Status Report
2002-2005

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A. History of the Institution

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Founded in 1996, the Max Planck Project Group "Common Goods: Law, Politics and Economics" took up its activities in Bonn on 1 October 1997, when Professor Christoph Engel and his team of six lawyers and an economist commenced their research. Eight political scientists later joined the group, led by Professor Adrienne Héritier, who took up her full-time duties in the project group in February 1999.

The work of the project group had three main goals: It aimed to better understand common goods problems; it sought better solutions; it worked to understand the political processes of defining problems and choosing solutions. Here, the starting point for the projects headed by Prof. Engel consisted of practical common goods problems standing in need of solution. The considerably more encompassing project dealt with waste law and waste policies. A markedly smaller project concerned content control in the Internet. The projects headed by Prof. Héritier took the transformation of the nation-state into a multilevel system of governance as their starting point. They asked what this means for the provision of common goods.

In 2002, the project group was evaluated by an international and interdisciplinary committee. The committee recommended to transform the project group into a permanent institute, to be directed by Christoph Engel, Adrienne Héritier, and an economist, who was later to be nominated. Later in 2002, Adrienne Héritier accepted an offer for a joint chair at the European University Institute in Florence and at the postgraduate Robert Schumann Centre. She left the project group in 2003. In the same year, the Max Planck Society was facing a severe budget crisis. For the time being, it had to cancel all plans for extending the scope of institutes. Given this new restriction, the selection committee did not choose to replace Adrienne Héritier with another political scientist. It instead suggested the appointment of economist, Martin Hellwig. In 2003, the project group was formally transformed into a permanent institute. In 2004, Martin Hellwig became its co-director.

The shift from political science to economics entailed a new research program. It is laid out in this report.

B. The Overarching Framework

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Air, atmosphere, the ozone layer, climate, water, the world's oceans, land, quiet, normal radiation, landscape, fauna and flora, genetic diversity: The policy challenge of providing and distributing such natural resources was the impetus for the Max Planck Society's deliberations to establish a new research facility in the humanities section. However, even in the process of establishing the facility, it became clear that man-made goods also pose structurally related challenges. The protection of our cultural heritage, language, streets, energy networks, the liquidity of markets, the reliability of finance institutions, the stability of the finance system: All these pose very similar problems. This was the reason that the Max Planck Society did not establish an institute for environmental law or environmental policy, but deliberately founded a project group for research on collective goods.

The document on the founding of a research facility describes the problem that needs solved as follows: "While, on the one hand, these goods need protection, on the other hand, it is necessary for human life that they remain accessible and are used. This gives rise to a multilayered governance problem: of no slight significance here is an elementary distribution problem, indeed one both between groups or individuals and between states. The common – judicial – characteristic of the natural resources is that they can only to a limited extent be placed under the power of disposition of individual legal subjects. Even when property rights are established, the larger community has the responsibility to suitably proportion the maintenance and use of these goods and to suitably distribute the related costs and benefits. […] The research task of the project group will thus have a public policy orientation."

The multilayered governance problem mentioned in that document arises because collective goods always concern numerous people simultaneously, sometimes the community as a whole, including future generations. Were the dealings with collective goods, their provision and financing, left solely to the decentralized decisions of individuals, it is to be feared that the common dimension would be neglected; insofar, collective decision-making mechanisms are necessary. Paradigmatic for this view is the economic concept of non-excludable public goods. The individual, who merely attends to his own use of the public good, neglects the use that others draw from it, and insofar contributes less to the cost of providing this good than is socially desirable. To take one example, according to this argumentation schema, the dangers to the natural environment because of human activity, including the well-known "tragedy of the commons", arise because individuals give their own use of the environment priority over the maintenance of the environment, which, as a public good, benefits everyone.

The concept of collective goods is, however, more encompassing than the economic concept of public goods. It is in principle possible to make the use of the services of law, schooling, or even streets, excludable, but, because open access to these goods is thought superior, it is viewed as a constitutive element of the community. The use of other

goods, such as the services of the large networks of telecommunications and the post, the energy industry and the railways, is tied to the payment of user fees; here too, however, regulations on non-discriminatory access and the universality of services are to ensure that the communal dimension is accounted for. Finally, in a further class of cases, the concern is with the quality of the services and relations, which are in principle left to the decentralized decision-making of individuals in the markets; here, the communal interest, for example, in the reliability of financial transactions can aim to protect both the parties involved and the system, which can hardly function without reciprocal trust in one another.

The negative assertion that the community dimension will be neglected if the dealings with collective goods, their provision and financing, remain solely in the hands of decentralized decision-makers still gives us no positive content: It provides no indication of how the community dimension is to be properly dealt with, or which advantages and disadvantages are implicit in the various institutions and rules for dealing with collective goods. In principle, every system for dealing with collective goods faces the difficulty that the needed information is not readily available. Insofar as the assessment of the involved parties is relied upon, a dilemma arises: the individual has an incentive to downplay the value that the common good has for him if he expects that he will be required to pay for it, while he has an incentive to exaggerate the value that it has for him if he expects that it will not cost him anything. This dilemma also occurs for pure private goods, but it plays a subordinate role there if the good is provided in a competitive market, in which the individual has no power to influence prices. This mechanism is not available for common goods; the greater and more anonymous the involved community is, the greater the magnitude of the described dilemma.

There are no one-size-fits-all solutions for this dilemma. It is rather necessary to determine in detail which advantages and disadvantages the rules and institutions under discussion have for each of the various collective goods. Under consideration are governmental activities, i.e., political or administrative decision-making, market-based, contractual solutions, or arrangements based on individuals' decisions, yet under the influence of state determined norms about minimal standards, liability laws, etc. The relative advantages and disadvantages of the various alternatives depend on which characteristics the collective goods under discussion possess and what precisely determines the communal dimension of the good under question.

The institute combines basic research and practical applications, for one, by dealing with the theory of collective goods and their provision under diverse abstractly formulated general conditions, and, for another, by developing concrete proposals for the design of (legal and extra-legal) institutions for the provision of individual collective goods. This is of necessity an interdisciplinary endeavour. Economists are needed to understand and structure the allocation and incentive problems that arise. Political scientists are needed to understand the mechanisms of political decision-making used for these goods. And lawyers are needed to develop proposals for the design of rules and institutions in light of concrete legal norms, so that they fit the legal order. The selective reception of results of

the neighbouring disciplines is not enough. Especially in the analysis of concrete problems, it is important that all three disciplines are intensively engaged with one another. For example, the interplay between decentral market mechanisms and political decision-making mechanisms needs to be studied jointly by economists and political scientists. To judge the allocation effects of certain decisions of substantive law or procedural law, economists and legal scholars must work in collaboration.

C. Research Program

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C.I Public Goods and Welfare Economics

Direction: Prof. Martin Hellwig, Ph.D.

PostDocs

Dr. Hendrik Hakenes (Economics)
Dr. Felix Höffler (Economics)
Dr. Isabel Schnabel (Economics)

Doctoral Candidates

Felix Bierbrauer (Economics)
Ingolf Schwarz (Economics)

C.I.1 Summary Outline

A major part of our research effort is devoted to the development of an appropriate conceptual framework for the normative analysis of public goods provision. So far, this research has resulted in the development of an analytical framework that integrates the theory of public goods provision, the theory of indirect taxation and public-sector pricing, and the theory of direct taxation, three subdisciplines of normative public economics, which until now have by and large been kept separate. The integration makes it possible to address questions such as: Is it desirable to charge fees for access to excludable public goods? Should public goods provision be self-financing? Or is it desirable to use income taxes for public goods finance? What are the relative weights of allocative and distributive concerns in public goods provision and finance?

In the tradition of the theory of public goods provision, much of this research uses concepts and methods of the theory of abstract incentive mechanisms. This approach brings out the very essence of the information and incentive problems that are peculiar to public goods. Key findings are:

- The peculiarities of public as opposed to private goods are seen most clearly in a large economy with incomplete information about individual preferences in which each individual feels powerless to affect the level of public good provision. In this economy, provision of a non-excludable public good on a purely voluntary basis is infeasible. So is the provision of an excludable public good without charging user fees.
- When there are multiple excludable public goods and people are free to retrade private goods as well as admission tickets to excludable public goods, the problem of finding an optimal mechanism for voluntary provision in a large economy with incomplete information is equivalent to the Ramsey-Boiteux problem of finding optimal

public-sector prices under a government budget constraint. If people are not free to retrade, the Ramsey-Boiteux solution is dominated by one that provides for mixed bundling of excludable public goods.

