold the 50th edition in your hand. After the usualness of the decimal-culture, we use this occasion to undertake a review on already performed as well as a forecast on the further planning. In September 1996 the Newsletter was originated; in the beginning it appeared 4 times per year and from the outset it was distributed free of charge. Since then many things have been developed. So the frequency of publication was increased steadily and since last year an appearance of 8–10 issues per year is striven.

Since August 1999 the Newsletter is published predominantly in English language and is now better accessible for our international readership. In the course of the world-wide-web the German resp. English translations of the focus article as well as the complete Newsletter editions can be downloaded on the website of the academy – [www.europaeische-akademie-aw.de](http://www.europaeische-akademie-aw.de).

From the beginning the Newsletter should not only fulfil the task to inform the most important participants (partners and initiators, scientists from the interdisciplinary project groups, in addition interested scientists of all disciplines, particularly from institutions with similar task formulation, delegates, members of the executive, representatives of the economy, journalists – just to name a few) about the activities of the Europäische Akademie and its staff members. Moreover, the focus article appearing in each edition should take up current subjects of the public discussion with respect to the consequences of scientific and technological developments and should inform in condensed form about it as well as discuss the most important questions. Numerous reactions out of the circle of the addressees encourage us to adhere at this form of communication.

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## Focus

### Responsibility and Uncertainty

Rupert Leitner

In the face of uncertain undesired consequences of actions the question of whom to hold responsible for them is particularly hard to answer. In this article an attempt is made to answer this question from a pragmatic, if not functional, but yet ethically grounded perspective, with regard to the problem of how to cope with the danger of damage due to unforeseeable consequences of technological innovation. As far as the question of the subject capable of assuming the responsibility is concerned the focus will be on the suitability of corporations.

#### Responsibility and the Ascription of Responsibility

Responsibility is basically a four-place relation: the subject responds for an object in front of an instance in accordance with a set of given rules or norms. In regard to the goal of coping with the uncertainties connected to technological innovation and progress, a fifth place has to be added: time, and with it the distinction between reactive and prospective responsibility, i.e. the differentiation between the assumption of the responsibility for past, already occurred or future and hence at present only possible consequences of actions.

Responsibility can not be put on somebody for something in accordance only to a description of a succession of events and his position in relation to them. Instead it has to be stressed that to call somebody to account is an action as well. Responsibility is ascribed to the subject of the above mentioned relation, e.g. by means of the law, with the ascription being a goal oriented action subject to and if so justified by the rules of ascription relevant for the case. Responsibility thus is a social construction that serves the purpose of solving problems.

The ascription of responsibility to a given subject works in the sense of an alignment,

an orientation of its actions. Since it is going to bear the consequences of the ascription, it will consider them in the comparison and appreciation of the reasons for and against the different options of actions available, and make its choice accordingly. In this regard heavier sanctions may exert a stronger influence. But since generally the subject is going to be made responsible for harmful effects on the account of third parties a second function of sanctions has to be considered, too. Sanctions with unilateral effects only, even very heavy ones like penal prosecution, individual resignation and public bearing of the moral blame, do not and cannot contribute to the repair of the damage, unless by preventing its repetition. On the other hand, sanctions with bilateral effects in the form of repair payments for economic compensation or, where possible, of obligations to restore the damaged good in its former condition, may exert the same influence on the choice of action made by the responsible subject and in addition provide means for reparation. For this reason responsibility as a problem solving mechanism is going to be more effective if constructed in the form of liability.

### The Object of Responsibility: the Case of Uncertainty and Ignorance

Accordingly to the constructedness of the concept of responsibility there are different answers to the question of which consequences of actions may be feasible objects of responsibility. Future consequences of actions are before their incidence undetermined and can be further specified with respect to the knowledge one has, before they occur. Three different situations can be distinguished. Risk is defined as a setting in which not only all possible outcomes of an action but also the probabilities of each are known. Uncertainty is defined by a setting in which again the whole set of outcomes is known but no distribution of probabilities can be assigned to it. Finally situations, where one lacks knowledge not only of the probability distribution but of part of the outcomes too, are called with respect to the unknown outcomes situations of ignorance. In theory the field of unknown outcomes is infinite. However, since historical experience shows that the application and diffusion of new technologies repeatedly led to consequences which beforehand were completely unforeseeable, often not even imaginable, also unknown consequences have to be taken into account.

