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. 55 (April 2005)

Editorial

Scientific communication and cooperation is considered as a central aim and obligation of the Europäische Akademie. Among the several options, various avenues of cooperation have been pursued so far, such as the academy's most recent Research Report. They encompass numerous different ways to exchange knowledge, already existing or just generated, between the academy, its members and other relevant institutions, depending upon the specific aims and needs of the respective partners or addressees.

Apart from the research tasks of the Europäische Akademie, the "demand market" for corresponding academic teaching has been realized and targeted, too. Accordingly, and since its beginnings, the academy encouraged its staff members to hold lectures or seminars in order to strengthen the transfer of their personal knowledge to students from relevant faculties. Meanwhile, six academy employees conducted corresponding curricula for several terms or even on a regular basis: Among them, Professor Dr. Dr. h.c. C.F. Gethmann, who holds a chair for "Applied Ethics" at the Universität Duisburg-Essen. Dr. S. Lingner, who gives lectures on "Ecology" at the Universität Koblenz and Dr. F. Thiele, who is member of the faculty of the newly established study course "Medical Ethics", which was already mentioned in the last issue. In view of the relevance of the specific topics with respect to the academy's work, they may also add value and meaning to the results of the Europäische Akademie.

SL

Focus

On the Use of Willingness-to-pay Studies in Health

Peter Zweifel

Willingness-to-pay (WTP) studies occupy a particularly important place in health care. Policy makers, knowing that their decisions affect the chances of well-being and survival of many individuals, sense that they ultimately are valuing human lives. However, putting a value on human life is such a contentious issue that current health policy is formulated without reference to it. This has the unfortunate consequence that questions such as, "Is it worthwhile to include this new drug in the country's health insurance benefit package?", or "Should public resources be spent on subsidizing hospitals rather than on schools?" cannot be answered in a consistent way. Evidence with regard to WTP holds the promise of remedying this situation. WTP is designed to elicit the preferences of consumers and voters, serving to increase the degree of rationality in policy decisions of e.g. insurers and politicians.

The theoretical basis of WTP as applied to health is that individuals can influence their probability to be in good health in the future. Therefore, they subjectively trade off this probability against other objectives such as consumption. In figure 1, so-called indifference curves are drawn, such that indifference curve I_3 is more highly valued then I_2, which in turn dominates I_1. Along I_2, situation A, with high probability of being healthy but low consumption, is judged equivalent to situation B, characterized by a (slightly) lower probability of being healthy combined with (quite a bit) more consumption in return. Indifference curves are drawn with a steep slope, implying that a (small) sacrifice of probability of good health ('health chances') must be compensated by a considerable gain in consumption. Such trade-offs occur daily; e.g. enjoying an opulent meal knowing full well that this entails a small reduction of future health chances.

The second element of figure 1 is a boundary that indicates that the individual cannot reach arbitrarily high levels of consumption and health chances at the same time. Interestingly, starting from the origin, this boundary first slopes upward. This says that more consumption and better changes of health can be simultaneously achieved at first. This makes sense because a higher chance of being healthy means more healthy days, which can be used for work, hence income generation, hence consumption. However, the curve does reach a maximum and then slopes downward because when pushing for ever higher health chances, one has to sacrifice more and more time (jogging, exercise, searching for expensive health food), which limits consumption possibilities.

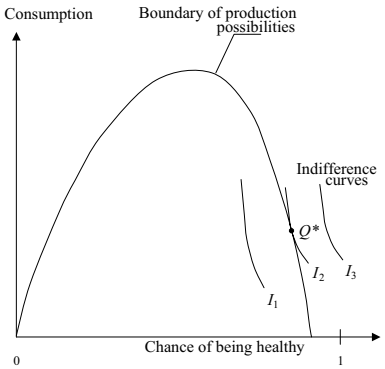

Figure 1: Preferences and possibilities in the production of health chances

A rational individual would want to obtain the best possible situation, viz. point Q^* in figure 1, where the highest-valued indifference curve is attained.

The economic model in fact predicts that individuals 'choose' their probability of being healthy. This view has been challenged by both medical sociologists and physicians. The medical profession in particular often claims that "people do not care about their health as long as they are healthy but are willing to sacrifice everything once they are sick". This suggests that people's preferences are unstable, constituting evidence of irrationality when it comes to health behavior.