- If income taxes, as well as admission fees, are available for public goods finance, they should be used, but, contrary to the influential proposal of Atkinson and Stiglitz (1976), a reliance on income taxation does not make admission fees superfluous.
- A utilitarian approach with inequality aversion indicates that admission fees, as well as income taxes, should reflect distributive concerns. If inequality aversion is large, admission fees on excludable public goods, as well as marginal income tax rates, should be strictly positive.

While providing for a certain advance in our understanding of allocation problems involving public goods, there are important gaps:

- In the large-economy models that have been studied, the problem of how much of a public good to provide is trivial because, with independence of valuations across participants, a law of large numbers ensures that the requisite aggregate information is known from the start. As yet, we do not have a convincing – and nontrivial! – formulation that provides a basis for seriously studying the problem of how much of a public good to provide when the economy is large.
- Like practically all of the existing literature in normative public economics, the research that we have done so far deals solely with the articulation of the demand and provision of finance for public goods, while neglecting the production side. Thus, in the Ramsey-Boiteux tradition, the cross-subsidization of a public good from another or from general taxes is generally desirable; the negative incentive effects of such cross-subsidization on the producers of the public goods are neglected. As yet, however, we do not have a conceptual framework for evaluating the tradeoff between these incentive effects and the benefits of cross-subsidization that underlie the existing results.
- Considerations of political economy have not been taken up. Whereas the available normative results call for disproportionately large financial contributions from surcharges on goods or activities where market responses are inelastic (e.g., gasoline taxes), politically, such surcharges tend to be those that generate the most violent resistance. As yet, we have no formal model to explain this observation, let alone a formulation that would allow for its integration into the general analysis of information and incentive problems associated with the provision of public goods.

Filling these gaps will be a major challenge for the future.

C.I.2 The Lack of an Encompassing Framework for Normative Public Economics

What precisely is special about public goods? The more we think about this question, the more elusive it seems to become. It is customary to define public goods by properties like non-rivalry in consumption or non-excludability. But then, the question is what these properties imply for the economic system: What precisely are their implications for the allocation of resources for public goods provision? What are their implications for the governance of the demand for and the production of public goods, for the respective roles of private individuals, community organizations, and the government in determining and financing public goods provision?

When Lindahl (1919) introduced the notion of a public good into economic analysis, he defined it by the property of non-rivalry in consumption: One person's enjoyment of a public good does not affect the pleasure (or displeasure) that any other person can draw from the public good. Thus, a result in basic science, a television program, or the peace-keeping effects of national defense are there to be enjoyed by all. Lindahl introduced the concept as part of a contractarian approach to the allocative activities of the state, drawing a parallel between the provision of a public good to consumers at "Lindahl prices" and the provision of private goods from producers to consumers through the market.

In what was to be the starting point for the modern literature on public goods, Samuelson (1954) relied on the same definition as Lindahl, but then, after giving conditions for the Pareto-efficient provision of public goods, he went on to argue, *against* the contractarian view, that a Pareto optimum cannot be implemented by a "decentralized spontaneous solution". In particular, he argued that there is nothing to be compared to the price mechanism which, under certain conditions, serves to implement efficient allocations of private goods. Whatever coordination mechanism is used is unlike a price mechanism; moreover, it is unclear whether there can be any mechanism at all which induces people to reveal their preferences so as to provide the overall system with the information it needs in order to choose appropriate levels of public goods provision.

The subsequent literature noted that Samuelson's discussion of incentive issues relied on the absence of exclusion, as well as the property of non-rivalry in consumption. Incentive problems would be mitigated if people who want to enjoy the benefits of a public good can be induced to pay for admission, knowing that, if they fail to pay, they will be excluded. Thus, under pay TV, the signals transmitting a television program are scrambled, and one gets to enjoy the program only if one pays to have them unscrambled. One branch of the literature proceeded to distinguish "pure" public goods, exhibiting both non-excludability and non-rivalry, from "club goods", which are excludable while exhibiting non-rivalry. In this terminology, national defence or basic science are pure public goods, pay TV, a neighbourhood swimming pool, or a railway system are club goods. For club goods, Samuelson's arguments against the viability of "decentralized spontaneous solutions" lose some of their force. Voluntary private provision may well be feasible;

see, e.g., Buchanan and Tullock (1962). By contrast, the provision of pure public goods must rely on coercion; see, e.g., Olson (1965).

In response to such criticism, Samuelson himself (1958, 1969) argued that, from the perspective of welfare economics, excludability is irrelevant because, even when it is possible to exclude people from the enjoyment of a public good that has been provided, it is inefficient to do so. With non-rivalry in consumption, the admission of another person to the enjoyment of the public good involves no social cost; such admission should therefore be granted whenever the person in question draws a benefit from it.

Any assessment of these matters is made difficult by the fact that these early discussions involve multiple issues without clearly distinguishing between them. Among the issues raised are the following:

- What is an appropriate criterion for determining the resources that a society devotes to the provision of a public good? Does the incentive problem of preference revelation for public goods necessarily prevent efficient public goods provision?
- What is an appropriate institutional framework for determining the amount of public goods provision? Is it necessary or even appropriate to rely on the state? Or is it possible to rely on private contracting?
- Can public goods provision be properly financed on a contractual basis? Or is it necessary to rely on the government's power of taxation, i.e., on coercion? What are the respective roles of general taxation, voluntary contributions, and user fees in public goods finance?
- What is a suitable mode of governance for the production and for the coordination of production and demand? Should these matters be kept in the public sector? Or should production be assigned to private firms, with coordination resulting from market interaction between these firms and whoever is responsible for organizing demand?

Going beyond this discussion, one can also ask how much decentralization is feasible or desirable and what is the role of the number of people concerned by a given public good. If we think about club goods, presumably it makes a difference whether we are dealing with a neighbourhood swimming pool or with a national railway system.

In various guises, these questions are central to recent and future policy discussions. Over the past few decades, in Germany, as in many other countries, public goods provision from general taxation has been squeezed between the political pressure to use tax revenues for redistribution and the political pressure to reduce taxes altogether. The consequences of this squeeze have become visible in many areas, from road maintenance and public transportation to education and basic science. One response has been to look for new sources of funding, such as user charges for roads or tuition fees for universities. Another response has been to call for the privatization of public-sector production, in

telecommunications and the postal system, or in local public transport and the national railway system.

Public discussion of these matters tends to be piecemeal, each participant picking one argument, without much of an attempt to put the different arguments into an encompassing framework in order to determine their relative weights. One may be tempted to interpret this weakness of public discussion as a natural feature of politicking. However, the lack of an encompassing framework for discussion is also a reflection of the state of economics as a discipline; it reflects, in particular, the compartmentalization of public economics into normative public economics, on the one hand, and positive political economy, on the other, and then, within normative public economics, the theory of public goods, the theory of indirect taxation and public-sector pricing, and the theory of redistributive income taxation. Relations between these different subdisciplines have been underresearched; conflicts between their findings in areas of overlap have been insufficiently addressed.[1]

As an example, consider the discussion about tuition fees for universities. Leaving aside the problem of congestion, which is of course relevant in practice, one can think of a university's course offerings as an excludable public good. Attendance and certification can be made contingent upon the payment of tuition fees. An adherent of the theory of club goods might therefore argue that this particular public good could and, in principle, should be financed by such fees. Samuelson's argument, in contrast, suggests that, at least in the absence of congestion, the imposition of tuition fees is undesirable because exclusion is inefficient.

From the perspective of the Ramsey-Boiteux theory of indirect taxation and public-sector pricing, Samuelson's argument in turn would be held to be invalid because it neglects the fact that the government itself has to meet a budget constraint. According to this theory, when the budget constraint of the government is taken into account, *every* means of raising funds for government finance should be used, user fees for excludable public goods, as well as taxes. The efficiency loss from fees, which was criticized by Samuelson, is more than outweighed by the efficiency gains that are obtained when the government's reliance on other distortionary financing instruments is reduced. However, depending on demand elasticities, the Ramsey-Boiteux theory, in contrast to the club approach, would allow for the possibility that universities might not be wholly financed by tuition fees; some cross-subsidization from gasoline taxes or from profits in electricity provision might be appropriate.