In deciding between different technological options in general every effort is made by various methods of foresight and prognosis in order to transform ignorance into uncertainty and uncertainty into risk. But the residual lack of knowledge by definition can never be reduced completely. In front of uneliminable uncertainty and ignorance one could deduce that the only way to deal responsibly with it would consist in avoiding the undesired consequences by renouncing technological innovation at all. But this conclusion seems to misconceive the sense of the concept of responsibility, especially of prospective responsibility. Prospective responsibility rather than to preclude any possible harmful outcome means not only to do what is possible to prevent these outcomes but to provide for the case of their occurrence as well.

If the ascription of reactive responsibility serves the trivial purpose of determining who is liable for an already occurred damage, and if even prospective responsibility is quiet trivial in the case of risk, since risk is by definition insurable, prospective responsibility is no longer trivial where uncertainty and ignorance cannot be transformed in calculable risks. In such situations to assume responsibility means to undertake the task of finding a solution to a problem, a solution which is at most defined in broad lines in its final state but not in the way how to get there. Here comes into play the difference between duty and responsibility. Where duties can be clearly defined

in competencies and tasks there is no space for prospective responsibility, since the fulfilment of the duties is sufficient for being absolved from any kind of responsibility. On the other hand, where the content and the solution of a problem or a task are only partly defined and hence a wide scope of available options must be judged and decided upon, the subject can live up to the expectations only by successfully solving the problem, being otherwise liable for compensation and/or reparation.

### The Subject of Responsibility and its Capabilities

The aim of the ascription of prospective responsibility has been determined above in the – as far as possible – prevention of harmful consequences and the provision for the case of their occurrence via the orientation of the decisions and actions of the responsible subject. The question then is which subject is most suitable for the achievement of this aim in regard to unforeseeable consequences of new technologies. Since the capabilities of the most suitable subject must be appropriate for the realisation of the two tasks, it appears that business companies, i.e. corporations are the ones best prepared to master them.

The capability needed for the prevention of harmful consequences is scientific and technological knowledge with a special focus on impact foresight and research. Since the consequences of technological innovation are in general not primarily due to activities of basic research but rather to the broad application and diffusion of materials, products and processes, engineering and applied sciences are of no less importance. The individuals who have this knowledge work in economic businesses and public institutions, but the relevant question is not where this knowledge is available but rather how it is used, in which direction the process of its enlargement is oriented and occasionally at which point stopped. On these questions the institutional settings can exert a determining influence. Although the major part of applied research is carried out in the laboratories of companies, it seems that most of the impact research and the early warning systems have their place in public institutions, that appear not only to operate in opposition to the economically driven corporations, but often to lack sufficient insight and control as well, especially since their limited influence on the problems mostly comes to late. Even worse, the scientists and engineers working for private industries, that could blow the whistle in case of relevant risks and dangers, renounce to do so because of the possible negative repercussions on themselves and their companies.

It seems that as far as uncertain or hypothetical effects are concerned corporations are not particularly interested in prevention, although they dispose of a significant part of the therefore relevant knowledge. The reason for this lack of interest is that they are not liable and therefore neither responsible for impact research nor willing to bear the costs of it. Evidently there exists a conflict of interests between the minimisation of costs and the improvement of prevention. Of course this is not the case for the kind of consequences of technologies the companies are liable for in base of the existing laws, which, by the way, to a certain extent are insurable and therefore usually covered with sufficient policies. The conflict of interests, however, can be solved by putting on the corporations the liability for unforeseeable impacts too. For a business company the indispensable condition of its existence is the achievement and maintenance of the long-term profitability. Every kind of responsibility which does not affect the economic situation of a firm is going to be neglected in periods of high cost pressure. For this reason if responsibility has to become a not disregardable factor in the organisational decision process it has to be translatable in financial terms and hence has to be brought in in the form of liability.