This claim need to be true. In figure 2, note that preferences are kept stable in a double sense. First, the indifference curves do not change shape between the 'healthy' and the 'sick' state. Second, their slope remains constant along the ray from points of origin, implying that the relative importance of consumption and health chances does not change when the individual gets better off. However, the 'production possibility' boundary changes. When healthy, the individual's boundary is given exactly as in figure 1. However, once sick, the individual is not as productive, especially with regard to attaining a certain future health chance.

Now compare the two optimum points. Since the slope of the indifference curve is constant along the ray linking the origin 0 and *Q** by assumption, the new optimum *Q*** necessarily lies where the indifference curve runs steeper. However, the steeper the indifference curve, the greater must be the gain in terms of consumption necessary to compensate the individual for a (small) reduction in health chances. In other words, health chances are valued more highly in the 'sick' than in the 'healthy' state – but not because of unstable preferences but because the individual is a less efficient 'producer of health' in the 'sick state'.

Thus, the argument that individuals' preferences with regard to health and health care are too fickle to provide a basis for policy making need not be accepted. This is not to say that measuring true WTP for health is without problems. There are at least two sources of difficulties. First, the slope of the boundary is biased because of insurance coverage. With a coinsurance rate of 10 percent (as applies to outpatient medical care in Switzerland), the sacrifice of one Swiss franc's worth of consumption in effect buys ten times as much medical care as without insurance coverage. Thus, to a 'sick' individual the boundary looks ten times flatter than in figure 1. The second difficulty is that as soon as individuals have recourse to a provider of healthcare services, a failure of the physician-patient relationship is likely to occur, resulting in an outcome even worse than *Q*** in figure 2.

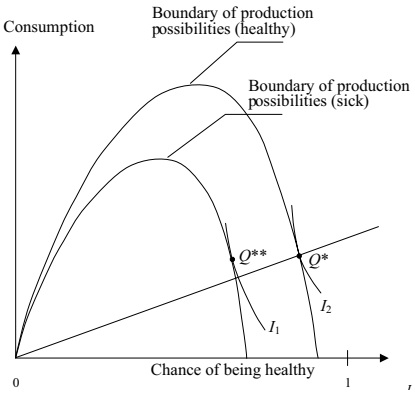

Figure 2: State-dependence in the production of healthy time

In decision situations characterized by a marked lack of information, one often relies on the expertise of a specialized agent. This raises the issue of how to ensure that the agent, while pursuing his or her own objectives, can be made to also advance the interests of the uninformed principal. The solution to this principal-agent problem is for the principal to devise a payment scheme that provides the appropriate incentives to the agent. Basically, the optimal payment function has the following structure:

Total payment = Fixed component + Multiplier * Effectiveness of agent

The fixed component is necessary to make the agent enter the contract at all; it reflects the so-called participation constraint that the uninformed principal must satisfy. The multiplier reflects the consequences of the provider's failure to exert the right amount of (costly, unobservable) effort on the patient's health; it reflects the so-called incentive compatibility constraint. The effectiveness parameter is equal to the increased likelihood of a favorable outcome due to additional effort on the part of the agent.

For example, if a surgeon has attractive alternatives available besides the contract with the patient, then the fixed component cannot be too low. In addition, since a slight negligence may result in a failure of the surgery and even death, the multiplier has a high value, too. Finally, a little bit of extra effort on the part of the surgeon can make a favorable outcome very much more likely. All in all, paying a surgeon a very high amount, which largely amounts to fee-for-service, is in the patient's best interest.

However, estimating the components of optimal payment is a very difficult task for the prospective patient. In particular, while individuals with a chronic condition may be able to gauge the effectiveness of a healthcare provider, few are capable of this in the case of unfamiliar diseases or rare interventions. During full anesthesia e.g., the patient cannot observe the surgeon's effort at all! Even under less incapacitating circumstances, the asymmetry of information frequently is too severe to permit the uninformed patient to identify the optimal payment function. However, failure to do so results in suboptimal treatment outcomes since the condition inducing optimal effort is violated. The prospective patient's attempt to control the behavior of the physician through incentive-compatible payment thus frequently fails.