The Ramsey-Boiteux theory itself has been criticized by Atkinson and Stiglitz (1976) for failing to take proper account of the possibility of using nondistortionary means of government finance or of using income taxation as a means of government finance, which

1 Exceptions are the work of Atkinson and Stiglitz (1976) on direct versus indirect taxation and the work of Boadway and Keen (1993) on public goods and income taxation. However, in these papers, people's preferences for private and public goods are common knowledge, and the associated allocation problems are degenerate.

distorts labour-leisure choices without affecting choices between different consumer goods. An adaptation of their analysis would suggest that tuition fees should be used if and only if there is a correlation between the demand for higher education and income that makes it possible to use tuition fees in order to better achieve the redistributive objectives of income taxation.

By looking at different subdisciplines, one thus gets four different answers to the "simple" question of what is the role of tuition fees for universities. As yet, the discussion concerns only the financing side. The governance side raises additional questions: What are the incentive effects on the universities themselves of requiring them cover their own costs, without cross-subsidization from gasoline taxes or income taxes? And what are the effects of allowing the specifications of the good in question, here the types of course offerings and certifications, to be developed by "decentralized spontaneous solutions" as opposed to government regulation? Positive political economy contains some answers to such questions, but, as yet, they have not been integrated into normative public economics.

More generally, a conceptual framework for integrating the different subdisciplines has so far been lacking. We have recently made some progress in this direction, moving, in particular, towards an integration of the different theories concerning the financing side of the public sector. However, the integration of the governance side will require a major new research effort.

In the following, Section C.I.3 gives an indication of where we stand in the theory of "pure" public goods, i.e., goods that exhibit non-excludability as well as non-rivalry. Section C.I.4 discusses excludable public goods and indicates how the theory of public goods provision can be integrated with the Ramsey-Boiteux theory of indirect taxation and public-sector pricing. Sections C.I.5 extends the discussion to allow for distributive concerns. The Atkinson-Stiglitz critique of distortionary public-sector prices is addressed in both Section C.I.4 and Section C.I.5. Finally, Section C.I.6 provides an assessment of where we stand and what research questions we want to address in the short-term and medium-term future.

The overall approach is unashamedly normative. Traditional normative public economics has been much criticized for approaching its subject matter as if the economist was advising a "benevolent dictator" ready to follow the advice if only it was valid. From the perspective of the theory of public choice analysis or, more generally, the perspective of positive political economy, such a posture is naïve because it neglects the actual political processes that govern the implementation of whatever advice is given.

Valid though this criticism is, it calls for the improvement rather than the abandonment of normative public economics. Political discussion necessarily involves normative judgments. Such judgments rely on values as well as perceptions of possibilities and tradeoffs. Where subjective values are concerned, it may be difficult to make any progress in discussion. However, where constraints and tradeoffs are concerned, scientific analysis may contribute to clarifying the issues. The quality of discussion and, perhaps, decision-making is likely to be improved if a given policy recommendation is assessed in terms of

an encompassing conceptual framework where value judgments and tradeoffs, objectives and constraints can be more clearly distinguished. An important set of relevant constraints may come from the actual workings of the public sector and the political system; this is precisely why the governance side of public goods provision has to be made an integral part of the analysis.

C.I.3 The Mechanism Design Approach to Public Good Provision

Beginning with Clarke (1971) and Groves (1973), the literature has studied the incentive problem of how to motivate people to reveal their preferences for public goods so as to provide "the system" with the information it needs to implement an efficient allocation. As is well-known from Lindahl (1919) and Samuelson (1954), efficiency requires, roughly, that the level at which a public good is provided be brought to a point where the sum of valuations that all consumers together attach to a further increase is equal to the cost of that increase. For this to be achieved, "the system" must know what the sum of valuations is. As was pointed out by Samuelson, it is not clear what incentives people should have to communicate this information.

The question is whether it is possible to design a scheme by which one can implement and finance an efficient level of public good provision. If preferences and provision costs are common knowledge, there is no real problem. For this case, the Coase Theorem suggests that a frictionless multilateral negotiation between all participants should yield an efficient outcome. In this outcome, individual financing contributions will be attuned to individual valuations, and everybody will actually be happy to participate; see, e.g., Bagnoli and Lipman (1992). The view that public good provision on a voluntary basis is *necessarily* inefficient is therefore flawed. Arguments that convey this view, e.g., in the literature on the "tragedy of the commons" (Hardin 1968), are based on examples in which participants act in a decentralized fashion, without any mechanism for multilateral coordination.[2] Such examples illustrate the need for multilateral coordination, but *not* a special difficulty with efficiency in public goods provision.

Of course, the complete-information assumption is inappropriate. If each individual's preferences are that particular individual's private information, the question is whether it is possible to design a scheme by which one can induce people to honestly reveal their preferences while at the same time providing the requisite funds for financing public good provision at an efficient level. With private information about individual preferences, there are two sources of distortions: If an individual expects an expression of interest in public good provision to result in a substantial payment, he may want to understate his valuation for the public good. Alternatively, if the individual expects an expression of interest in public good provision to have no or hardly any financial consequences at all, he may want to overstate his valuation.

2 For a classification of game theoretic versions of the commons problem, see Beckenkamp (2002).

Given these two sources of distortions, one suspects that it might be possible to calibrate the relation between expressed valuations and financial contributions in such a way that individuals are motivated to communicate their preferences correctly to "the system", and that "the system" can use this information so as to implement efficient levels of public goods provision for all possible constellations of preferences. The fundamental results of Clarke (1971) and Groves (1973), as well as d'Aspremont and Gérard-Varet (1979), show that this is indeed possible. Whereas Clarke and Groves do not actually model the incompleteness of information, d'Aspremont and Gérard-Varet use a "Bayesian" specification, in which individual preferences are treated as realizations of independent random variables whose distributions are common knowledge; for this specification, they find that the implementation of efficient levels of public goods provision for all possible constellations of preferences is compatible with budget balance, i.e., the requirement that, for all constellations of preferences, the payments obtained from participants be sufficient to cover the costs of the public good. Moreover, from an *ex ante* perspective, i.e., before anyone knows his own preferences, all participants would voluntarily subscribe such a scheme.

However, not everything is to the best in this best of all possible approaches to public good provision. For the Bayesian specification of d'Aspremont and Gérard-Varet (1979), Güth and Hellwig (1986) show that there is no mechanism which implements efficient levels of public goods provision for all possible constellations of preferences with budget balance and which every participant would voluntarily subscribe to after he knows his own preferences. The reason is roughly the following: In assessing what to communicate to "the system", each person compares the benefits from enhanced public good provision with the costs of increased financing contributions as a result of reporting a higher public good valuation. Incentive compatibility requires that the increase in financing contributions be commensurate to the increase in benefits. This, however, depends on the probability that the person's message has any effect on the level of public good provision at all. Given that this probability is small, the rate at which higher reported valuations can feed into higher financing contributions is limited. This creates a problem for budget balance. The only way to achieve budget balance is to impose "base contributions", akin to lumpsum taxes, on people who do not care for the public good at all. Such people would be better off if the mechanism in question did not exist at all. While formulated as an abstract result about mechanism design, the impossibility theorem implies that, regardless of what the institutional setup may be, there is no way to design rules of negotiation which serve to implement efficient allocations under incomplete information without relying on some form of coercion.

These results suggest the following reassessment of Samuelson's (1954) critique of the contractarian approach to public good provision:

- From an *ex ante* perspective, i.e., before people know their own preferences, Samuelson's critique is *not* justified. The d'Aspremont/Gérard-Varet mechanism does provide a way to implement an efficient allocation in spite of the incentive problems of prefer-

ence revelation; moreover, we can think of this implementation as the result of voluntary multilateral contracting.

- From an *interim* perspective, i.e., from the perspective of people who know their own preferences, but not those of the other participants, Samuelson's critique is justified. Whereas the d'Aspremont/Gérard-Varet mechanism is able to solve the incentive problem of preference revelation, it does so by forcing people to contribute to public good finance even when they do not care for the public goods at all. Moreover, there is no other mechanism which could attain efficiency without coercion.

In short, whether one accepts the ability of a contractarian approach to deliver efficient public goods allocations depends on whether one thinks of such an approach in terms of constitution design, before the veil of uncertainty is lifted (Brennan and Buchanan 1985), or whether one thinks of it as requiring voluntariness of contracting *after* people know their own preferences.