Liability will change both the relationship within the organisation between itself and the individuals working therein as well as the external relationship between the company and the public institutions, reducing in both cases the potential of conflictive interests. If the firm is going to face costs for repair payments, every effort made to reduce the risk of such payments is – within reasonable limits – justified by economic rationality. Thus the whistle blowing within the firm is no longer perceived as going against the firms economic interest, but rather as supporting them. And external warning expertise from other institutions might even be searched and paid for in order to reduce the risk of high liability costs.

For the second task connected to prospective responsibility the subject must be capable of providing financial means for compensation in the case some harmful consequences occur despite all preventive measures. In this regard liability allows to extract from the reason, which the firm – after having carefully investigated all the possible impacts of a new material, product or process at the end yet – decides to take the residual hazard for, namely from the economic profit, that is going to be earned by the application of the new technology, the means for providing for the case that damages occur by putting aside part of the profit as reserves for possible future repair payments. Since unforeseeable conse-

quences are by definition not insurable, the liable corporations perforce have to bear the economic burden themselves.

The accumulation of reserves can be realised only by demanding higher prices for the product sold. The connection between higher prices and the accumulation of reserves has, beneath strengthening the capacity of the corporation to meet possible future claims, additional desirable effects. On the one side the greater the success of the new technology is, and hence the greater its diffusion and therefore also the possible range of harmful consequences, the higher are also the earnings and the reserves accrued. On the other side, higher prices may hinder the market success of new products and thus slow down the technological innovation process, but this seemingly negative effect is only the opposite side of the higher level of security and is well accepted in the general economic practise. It is rather preferable to give via higher prices the information about and, through liability, also some sort of insurance against higher risks, than to mask out the risk and contemporarily pass it on to society.

Albeit so far the two capabilities of knowledge and of financial means have been associated to the two tasks of prevention and provision, it has to be stressed that also in the case, that harmful consequences occur, not only financial compensation but knowledge as well can play an important role for concrete measures of restoration: not only for sanifying the damage but also for finding alternative solutions for the purpose or need the by now renounced technology has served so far.

Recapitulating the argumentation can be seen as an attempt to demonstrate and justify that responsibility for unknown consequences can be ascribed and that institutions can and in this case corporations should assume this responsibility.

Dott. Rupert Leitner is member of the staff of the Europäische Akademie and coordinator of the project group "European Social Policy".

## Working Groups

### Environmental Noise

The project group invited Dr. Henk Miedema (TNO Delft) to discuss a paper on its recent progress meeting on 13 September 2004. The paper on "Annoyance caused by environmental noise" focused on empirical based relationships between annoyance and exposure as well as on the role of other factors, like source-specific fears or individual noise sensitivities. Therefore, annoyance from aircraft noise might result in higher levels than those from car traffic, even if the physical loads were in the same

order. Concerning the problem to estimate noise annoyance in the practise (prospective noise mapping) Dr. Miedema highlighted the necessity to model the effects of environmental noise from multiple sources. He recommends to calculate cumulative noise annoyances by an annoyance equivalents model, which predicts elevated but non-additive sum-effects of mixed noise loads. The results of Dr. Miedema's expertise will be integrated into the respective sections of the future study report. Moreover, the members of the project group discussed numerous internal papers on: historical reflections of noise acceptance, noise-induced communication disturbances, calculation of emissions from traffic noise, principles of standard setting and on respective weighing problems on levels of the German legislative and executive.

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### Presentation of Climate Study "Specification of Art. 2 UNFCCC"

On 23 September 2004 Professor G. Klepper (Kiel), Dr. S. Lingner (Bad Neuenahr-Ahrweiler) and Professor K. Ott (Greifswald) presented the results of the final report "Reasoning Goals of Climate Protection – Specification of Art. 2 UNFCCC" on invitation of the environmental and bio-political section of the Federal Foreign Office (Auswärtiges Amt) in Berlin. The study – which was coordinated by the Europäische Akademie on behalf of the Federal Environmental Agency (UBA) – was discussed among 40 experts from science, economy and politics as well as from NGOs.