This specter of market failure creates a market for what shall be called complementary agents. Complementary agents (CA) can offer to remedy the physician-patient relationship by (a) providing the information necessary to estimate providers' effectiveness, or (b) negotiating the payment function on behalf of the prospective patient. More generally, this task includes selecting those providers of health care who are willing to conclude contracts containing the incentives that are optimal for a particular type of insured person. In the following, discussion will be limited to the two polar types of CA, viz. competitive health insurers and the government. Other CA include medical associations, employers, and national health insurance.

Competitive health insurers and governments will make quite different use of WTP information, with differing implications for efficiency. In the following, it is assumed that health insurers have the right to engage in selective contracting. Selective contracting, i.e., they want to include certain physicians, hospitals, and pharmaceutical suppliers while excluding others. Due to the pressure of competition, the criteria for selection must be those that the insured individuals would apply if they had the necessary information. Eligible providers of service must therefore exhibit a favorable benefit-cost ratio (expressed by insured individuals' WTP), which they achieve only if willing to operate under the appropriate incentives defined in the payment formula above.

Turning to the government as the CA, one notes that it usually tries to keep its outlay on health care at a fixed percentage of its budget. Of course, this amounts to ignoring the (possibly changing) WTP of individuals. All in all, these considerations lead to the expectation that evidence with regard to WTP is more likely to contribute to efficiency in health care if used by competing health insurers than by the government.

Summary and Conclusion

Measuring the willingness-to-pay (WTP) of the insured with regard to health care is an important step towards consumer empowerment. However, relying on individuals' preferences can only be justified to the extent that these preferences are stable in the face of illness. The present contribu-

tion therefore first seeks to show that the often-decried behavior, "Do not spend a dime on health as long as healthy, but spend your entire fortune when sick" need not be the expression of unstable preferences. Rather, this may be the consequence of a state-dependent boundary of possibilities when the individual is seen as a producer of his or her probability of being in good health in the future on the one hand and consumption services on the other.

However, in the sick state individuals rely on a health care provider as a rule. The physician-patient relationship in particular can be cast in a principal-agent framework, where the uninformed principal controls the unobservable effort of the agent through the judicious choice of a payment function. It is argued that this solution usually breaks down when it comes to medical care because the informational asymmetry is so marked as to prevent identification of the optimal payment function by the prospective patient. This threat of a market failure calls for complementary agents, who typically negotiate a payment function on behalf of the consumer.

The two cases of complementary agents considered here are competitive health insurers and the government. Under the pressure of competition for enrollees, insurers want to use information about willingness-to-pay to structure their benefits packages, excluding providers and treatments for which there is little or no willingness-to-pay. Information about this quantity in the hands of insurers thus serves to increase efficiency in health care. By way of contrast, a democratic government, constrained to gain pivotal votes, has to take physicians' interests into due account, implying that the outcome of fee negotiations cannot only reflect WTP for health and health care regardless of the amount of information gathered.

In summary, therefore, information about willingness-to-pay is crucial in patching up the deficiencies in the physician-patient relationship. Its contribution to improving efficiency has been found to be greater if competitive insurers are in charge, serving as complementary agents – as long as they are indeed exposed to competition.

Professor Dr. Peter Zweifel is full professor of economics at the University of Zurich. This paper is an abstract from the Essay "On the wse of willingness-to-pay studies in health", in: *Swiss Journal of Economics and Statistics*, Vol. 137 (2001), 11–25

Working Groups

Intervening in the Psyche. Novel Possibilities as Social Challenges

The project group held its kick-off-meeting on the premises of the Representation of the State Rhineland-Palatinate in Brussels on 7/8 April 2005. Five invited speakers covered the whole range of the project group's research topics. The meeting got started with a talk by Professor Dr. Jörg Fegert on "Development and Hindrances in Psychopharmacological Research for the Benefit of Children and Adolescents". Professor Fegert who is Medical Director of the Department of Child and Adolescent Psychiatry and Psychotherapy at the Universität Ulm highlighted the fact that about 70 % of psychopharmaceutical drugs prescribed for children are administered off-label, meaning that these drugs are actually licensed for use by adults without ever having been subjected to clinical studies on children. The main reason for this deplorable state of affairs is that most of the funding for clinical trials is expended by the pharmaceutical industry, for which additional pediatric studies just are not profitable enough. Ethical regulations that serve to protect minor research subjects further complicate research in this field by bringing about impediments to study design. For instance, the ban on administering placebos to subjects who are incapable of giving their informed consent makes it difficult to establish reliable and safe treatments.