However, none of the preceding is peculiar to public goods. Whereas Samuelson stressed the contrast between public goods and private goods, the impossibility theorem of Güth and Hellwig in fact provides no more than a variation of the impossibility theorem, which Myerson and Satterthwaite (1983) had formulated for the exchange of private goods. For a situation of bilateral bargaining between the owner of an object and a potential buyer, Myerson and Satterthwaite investigate whether it is possible to design a mechanism which implements the efficient trading rule whereby the object is sold if and only if it is worth more to the potential buyer than to the owner. Any such mechanism must overcome the following incentive problems: that the potential buyer may want to understate his preference in order to reduce the price that he has to pay; and that the owner may overstate his preference in order to induce the buyer to pay a higher price. The effect of such distortions in the communication of preferences can be that no transaction takes place, even though the object is worth more to the buyer than to the seller. For a Bayesian specification with nontrivial two-sided asymmetric information, Myerson and Satterthwaite show that the incentive problem of preference revelation can be solved and the efficient trading rule can be implemented, but *only* if either the mechanism designer is willing to subsidize the transaction or if one of the two parties can be coerced into participating even though this is strictly disadvantageous. It is impossible to design a mechanism – and hence impossible to arrange the institutional framework of bargaining – so that the efficient trading rule is implemented, the price which the seller obtains is the same as the price which the buyer pays, and both parties are happy to participate.

This account suggests that the preceding assessment of the contractarian approach to public goods provision can be extended to the provision and exchange of private goods as well. The mutual incompatibility of efficiency, feasibility, and *interim* voluntariness of participation applies to private as well as public goods.

However, there is a difference: For private goods, the conflict of efficiency, feasibility, and voluntariness of participation *ex interim* is attenuated when there are more participants; for public goods, this conflict is aggravated. For private goods, the literature since Myerson and Satterthwaite (1983) has shown that the effects of incomplete information are less important the more potential buyers and sellers there are. When there are several people on both sides, potential sellers on one side of the market are in competition with each other, and so are potential buyers on the other side of the market. This competition limits incentives to misstate one's preferences: The buyer who understates his valuation of the object he is bargaining for must be afraid that, rather than lowering the price at which he gets the object, he will merely manage to lose out against another bidder and fail to get the object altogether.

In the limit, when there are many people on both sides, for private goods, the conflict between efficiency, feasibility, and *interim* voluntariness of participation disappears altogether. Most mechanisms that have been considered yield equilibrium outcomes that are competitive equilibria in the traditional sense; such an outcome is characterized by a "market price", interpreted in such a way that owners sell if and only if their valuations are below the market price and non-owners buy if and only if their valuations are above the market price. The incentive problem of preference revelation is trivial because a consumer who understates his valuation by failing to buy at the market price merely hurts himself alone, as he foregoes the benefits from what he fails to purchase. Efficiency is achieved because any buyer's valuation of the object he buys lies above the price and therefore above the seller's valuation.

For public goods, matters are quite different. The efficiency effects of incomplete information can be more important, the more participants there are. To see why, go back to the above sketch of the argument in Güth and Hellwig (1986). Suppose that the provision decision in question is a zero-one decision, i.e., the public good is indivisible, and it is either provided or not provided. What is the probability that a participant's communication of a high valuation affects the overall decision? Clearly, his report has no effect if most other valuations are low *and* if most other valuations are high; in the first case, the public good is not provided, even if he reports a high valuation, in the second, it is provided even if he reports a low valuation. With n participants, the probability of neither of these contingencies occurring and his having an effect on the provision of the public good can be shown to be proportional to the inverse of the square root of n. As argued above, it follows that his voluntary financial contributions will also be of this order of magnitude. Aggregate voluntary financial contributions from all n participants will then be proportional to the square root of n.

At this point, the question is how the costs of public good provision depend on the number of participants n. For some public goods, non-rivalry in consumption implies that costs are independent of n; for others, one may presume that costs increase with n and are in fact proportional to n, if not more than proportional. The former might be true for television programming, the latter, for example, for the legal system when litigation activity depends on how many people there are to sue each other. For public goods whose

costs are proportional to the number of participants, the preceding considerations imply that, as this number increases, provision costs increase much faster than aggregate voluntary financial contributions. For such goods, therefore, Mailath and Postlewaite (1990) have shown that, when the number of participants is large, it is impossible to maintain any significant provision level at all on the basis of *interim* voluntary contracting. Here, an *interim* contractarian approach fails not just to achieve efficiency, but to assure any public goods provision at all. By contrast, for public goods whose costs are independent of the number of participants, Hellwig (2003) shows that efficiency can be approximately achieved if provision levels are bounded and there are many people to share costs;[3] if provision levels are potentially unbounded, then, with many people to share provision costs, provision levels increase with n , but only in proportion to the square root of n, not in proportion to n, as would be efficient.

Up to now, the mechanism design approach to public goods provision has led to the following conclusions:

- From an *ex ante* perspective, there is no fundamental difference between public goods and private goods; multilateral contracting can induce efficiency even when individual preferences are private information; however, the results of such contracting need to be enforced in a way which involves the coercion of participants for at least some parameter constellations.
- From an *interim* perspective in a finite economy, there is again no fundamental difference between public goods and private goods; voluntary multilateral contracting cannot enforce efficiency when individual preferences are private information.
- From an *interim* perspective in a large economy, there is a fundamental difference between public goods and private goods when the per capita costs of public goods provision are significant. In this case, voluntary multilateral contracting – or even multiple bilateral contracts – can implement efficient allocations of private goods, but voluntary multilateral contracting cannot be used as a basis for public goods provision at all.

A somewhat ironic observation is that the very circumstances in which the difference between public and private goods matters most are circumstances in which the question of how many resources to devote to the public good is trivial. The law of large numbers ensures that, in the transition from small to large economies, the cross-section distribution of preferences becomes non-random and commonly known. This means that the efficient public good provision level is also commonly known. The underlying information problem has been reduced from one that involves the appropriate provision level to one that involves the assignment of financial contributions according to individual preferences. The incentive problem of preference revelation affects the ability to make people contribute financially according to the benefits they enjoy, but not, as Samuelson thought, the ability to find out what the appropriate level of public good provision is.

3 Behringer (2005) uses Hellwig's analysis to explain the provision of open-source software as a non-excludable public good.

At this point, we do not actually have a formal model in which (i) the question of what is an appropriate level of public good provision is nontrivial and (ii) there is a substantial difference between the treatment of public as opposed to private goods under incomplete information. This issue will be addressed again in Section C.I.6 below.

C.I.4 Public Goods Finance under Participation Constraints in a Large Economy

Given the fundamental conflict between the requirements of efficiency and of *ex interim* voluntary participation in the provision of public goods, there are two ways to move forward. One approach is to insist on voluntariness and to investigate "second-best" mechanisms, i.e., arrangements for public goods provision that are best under the additional constraint that, *ex interim*, participants are willing to subscribe. An alternative approach is to rely on the government's power to coerce and to abandon voluntariness. This section considers the first approach.

If one insists on voluntary participation, one must cope with the Mailath-Postlewaite finding that, in a large economy, no significant funds are to be raised by voluntary contributions aimed at raising provision levels. To have any public goods provision at all, one must take recourse to alternative sources of funds.

In this context, the work of Schmitz (1997) and Norman (2004) suggests that Samuelson's (1958, 1969) criticism of the use of exclusion to charge user fees is misplaced. Once a requirement of voluntary participation is imposed, the question is not whether user fees induce an inefficiency at all, but how the inefficiency induced by user fees compares to the inefficiency associated with other sources of funds. On this question, Schmitz (1997) and Norman (2004) argue that the efficiency losses from excluding people with low positive valuations are rather smaller than the efficiency losses from not having the public good provided at all. The argument is akin to the argument in the Ramsey-Boiteux theory of indirect taxation and public-sector pricing that it may be desirable to charge prices above marginal user costs if that is the only way to cover the fixed costs of providing a given service at all. A bridge financed by a toll may be preferable to no bridge at all.

When user fees are imposed, the Mailath-Postlewaite problem is avoided because aggregate user fee revenues are roughly proportional to the number of participants, unlike financing contributions that are motivated by the hope of affecting the overall level of public good provision. Like prices for private goods in a large economy, user fees have straightforward effects on individual incentives: A person will pay the fee if and only if the enjoyment of the public good is worth more to him than the fee. He has no incentive to "understate" his preferences by not paying the fee when the public good is really worth more to him; such "misreporting" of his preferences would only hurt himself.

Using the tools of abstract mechanism theory, Schmitz and Norman show that, in a large economy, a second-best incentive mechanism for the provision of a single excludable public good is obtained by setting an appropriate user fee and by excluding people unless they pay the fee. More complicated mechanisms, e.g., mechanisms involving randomized admissions, cannot do better. The optimal value of the fee is the lowest value at which the user fee revenues are sufficient to cover the costs of the chosen level of public good provision. This level itself is lower than the "first-best" level stipulated by Lindahl and Samuelson. The reason is that people with low positive valuations do not find it worthwhile to pay the fee and therefore do not benefit from the public good.