The main focus was on the advisory role of ethics for climate politics in general and more specific, the thesis that most ethical theories to the climate problem would – in the end – argue for relatively low stabilisation levels of climate gases. The recent reluctance of the Parties to the Climate Convention to specify its ultimate goal might be possibly surmounted if the EU were successful in putting the issue of climate and equity on the agenda: This would be probably interesting for most developing and transitional countries, thus becoming a tip in the scales in future negotiation processes.

The most recent initiatives of Russian authorities to ratify the Kyoto-Protocol may give reason for some optimism concerning the feasibility of the above mentioned strategy.

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## News

### Workshop and Symposium "Ethik der Lebendorganspende"

The Akademie der Wissenschaften und der Literatur, Mainz, organised a workshop on 10 September and a symposium on 11 September 2004 on "Ethics of Live Organ Donation". On part of the Europäische Akademie Professor Dr. Dr. h.c. C. F. Gethmann gave a talk on "Utilitarian principles in live organ donation" and Dr. Margret Engelhard participated at the workshop and the symposium. Gethmann argued that persons do not own their Leib but they are their Leib and have therefore only the right to interfere in cases of high ethical values that could be gained, such in the case of live organ donation for relatives. It was supported by a majority of the participants including surgeons, lawyers, philosophers, politicians and representatives of patients, that live organ donations should be restricted to relatives, but that the possibilities for cross-over donations should be broadened. Furthermore, it was demanded to introduce a donor advocate, a central register for kidney organ donation as it already exists for live liver donation and to improve insurance's for live organ donors.

### Autumn Conference 2004

This year's autumn conference "Bioethics in Germany and Poland. Tradition and Controversies" was conducted as a joint conference of the Europäische Akademie and the Chair of Ethics of the University of Łódź in Poland which hosted the conference from 26 to 28 September 2004. In his capacity as the prorector of the University of Łódź Professor Dr. Piotr Daranowski stated during the opening ceremony, that this conference was held to support recreating a traditional region of European research and to afresh the discourse between German and Polish scientists which together with the discourse with Jewish and Russian scientists has a long tradition in Łódź. In four sessions and a panel discussion scientists from Austria, Germany, France and Poland discussed about the different roles academic and practical bioethics should have especially in Poland and about the following selected bioethical topics:

The first session about "Euthanasia" was opened with a lecture by Professor Dr. Dieter Birnbacher, Universität Düsseldorf, who pointed out under which circumstances terminal sedation can be classified as euthanasia and that in these cases the patients' consent has to be ensured. Professor Dr. Jacek Hołowka, Warsaw University, analysed arguments typically used by defenders of natural death and defenders of voluntary death. He called into question, if mercy killing has always to be judged worse than assisted death. In the next session about "The right to live – The right to

die" Professor Dr. Barbara Chyrowicz, Catholic University of Lublin, argued that in situations of moral uncertainty alternatives in which we are morally certain should be favoured. Thereafter, Dr. Heinrich Gantaler, Universität Salzburg, presented a logical analysis of the two different positions: the qualified doctrine of sanctity of life and the strong and weak liberal view. In the third session about the "Ethical problems of medicine" Professor Dr. Alicja Przyluska-Fiszler, Warsaw University, reviewed the debate on embryonic stem-cells in Poland and stated how bioethic research should position itself in such discourses. Afterwards the biologist Dr. Margret Engelhard, Europäische Akademie Bad Neuenahr-Ahrweiler, presented a novel technique of drug production that is referred to as "Pharming" and proposed an ethical debate on this topic. In the last session Professor Dr. Michael Quante, Universität Duisburg-Essen, and Professor Dr. Piotr Morciniec, University of Opoln, debated on the problem of "Incentives for organ donation". Quante ruled out general conceptual arguments for and against incentives for organ donation, but opposed to the introduction of incentives for organ donation, since this would add the logic of trading to the Personen-Leib-relation which might harm it and should not be given up without urge. Morciniec argued that incentives in organ donation would – as in prostitution – immorally instrumentalize the body, might lead to crawling out effects in post mortal organ donation and could discriminate low educated and poor parts of the population.

This conference has revealed the arising strength of bioethic research in Poland and the value such intercommunications can bring along for bioethic research in Europe.