Professor Fegert's talk has been featured most prominently here as his happily welcomed decision to join the project group marks its final completion. His talk was followed by Cambridge Professor Dr. Barbara Sahakian's elaborate exposition on "Neuroethical Issues in Cognitive Enhancement and Neuroimaging". Professor Dr. Michael Quante from the Universität Duisburg-Essen concluded the first day of the workshop by a philosophical presentation entitled "Personal Identity between Survival and Integrity". On the second day, Dr. Thomas Stieglitz, Professor for Biomedical Microtechnology at the Institute of Microsystem Technology, which is affiliated to the Universität Freiburg, promoted the project group's ongoing debate on Neuroprosthetics by shedding light on the technical realization of interfaces to the central nervous system. Last but not least, Dr. Roger Barker, leader of a research group at the Cambridge Centre for Brain Repair, offered a comprehensive survey of using "Neural Transplants in Parkinson's Disease". It is currently planned to publish the proceedings of this workshop in a special issue of *Poiesis & Praxis*.

Project Coordinator:
Dr. Thorsten Galert
Phone +49 (0) 26 41 – 973 307
thorsten.galert@dlr.de

Conferences

Autunm Conference 2005: Business Ethics of Innovation

The annual autumn conference entitled "Business Ethics of Innovation" of the Europäische Akademie will take place from 11 to 13 September in Engers, near Koblenz.

Firms that operate in a market economy depend upon innovations in order to achieve competitive advantages that sustainably secure their survival. Business ethics evaluates the decisional freedom involved in the process of attaining innovations. The conference will assess general questions of how business ethics can help to structure innovations and specifically discuss pharmaceutical innovations as well as innovations in the IT sector.

The conference is supposed to

- draw attention to a particular area of interdisciplinary research where business ethics competencies are necessary but not yet involved on a regular basis,
- specify the role of business ethics in the assessment of innovations and discuss example areas, and
- facilitate an interdisciplinary discussion concerning different fields of innovation that allows for mutual learning processes.

This discussion could be a first step towards a general concept to assess and evaluate innovations that takes into account availabilities and specific decisional freedom of actors as well as the consequences of changing regulatory frameworks.

For further information please contact:

Dr. Gerd Hanekamp
gerd.hanekamp@dlr.de
Dipl.-Päd. Sevim Kiliç
sevim.kilic@dlr.de

News

Standing Committee "European Policy" of the CDU Ahrweiler

On 11 March, the standing committee "European Policy" of the CDU Ahrweiler visited the Europäische Akademie. Dr. Werner Langen, member of the European Parliament, was among the guests, who were informed about the work of the academy, especially the currently running projects "Incentives for Organ Donation" and "European Social Policy".

Parliamentary Committee for Traffic and Urban Affairs

On 4 April 2005, political representatives of the German Bundestag, N. Königshofen (MdB), Essen and W.J. Sebastian (MdB),

Dernau/Ahr, visited the Europäische Akademie. Among their other political responsibilities, both are members of the parliamentary committee for traffic and urban affairs. Professor Dr. Dr. h.c. C.F. Gethmann introduced the academy's mission, aims and working method. Dr. S. Lingner and Dr. M. Engelhard presented the central issues of their current projects on "Environmental Noise" resp. on "Incentives for Organ Donation". The subsequent discussion focused on the current review of the national treaty on aircraft noise and on concrete options to investigate and overcome obstacles to organ donation.

Europäische Akademie releases Study on Euthanasia

The Europäische Akademie has published a (German-language) study on euthanasia entitled "Active and passive euthanasia. Medical, jurisprudential and philosophical aspects". Active euthanasia is still one of the most vigorously disputed problems of medical ethics – as it can be seen in the current discussion on euthanasia and the artificial maintenance of life. Since the protection of life takes a central position in the European cultural tradition as well as in the medical ethos, the study takes up the question whether active euthanasia could be morally acceptable at all and documents the course of the German discussion so far. The study refutes the assumption that a discussion of active euthanasia in Germany can be shunned. The fact that passive euthanasia in Germany is allowed under certain circumstances, while a demarcation from active euthanasia, however, remains difficult in practice, accentuates the demand for such a discussion.

The study is published at Fink-Verlag and can be ordered at www.fink.de.