As indicated above, the Schmitz-Norman analysis provides a link between the theory of public goods provision and the Ramsey-Boiteux theory of indirect taxation and public-sector pricing under a government budget constraint. *Interim* participation constraints turn out to be equivalent to the government budget constraint in the Ramsey-Boiteux approach.[4] Moreover, the Ramsey-Boiteux formulation of the second-best problem in terms of a single price for admission is shown to correspond to a mechanism which is optimal ("second-best") in a much wider class of mechanisms.

Once this link between public goods provision theory and public-sector pricing theory is seen, it is natural to ask what happens to the Schmitz-Norman results when there are multiple excludable public goods. This question has two facets: From the mechanism design perspective, the question is whether the characterization of Ramsey-Boiteux prices in terms of second-best incentive mechanisms is still appropriate. From the perspective of the Ramsey-Boiteux theory, the question is whether it is generally appropriate to fix the user fee for a public good so as to cover the cost of that particular public good.

These questions are studied in Hellwig (2004 a). Hellwig (2004 a) considers optimal incentive mechanisms for the provision and pricing of multiple excludable public goods in a large economy with participation constraints. Building on earlier work by Hammond (1979) and Guesnerie (1995), the paper shows that a vector of admission fees which is optimal in the sense of the Ramsey-Boiteux theory of public-sector pricing corresponds to an optimal incentive mechanism if the mechanism designer is constrained by the additional consideration that participants are free to exchange private goods and unbundled public goods admission tickets (subject to incentive constraints) if they want to. In the large economy, the additional constraint implies that the final allocation of private goods and of public goods admission tickets must be Pareto-efficient. This in turn implies that the final allocation can be characterized by a price vector; this price vector encompasses the prices of admission tickets for the excludable public goods.

Hellwig (2004a) also shows that the additional assumption of free retrading of private goods and public goods admission tickets is *necessary* as well as sufficient for Ramsey-Boiteux pricing to emerge as a second-best mechanism. If the mechanism designer is able to prevent free retrading, or even just the unbundling of pub-goods admission tick-

4 For a precise formulation of this point, see also Hellwig (2003).

ets, a second-best mechanism is *not*, in fact, characterized by a single price vector. For instance, if a person's valuations for different excludable public goods are stochastically independent, the mechanism designer will find it optimal to rely on *mixed bundling* in the sense that the bundle consisting of tickets to both the opera performance and the football game is offered at a discount relative to the sum of the prices for separate tickets. With free retrading of unbundled tickets, such an arrangement would be subject to arbitrage by people buying the bundle and then reselling the part they don't want; however, if retrading can be prohibited, mixed bundling is both feasible and, as a rule, desirable.

The analysis builds on results from the theory of multiproduct monopoly, see, e.g., Manelli and Vincent (2002). For a multiproduct monopolist, mixed bundling is desirable because demand elasticities for separate tickets and for bundles differ: A price increase for the bundle loses payments from clients on two margins: people who switch to just going to the opera don't pay for the football game anymore; and people who switch to just going to the football game don't pay for the opera anymore. In contrast, a price increase for the separate ticket for the opera loses payments from clients on one margin, where people cease going to anything at all, and gains payments from clients on another margin, where people switch to buying the bundle rather than the opera ticket separately. The resulting difference in elasticities makes mixed bundling attractive to the monopolist. It also makes mixed bundling attractive in second-best mechanism design because it facilitates the recovery of public goods provision costs; more precisely, the improvement in the structure of prices that mixed bundling provides makes it possible to have, on average, lower prices altogether.[5] Fang and Norman (2003) show that, under certain additional conditions, the Ramsey-Boiteux solution may even be dominated by *pure bundling* in the sense that separate tickets for individual public goods are not offered at all.

Given the assumption of free retrading, the known results from the Ramsey-Boiteux theory can be used to characterize optimal user fees for excludable public goods. The following properties are of interest:

- Optimal user fees satisfy a version of what is known as the *inverse-elasticities* rule, whereby user fees or, more generally, the excesses of user fees over marginal costs of use are inversely proportional to the elasticities of demand for the use of the public goods in question.
- The inverse-elasticities rule takes precedence over any notion that each public good should be self-financing. As a rule, cross-subsidization between different public goods is desirable. Typically, it is desirable to use revenues from goods with low demand elasticities to subsidize the provision of goods with high demand elasticities.
- Cross-subsidization can also solve the Mailath-Postlewaite problem of how to finance the provision of a *non-excludable* public good in a large economy. Thus, national de-

5 The results of the multiproduct monopoly literature suggest that, in the absence of retrading, it might also be desirable to use public goods provision mechanisms with randomized admissions.

fense might be financed through cross-subsidization from sports events or, more seriously, basic science through cross-subsidization from tuition fees.

These results are of applied, as well as theoretical interest. For theory, they suggest that the focus of the public goods literature on budget balance for each individual public good may be misplaced. The problem of public goods finance ought to be seen in the general context of public finance as a whole. For applications, the results raise doubts about the treatment of bundling and cross-subsidization in sector-specific regulation and competition policy. For example, the inverse-elasticities rule would seem to provide some justification for the widespread use of the profits from municipal electricity providers for the financing of local public transport. The electricity providers draw their profits from their hold over local distribution networks, which are a natural monopoly. A cost-based system of access regulation for electricity transmission would, in principle, tend to eliminate these profits and undermine the prevailing cross-subsidization of local public transport. According the Ramsey-Boiteux analysis, this may be undesirable.

At this point, one must recognize that, as was discussed in the introductory section, the Ramsey-Boiteux analysis itself neglects all problems of governance and of inefficiency on the production side. The preceding remarks should therefore be taken with a grain of salt. However, they do point to an important issue for future research. This issue will be addressed again in Section C.I.6 below.

Hellwig (2004 a) does not allow for direct taxation as a source of public goods finance. This gap is filled in Hellwig (2004 b). Whereas Hellwig (2004 a) assumes that total resources available to the economy are given, Hellwig (2004 b) allows for endogenous production. In a specification that is borrowed from the literature on optimal income taxation, people use labour to produce output in the form of private goods or public goods. An additional incentive problem arises because labour productivity levels differ across people, and each person's productivity is that person's private information. The mechanism designer is assumed to be able to observe the output that people produce but *not* their productivity parameters.

In this setting, income taxation can be used as an additional source of finance. Without violating *interim participation* constraints, the mechanism designer can use income taxation to extract some of the surplus from production. However, his ability to do so is limited by incentive considerations. If he tries to extract too much, people with high productivity levels will act as if their productivity levels are low; this would defeat the purpose of the exercise. The mechanism designer is thus faced with a problem of optimal income taxation as well as a problem of public goods provision and pricing.

Technically, the combined public goods provision/income taxation problem is a problem of multidimensional mechanism design, where people have private information about their productivity levels as well as their public goods preferences. General methods for solving this problem are not yet available (Rochet and Choné 1998). However, under the additional assumption, which was already mentioned, that people are free to retrade private goods and unbundled public goods admission tickets, Hellwig (2004 b) shows

that the problem can be reduced to the choice of a vector of public goods admission fees and a simple one-dimensional income tax schedule, which is independent of public goods preferences.

Given this simplification, the following results are obtained:

- If the maximal income tax that can be obtained from the person with the *lowest* productivity level without violating that person's participation constraint is sufficient to finance first-best public goods provision, then Samuelson (1958, 1969) or Atkinson and Stiglitz (1976) are vindicated, and optimal admission fees are zero. Otherwise, a first-best allocation cannot be implemented.
- If a first-best allocation cannot be implemented, second-best admission fees are positive and again satisfy a version of the inverse-elasticities rule.
- If a first-best allocation cannot be implemented, income taxes, as well as admission fees, should be used for public goods finance. A second-best income tax schedule is nonlinear and has positive marginal tax rates at all levels below the top; the marginal tax rate at any one income level satisfies the appropriate version of Mirrlees's formula for the optimal marginal income tax, which itself can be interpreted as a version of the inverse-elasticities rule.

These results strengthen the previous conclusion that the focus of the public goods literature on budget balance for each individual public good may be misplaced. At the same time, they throw doubt on the Atkinson-Stiglitz view that, once one takes proper account of direct taxation, there is no more room for admission fees or other forms of distortionary pricing of different consumer goods. The use of income taxes for public goods finance is desirable, but a mixture of distortionary public goods finance and distortionary admission fees is required to minimize overall efficiency losses.