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#### NTA1 – First Conference of the Network TA

The conference "Technik in einer fragilen Welt. Die Rolle der Technikfolgenabschätzung" will take place in Berlin from 24 to 26 November 2004 and is organised by the Institut für Technikfolgenabschätzung und

Systemanalyse (ITAS, Forschungszentrum Karlsruhe) in cooperation with the Universität Bielefeld and Universität Stuttgart and with support from the Federal Ministry of Education and Research (Bundesministerium für Bildung und Forschung, BMBF). On part of the Europäische Akademie, Dr. Gerd Hanekamp, Dr. Stephan Lingner and Dr. Thorsten Galert will participate with a lecture in the conference. Furthermore, Professor Dr. Dr. h.c. Carl Friedrich Gethmann is member of the Advisory Board of the Network TA that is currently being constituted.

#### Publications

Gerd Hanekamp

„Kulturalistische Unternehmensethik. Begründung und Anwendung“, in: Friesen H, Berr K: *Angewandte Ethik im Spannungsfeld von Begründung und Anwendung*. Peter Lang, Frankfurt a.M., 2004, pp. 257–273  
Felix Thiele

"Bioethics. Its foundation and its application in political decision-making", in: Machamer P, Wolters G (eds.): *Science, Values and Objectivity*. Proceedings of the 6th Pittsburgh-Konstanz Colloquium in the Philosophy of Science, Pittsburgh University Press, Pittsburgh, 2004, pp. 256–274

#### Lectures

Thorsten Galert

20.9.04 „Eine wahrnehmungstheoretische Schmerzdefinition“, Symposiumsvortrag, 123. Versammlung der Gesellschaft Deutscher Naturforscher und Ärzte (GDNA) „Raum – Zeit – Materie“ 18. – 21.9.04, Passau

Carl Friedrich Gethmann

27.9.04 „Wissen und Macht“: *Academia VIII*. Plenarvortrag, Deutsch-Estnische Akademische Woche, Universität Tartu

27.9.04 „Wissenschaft und Gesellschaft“: *Academia VIII*. Seminarvortrag, Deutsch-Estnische Akademische Woche, Universität Tartu

21.10.04 „Wissenschaftsethos und Verantwortung des Wissenschaftlers“, Vorlesungsreihe anlässlich des 125. Geburtstages von Max von Laue (Förderkreis Wirtschaft und Wissenschaft in der Hochschulregion Koblenz e.V.), Koblenz

#### Personalities



Reinhard Merkel studied law and literary art at the universities of Bochum, Heidelberg and Munich. He passed his 1st and 2nd state examination in Munich and became scientific staff member of the Max-Planck-Institut für internationales Recht and assistant at the Institut für Rechtsphilosophie, both in Munich. From 1988 to 1990 Merkel was editor of the feuilleton of the weekly newspaper "Die Zeit" and was awarded in 1991 by the Jean-Amery-Prize for essayistic. In 1993 he was conferred a Dr. jur. at the Universität München and in 1997, he qualified as a university lecturer at the Universität Frankfurt/Main.

Since 2000 Merkel is professor for criminal law and philosophy of law at the Universität Hamburg. In 1996 his work "Strafrecht und Satire im Werk von Karl Kraus" was considered as one of the best "juridical books of the year".

His areas of research comprise doctrinal of criminal law, basic research of philosophy of law, ethics of law, law and ethics in medicines and political philosophy and criminal law of nations. Furthermore, Professor Merkel is author of numerous publications and essays concerning criminal law, law of nations and medical ethics. Since December 2001 he is member of the board of trustees of the Max-Planck-Institut für medizinische Forschung and since December 2003 member of the Enquete-Kommission "Law and Ethics of the Modern Medicines" of the Deutsche Bundestag.

Since September 2004 Professor Merkel is Chairman of the Europäische Akademie's project group "Intervening in the Psyche. Novel Possibilities and Social Challenges".

#### Publisher:

Europäische Akademie zur Erforschung von Folgen wissenschaftlich-technischer Entwicklungen  
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#### Print:

Warlich Druck Ahrweiler GmbH, Bad Neuenahr-Ahrweiler  
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.