Kreissparkassenvortrag

Im Rahmen der Kreissparkassenvorträge, die die Europäische Akademie in Zusammenarbeit mit der Kreissparkasse Ahrweiler regelmäßig veranstaltet, hielt Professor Dr. Gerhard Rechkemmer von der Technischen Universität München einen Vortrag zum Thema „Funktionelle Lebensmittel". Funktionelle Lebensmittel sollen eine, über den reinen Nährwertcharakter dieser Produkte hinausgehende, positive Wirkung auf unsere Gesundheit und das Wohlbefinden ausüben. Es soll sich hierbei um Produkte handeln, die in einer lebensmitteltypischen Form und nicht als Pillen, Tabletten oder Pulver, oder in einer anderen eher arzneimitteltypischen Form, angeboten werden. Eine rechtsverbindliche Definition für funktionelle Lebensmittel existiert bisher jedoch weder in Deutschland noch in Europa. Begünstigt durch die Zunahme von Erkrankungen (wie z.B. Herz-Kreislauf- und Krebserkrankungen und des krankhaften Übergewichts (Adipositas), bei denen die Ernährung eine wesentliche Rolle spielt, werden seit einigen Jahren zunehmend Lebensmittel mit gesundheitsbezogenen Aussagen angeboten. Hierzu gehören beispielsweise probiotische Milchprodukte zur „Stärkung der Abwehrkräfte" und pflanzensterolhaltige Margarinen zur „Senkung des Cholesterinwertes im Blut". Der Stellenwert solcher Produkte im Rahmen einer gesundheitsbewussten Ernährung und einem gesunden Lebensstil wird gegenwärtig intensiv diskutiert.

Lectures

Stephan Lingner

15.3.05 „Zukunftsforschung und Technikfolgenabschätzungen". Fachgespräch „Räumliche Auswirkungen der Virtualisierung". ARL, Frankfurt/Main

Publications

Carl Friedrich Gethmann

„Ist das Wahre das Ganze? Methodologische Probleme Integrierter Forschung", in: G. Wolters / A. Carrier (Hgg.), *Homo Sapiens und Homo Faber* (Festschrift für Jürgen Mittelstraß), Berlin 2005, 391– 404

„Partizipation als Modus sozialer Selbstorganisation. Einige kritische Fragen", in GAIA 14 (2005) Heft 1, 30–31

Felix Thiele

„Aktive und passive Sterbehilfe. Medizinische, rechtswissenschaftliche und philosophische Aspekte", Fink-Verlag, Paderborn 2005

Personalities

Michael Quante has studied philosophy and Germanistik (German language and literature studies) in Berlin and Münster, where he passed his 1. state examination in 1989 and was conferred a PhD in 1992. From 1993 to 1995 he was a fellow in the DFG (German research council) research project on "Ethical aspects of organ transplantation" and was awarded a habilitation scholarship from the DFG in 1995. From 1996 to 2001 Quante was scientific assistant at the department of philosophy of the Universität Münster and qualified as university lecturer in 2001. From 1993 to 2001 he was a permanent guest lecturer at the department of design of the Fachhochule Münster.

Since 2004 Quante has been professor for practical philosophy at the Universität Duisburg-Essen. His areas of research combine historical and systematic questions on the one hand and cover both practical and theoretical philosophy on the other hand. He has done research on German Idealism (especially G.W.F. Hegel), Philosophy of Mind (especially theory of action and personal identity), ethics, meta-ethics, social philosophy and biomedical ethics. Besides, he is the author of books on Hegel, the ethics of organ transplantation, personal identity and ethics. Furthermore, Since 2004 Quante has been co-editor of the journal "Ethical Theory and Moral Practice" and since 1996 member of the Akademie der Ethik in der Medizin (AEM).

Professor Dr. Michael Quante is a member of the project group "European Social Policy" of the Europäische Akademie.

Publisher: Europäische Akademie zur Erforschung von Folgen wissenschaftlich-technischer Entwicklungen Bad Neuenahr-Ahrweiler GmbH, Wilhelmstraße 56, D-53474 Bad Neuenahr-Ahrweiler
e-mail: europaeische.akademie@dlr.de, Internet: www.europaeische-akademie-aw.de

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

Editing: Sevim Kiliç, Dipl.-Päd., Phone +49 (0) 2641-973 313, Fax 973 320, sevim.kilic@dlr.de

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.