An interesting feature of these results is that, so far, distributive concerns do not play any role. Traditionally, the theory of optimal income taxation focuses on redistribution between people with different productivity levels. Here, such redistribution plays no role. Income taxation is used to reduce the efficiency costs of public goods finance under participation constraints; the inverse-elasticities rule dictates that, at every income level, at the margin, there should be some distortion, i.e., the optimal marginal income tax should be positive.

C.I.5 Public Goods and Redistribution

Lack of consideration for distributive concerns is a major weakness of the Ramsey-Boiteux theory, in the generalized form discussed in the preceding section, as well as its original form. When taken literally, the inverse-elasticities rule calls for a surcharge on bread, gasoline, or electricity, all of them necessities of daily life which probably take a larger share of the budgets of poor people than of rich people. Within the Ramsey-Boiteux

approach, this criticism has been addressed by Diamond and Mirrlees (1971), who replace the simple inverse-elasticities rule by a *weighted* inverse-elasticities rule, whereby the excess of price over marginal cost depends on a weighted average of individual demand elasticities, the weights reflecting distributive assessments of the people in question.

Relying on a conventional utilitarian approach, Hellwig (2003/2005, 2004 a, 2004 b) shows how distributive concerns can be integrated into the analysis of public goods provision and finance. From a utilitarian perspective, the standard formulation of the public good provision itself can give rise to distributive concerns because people differ with respect to the benefits they draw from the provision of the public good; this difference is a natural consequence of the assumed stochastic independence of valuations across agents. If the assessment of overall welfare involves some degree of inequality aversion, the difference in benefits drawn from the provision of the public good gives rise to distributive concerns. Which way these distributive concerns go depends on the nature of the public good and of the benefits in question. For example, in the case of a hospital, a person's ability to draw benefits from this public good reflects a bad state of health, so inequality aversion might call for some redistribution towards this person. In contrast, in the case of an opera performance or a university education, benefits are likely to be correlated with overall well-being, so inequality aversion might call for some redistribution away from people who are particularly well-placed to enjoy these benefits.

For an excludable public good where benefits are positively correlated with overall well-being, Hellwig (2003/2005) shows that redistributive concerns may in fact provide a reason for charging user fees even when there are no participation constraints and the provision of the public good can, in principle, be financed by imposing an equal lump-sum tax on every member of the population. By imposing the user fee, the mechanism designer forces people who benefit a lot from the public good to share some of their benefits with "the system"; as they do so, the burden on people who do not benefit from the public good can be reduced. The fee provides a tool for redistribution from people who benefit a lot from the public good to people who benefit little or not at all. Because it leads to the exclusion of people with low positive valuations, the imposition of the fee entails an efficiency loss. However, this efficiency loss must be compared to the welfare gains from redistribution. As in the theory of optimal utilitarian income taxation à la Mirrlees (1971), the mechanism designer is faced an equity-efficiency tradeoff.

The detailed analysis of this tradeoff yields the following results:

- The imposition of a user fee as a redistribution device is undesirable if inequality aversion is small (though positive) and desirable if inequality aversion is large.
- If inequality aversion is extreme, i.e., if welfare is evaluated by the Rawlsian maximin-criterion, the public good should be managed as a profit-maximizing monopoly so as to obtain the largest possible surplus for redistribution to the worst-placed individuals in the system. In this case, the user fee is equated to the monopoly price, revenues from user fees are more than sufficient to cover provision costs, and the people who

draw no benefits from the enjoyment of the public good are "compensated" by receiving their share of the profits from public good provision.

- In contrast to the results of Schmitz (1997) and Norman (2004) for the model with participation constraints and no inequality aversion, a simple price mechanism can be dominated by a mechanism involving randomized admissions. However, as in the analysis of multiple public goods in Hellwig (2004 a), such a mechanism is not sustainable if participants can freely retrade private goods, as well as public good admission tickets.
- In Hellwig (2004 a) and (2004 b), the analysis is extended to allow for a multiplicity of public goods, as well as endogenous production, with a heterogeneity of individual productivity levels. The formal framework is the same as the one that was discussed in Section C.I.4, except that utilitarian welfare assessments are affected by inequality aversion. The following results are obtained:
- If inequality aversion is significant or if participation constraints are imposed, user fees for excludable public goods are positive and satisfy a weighted inverse-elasticities rule with weights reflecting distributive concerns.
- If inequality aversion is large, participation constraints are not binding; as inequality aversion goes out of bounds, second-best user fees approach the monopoly solution, as in the case of a single excludable public good.
- If inequality aversion is nonzero or if participation constraints are imposed, then, under the additional assumption that the vector of public goods valuations and productivity levels is affiliated, the optimal marginal income tax is positive at all levels between the bottom and the top of the income distribution; the optimal income tax schedule has the same properties as the optimal income tax schedule in the traditional unidimensional model of Mirrlees (1971) and Seade (1977).
- If inequality aversion is nonzero or if participation constraints are imposed and if the vector of public goods valuations and productivity levels is affiliated, second-best public good provision levels are lower than the first-best levels according to the Lindahl-Samuelson rule.
- If inequality aversion is small, public goods provision costs exceed revenues from user fees; if inequality aversion is large, the opposite is true, and the provision of excludable public goods is profitable.

The results stand in contrast to those of Atkinson and Stiglitz (1976). For a model of indirect and direct taxation with heterogeneity in productivity levels only, Atkinson and Stiglitz showed that income taxation is sufficient for both government finance and redistribution. Cremer, Pestieau, and Rochet (2001) have pointed out that this result was due to the assumption that heterogeneity in labour productivities is the only source of redistributive concerns. Whereas they considered inheritances as an additional source of heterogeneity, Hellwig (2004 b) studies the implications of heterogeneity in public goods prefer-

ences, along the same lines as Hellwig (2003/2005). The additional assumption that public goods valuations and productivity levels be affiliated covers the possibility that all these variables are stochastically independent. In that case, the redistributive function of positive user fees is completely independent of the redistributive concerns that are caused by heterogeneity in labour productivity. The affiliation assumption also covers the possibility that valuations and productivities are positively correlated. However, we do not, as yet, know how such correlations affect the structure of fees and taxes. For instance, if the appreciation of opera is positively correlated with income (productivity), does this imply that second-best prices for opera tickets are higher, because they serve an additional redistributive function, or does it imply that second-best prices for opera tickets are lower, because redistributive concerns are already taken care of through income taxation?

As an offshoot of this work, Hellwig (2005) takes a new look at the standard model of optimal utilitarian income taxation. The paper provides a new proof of the Mirrlees-Seade theorem on the positivity of the optimal marginal income tax – in a more general model and under weaker assumptions. More importantly, the proof clarifies the structure of the argument, relating the mathematics to the economics and showing the precise role of each assumption that is imposed. It turns out that the key assumption concerns the desirability of redistributing leisure rather than consumption. This represents a significant departure from the Benthamite notion that redistribution is desirable because the marginal utility of consumption is decreasing. The desirability of redistributing leisure reflects not only the decreasing marginal utility of consumption but also the assumption that people with higher productivity levels find it easier to provide a certain amount of output, in total and at the margin.

The new approach to the analysis of optimal utilitarian income taxation that is developed in Hellwig (2005) opens the way towards additional new results. Thus Hellwig (forthcoming) shows that randomized income tax schemes are undesirable if individual preferences exhibit a property of nondecreasing risk aversion/inequality aversion; the arguments of Stiglitz (1982) or Brito et al. (1995) on the desirability of randomization are thereby put into perspective. The property of nondecreasing risk aversion that is needed has been developed in Hellwig (2004 c) as an extension of the usual concept of nondecreasing risk aversion to the case of multidimensional outcomes when ordinal preferences on the underlying outcome space are not the same.

The large-economy models summarized in this and the preceding section have a fundamental weakness in that they are unable to articulate the question of the proper amount of resources to be devoted to public goods provision. As was mentioned at the end of Section C.I.3, in these models, a version of the law of large numbers implies that cross-section distributions of public goods valuations are non-random and commonly known. Given this information, the efficient amount of public goods provision, first-best, second-best, or fifty-sixth-best, is also commonly known. This is important, e.g., for the clean separation of the choices of public goods provision levels, user fees, and income tax schedule in Hellwig (2004 b).

In contrast, Bierbrauer (2005) considers the interdependence of public goods provision and income taxation in a model in which the proper level of public goods provision is not known beforehand. He studies a large economy with endogenous production, with incomplete information about individual productivity levels, which can take two values, high and low ("rich" and "poor"). There is a single non-excludable public good; valuations for the public good do not satisfy a law of large numbers, but they are perfectly correlated within each "class". Income taxes can be used for public good finance or for redistribution. To avoid the trivial conclusion that, in a large economy, individuals feel powerless to affect aggregates and are therefore willing to provide information about public-valuations without restraint, Bierbrauer imposes a requirement of coalition proofness (Bernheim et al. 1986) on the revelation of public goods preferences. When this requirement is imposed, he finds that there can be a tradeoff between the efficiency of public goods provision and the amount of redistribution. This tradeoff arises, for instance, if the amount of redistribution is such that "the rich" claim that they love the public good regardless of whether they really do, merely because the use of funds for the public good reduces the amount of redistribution. Alternatively, "the poor" might claim that they hate the public good because, that way, more redistribution is available for their private-good consumption.

The previous literature on public good provision and income taxation, e.g., Boadway and Keen (1993), had assumed that public goods preferences are common knowledge, and then focused on how an increase in public good provision might affect labour-leisure choices and thereby the equity-efficiency tradeoff that is involved in the use of income taxation for redistribution. In contrast, Bierbrauer's analysis shows that, under incomplete information, the use of income taxation for redistribution restricts the scope for even determining what public goods preferences are. The communication patterns that stand at the center of his altogether abstract mechanism-theoretic analysis of coalition incentives bear an intriguing resemblance to communication patterns that we regularly observe in reality. Perhaps, this resemblance provides a starting point for integrating political-economy considerations into the mechanism-theoretic formulation.

C.I.6 Agenda for Future Research

The results reported in Sections C.I.4 and C.I.5 provide the basis for an integrated formulation of traditional normative public economics, encompassing the theory of public goods provision, the theory of indirect taxation and public-sector prices, and the theory of optimal utilitarian income taxation. Indirect taxation as such has not been considered, but, given the well-known structural equivalence between the theory of indirect taxation and the theory of public-sector pricing, an extension of the work that has been done to cover indirect taxation seems more a matter of changing the notation than a matter of developing new concepts and results. Still, it may be worthwhile to do this, especially with a view to providing a utilitarian analysis of the taxation of capital income (differential taxation of delayed consumption as opposed to immediate consumption).

However, it is more important to consider the larger questions which remain unresolved. Three sets of questions stand out: What is a good framework for studying mechanisms determining levels of public goods provision in large economies? What is the role of governance and incentives on the supply side of public goods provision? What is the role of the political economy in actual decision processes on public goods provision and finance?

These three sets of issues are discussed in the remainder of this section.

C.I.6.1 Information Aggregation and Elicitation in Large Economies

As discussed in Section C.I.3, the constraints on public goods finance that are imposed by the incompleteness of information about public goods preferences are most severe when the system is large and each individual feels powerless to affect the overall outcome. In this constellation, the difference between public and private goods is starkest. Yet, if a law of large numbers prevails, this is also a situation where information about individual preferences is not needed to determine the level of public good provision because the cross-section distribution of preferences is common knowledge. The information problem is merely an assignment problem, limited to the question of who has a high and who has a low valuaton for the public good. This assignment problem matters for the distribution of financing contributions, but not for the decision on how much of the public good to provide. This is unsatisfactory; we therefore want to develop a formulation which makes it possible to study the question of how to determine the proper amount of public good provision in the large-economy setting, where the difference between public and private goods is starkest.

Unfortunately, this is not just a matter of changing the mathematical formulation by allowing for the public goods valuations of different people to be correlated so that the law of large numbers does not apply. To be sure, if the law of large numbers does not apply, the appropriate evaluation of alternative public goods provision decisions on aggregate is not known *a priori*, and the problem of mechanism design encompasses the question of how to elicit the information that is needed to implement a given decision rule. However, for specifications with correlated valuations, the theory of mechanism design provides trivial solutions, which, at the end of the day, are not very convincing. These solutions involve the frictionless, perfect elicitation of the desired information, supported by incentive schemes which exploit correlations to harshly penalize deviations when communications from different people are too much in disagreement. The incentive schemes in question look more like mathematical artefacts than anything that might be used in reality. The challenge is to develop a formulation that avoids these not very convincing schemes while making clear what constraints precisely prevent the mechanism designer from exploiting the correlations to find the appropriate level of public good provision at no cost in terms of efficiency.

A promising route seems to be provided by the notion of coalition proofness that was used in Bierbrauer (2005). Heuristically, coalition proofness prevents the mechanism designer from exploiting correlations because it allows for the possibility that participants coordinate their responses. In the model of Bierbrauer (2005), the indicated argument for the exploitation of correlations would suggest that if, for example, all "rich" people have a low valuation for the opera, then, without any need for additional incentive provision, each one of them is willing to transmit this information honestly, knowing that, if the others do so and the mechanism penalizes deviations, then it is better to do so as well. However, all "rich" people together might have an incentive to form a coalition coordinating a deviation so that all of them – falsely – communicate a high valuation for the opera. The requirement of coalition proofness thus prevents the exploitation of correlations.

The challenge is to extend this notion from a context where the scope for coalition formation is the way the model is specified to a more general setting, where the relevant coalitions are not so easily identified. Going back to the simplest version of a single non-excludable public good, with no consideration of labour productivity levels or any other hidden parameters, one might suppose that individual valuations for the public good, as well as the average valuation for the public good, are given by random variables with commonly known joint distributions and then ask what mechanisms in the large economy are individually incentive compatible and coalition proof.

By arguments familiar from the literature, individual incentive compatibility implies that, whatever the level of public good provision that is chosen, finance is provided by a lump-sum contribution which is the same for everybody. Given this financing scheme, e.g., for a public good that is indivisible, people with valuations below the per capita provision cost are unhappy if it is installed, people with valuations above the per capita provision cost are more than happy. These two groups would seem to form natural coalitions to consider in checking coalition proofness: We therefore conjecture that coalition-proof mechanisms are restricted to using the information about how many people are unhappy and how many people are happy about the instalment of the public good. Any attempt to rely on more detailed information about the distribution of valuations inside these groups would seem to be providing incentives for coalitions to form with a view to providing misinformation.

If a public good whose provision involves a zero-one decision can indeed be handled in this way, the next step must be to extend the analysis to public goods with multiple provision levels. Here it is more difficult to identify "natural" coalitions. For example, when there are three possible provision levels, zero, one, and two, is there a "natural" coalition of people to be identified with the provision of one unit of the public good? Or will the people who consider one the ideal align themselves either with zero, so as to reduce the chance of what they consider to be excessive public good provision at two, or with two, so as to reduce the chance of what they consider insufficient public good provision at zero?

We do not yet know the answer to these sorts of questions. Indeed, we do not even know what is the most appropriate adaptation to our incomplete-information setting of the

concept of Coalition Proof Nash Equilibrium, which Bernheim et al. (1986) had formulated for games of complete information. In Bierbrauer (2005), the requisite formulation is obvious because one can rely on dominance concepts, which are unaffected by incomplete information. In the example given in the preceding paragraph, a dominance concept does not seem to be available: The people who consider one the ideal do not seem to have a dominant strategy; whether they want to align themselves with zero or with two or be identified as preferring public good provision level one depends on what they believe about the other participants. The question then is whether one can extend the concept of coalition proofness to allow for this information problem.

In any case, the notion of coalition proofness seems to hold some promise of providing a framework for a meaningful analysis of how to determine the proper amount of public good provision in a large-economy setting. Beyond that, the patterns of coalition formation that emerge as being most relevant for the constraints that coalition proofness imposes may provide some insight into the kinds of communication patterns that can be expected to take place in large systems.

C.I.6.2 Governance and Incentives in Public Goods Production

Like most of normative public economics, the work that has been reported in Sections C.I.3 – C.I.5 has not paid much attention to the supply side of public goods provision. The focus was almost exclusively on the demand side and on the implications of non-rivalry for preference revelations and finance under conditions of incomplete information. The nature and properties of the public goods were presumed; the production side was represented by an exogenously given cost function.

This neglect of the production side is responsible for the unreserved advocacy of cross-subsidization in the public sector which emerges from the results reported in Sections C.I.4 and C.I.5. The inverse-elasticities rule dominates the setting of user fees and taxes; there is no notion that any one public good or any one subset of public goods ought to be self-supporting.

Without questioning the benefits of cross-subsidization under the inverse-elasticities rule, let alone the unavoidability of cross-subsidization for non-excludable public goods, one may, however, have reservations about the incentive effects of cross-subsidization on the production side. If a producer knows that any deficit is going to be covered by funds from another source, he may be less concerned about cost efficiency or about tailoring his product to the needs of his customers. The same incentive effects may arise for a producer who knows that any surplus he obtains is going to be siphoned off for use in some other part of the system. Such incentive effects are neglected in the work reported above. Incorporating them into normative public economics represents a major challenge.

An appreciation of this lacuna in our theories is probably as old as the Ramsey-Boiteux model itself. Indeed Boiteux (1956) considered a single public enterprise subject to a

stand-alone budget constraint precisely because he was aware of the incentive implications of a requirement of cost recovery for this enterprise, without any prospect for cross-subsidization from other parts of the public sector. However, we do not as yet have a conceptual framework for assessing the tradeoffs involved. The mere fact that incentive effects in production matter does not by itself support the arguments underlying the inverse-elasticities rule, e.g., for the benefits of cross-subsidizing local public transport from profits in electricity distribution. What we need is a framework for comparing such benefits of cross-subsidization with the costs negative incentive effects. It is somewhat surprising that such a framework does not, as yet, exist.

A major difficulty concerns the question of precisely what is meant by Boiteux' "équilibre budgétaire", i.e., the requirement that a given firm in the public sector covers its costs. At first, the answer seems obvious, but then, one must reflect on what happens if the firm fails to cover its costs. How hard is the budget constraint that is imposed? How credible is the government's commitment to not providing additional funds? After all, the firm knows that, behind the government, there is the taxpayer. Indeed, this is known not only to the firm, but also to potential creditors, who may be considering that, in the end, the courts may force the government to fulfil the public-sector firm's obligations. The question of how to assess a denial of cross-subsidization thus becomes closely linked with questions of credibility and governance.

In pursuing these questions, we want to draw on the large literature on soft versus hard budget constraints, as well as the literature on cross-subsidization in private corporations. As discussed in Hellwig (2000), the prevalence of internal finance in the corporate sector raises questions about the governance and efficiency of such finance, in particular, when funds from a profitable line of business are used to subsidize the development of another line of business, which, at least for the moment, is not generating enough cash flow to finance itself. Relevant examples would be the cross-subsidization of the airbus by Daimler's profits on automobiles or the cross-subsidization of mobile-phone network development by Mannesmann's engineering divisions. In the context of a previous research project at the Sonderforschungsbereich 504 at the University of Mannheim,[6] Inderst and Müller (2003), as well as Inderst and Laux have developed models for studying the incentive effects of such cross-subsidization. These models should provide a starting point for getting a hand on the corresponding effects in the public sector. Research on the allocative implications of internal finance and cross-subsidization within the corporate sector continues in the context of a research project, "Corporate Control, Corporate Finance, and Endogenous Technical Change", which is funded by the Deutsche Forschungsgemeinschaft as part of the Sonderforschungsbereich/TR 15, *Governance and the Efficiency of Economic Systems*.

6 For a survey of results, see Hellwig et al. (2002).

C.I.6.3 Political Economy

As mentioned in Section C.I.2, all the work that has been reported so far has taken a purely normative stance. This is legitimate, as it provides a standard by which to assess proposed arrangements for the provision and financing of public goods. However, it is also important to consider the actual political decision-making on these matters.

An interesting issue to start on is provided by the observation that, whereas the inverse-elasticities rule calls for a disproportionate reliance on taxes or fees that cannot be avoided because demand is inelastic, this is precisely where political resistance to higher taxes or higher prices is most vociferous. An increase in gasoline taxes or in electricity prices is much more contentious than, say, an increase in the tax rate on interest income, which can easily be avoided or even evaded.

Ideas from public choice theory suggest that the difference may be due to differences in the ability to organize lobbies (Olson 1965). Where demand is inelastic, "exit" is less of an option, and the payoffs to organizing "voice" are relatively larger. In pursuing this line of argument, one must deal with the question how precisely people lose sight of the implications of such selective resistance to taxation for either the provision of public goods and services or the overall efficiency losses from taxation. Bierbrauer's (2005) arguments about the interference of allocative and distributive effects may provide a basis for addressing this question.

The idea of introducing considerations from political economy is not to start a full-fledged analysis of how the political process deals with the provision of public goods. For such a full-fledged analysis, we would need to have a much larger competence in political science and political economy than we do at present. The idea is, instead, to study how deviations in the patterns of information processing and communication that we observe deviate from the patterns that the mechanism design approach would suggest, to explain these deviations, and to consider their implications for our understanding of how "the system" can deal with the underlying allocation problem. As a contribution to the analysis of institutions, this corresponds to a "bottom up" approach, where one starts from people and their perceptions of their interests, rather than a "top down" approach, where one starts from the institutions or the "entrepreneurs" who create and manage them.

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C.II The Behaviorally Informed Design of Institutions for the Provision of Collective Goods

Direction: Prof. Dr. Christoph Engel
Associate Professor (W 2 Position): Privatdozent Dr. Arndt Bröder (Psychology)

PostDocs

Dr. Anne van Aaken (Law)
Dr. Stefan Bechtold (Law)
Privatdozent Dr. Martin Beckenkamp (Psychology)
Dr. Melanie Bitter (Law)
Privatdozent Dr. Thomas Gaube (Economics)
Dr. Jörn Lüdemann (Law)
Dr. Stefan Magen (Law)
Dr. Andreas Nicklisch (Economics)
Dr. Indra Spiecker, gen. Döhmann (Law)

Doctoral Candidate

Stefan Tontrup (Law)

Student Researchers

Denise Bauer (Law)
Boris Brandhoff (Law)
Markus Englerth (Law)
Lena Heuner (Law)
Florian Huerkamp (Law)
Tobias Salz (Law)

Affiliated

Dr. Heike Hennig-Schmidt (Economics)
Dr. Alkuin Kölliker (Political Science)
Dr. Frank Maier-Rigaud (Economics)
Dorothee Schmidt (Economics)
Privatdozent Dr. Axel Ostmann (Economics)

Former Members

(left the institute since 2002)
Dr. Thomas Baehr (Law)
Dr. Guido Kordel (Law)
Prof. Dr. Chrysostomos Mantzavinos (Economics)
Dr. Margaret McCown (Political Science)
Dr. Christian Schubert (Economics)

C.II.1 General Outline

I. Motivation

All research on collective goods asks one of the following three questions: Is there a collective goods problem in the first place? If so, is an existing or a proposed institution able to solve the problem, or at least to improve the situation? Finally, do the normatively appropriate problem definition, and the normatively preferable institutional response, stand a chance of being implemented?

It is natural to address all these three questions by way of rational choice analysis. Collective goods problems are then defined as pure public goods, club goods or common pool resources. In each case, the analysis focuses on incentives and information, and on the way in which institutions shape incentives and channel the information which is required to address the collective goods problem. Normative analysis deals with the optimal design of incentives, positive analysis with the actual incentives that are generated in a given institutional context. The mechanism design approach summarized above does the former, public choice theory the latter. Here the rational choice paradigm helps us understand why the political process often fails to harness sovereign powers in the interest of changing incentives such that collective goods problems disappear.

While evidently fruitful, the rational choice perspective is also limited. This is due to the very same factor that has made the rational choice model so visibly successful. The model rests on the strict distinction between objectives and constraints. The object of study are utility maximising individuals reacting to changes in opportunity structures. For methodological reasons, the individual is modeled as Homo oeconomicus.

For sure, these are only assumptions, not claims about reality. They are imposed in order to capture the essence of social phenomena and institutions, and to make predictions for the effect of changing circumstances. However, the scope of this analysis is inherently limited. An alternative research strategy, which starts with what is known about human behavior, is likely to draw a fairly different picture of collective goods. Some phenomena that are made visible by behavioral analysis can hardly even be translated back into the world of rational choice. This project focuses on the alternative approach.

The behavioral analysis of collective goods is not virgin territory. Suffice it to recall a few of the well-known findings: where (simple) rational choice models would predict the "tragedy of the commons", it in practice often is conspicuously absent. There are various reasons for this, but a more realistic picture of human motivation is part of the explanation. "Public goods games" are one of the workhorses of experimental economics. Again, contribution rates found in the laboratory by far exceed the prediction of zero contributions made by rational choice models. If all beneficiaries of a public good agree on a contribution level, in rational choice terms this is just "cheap talk". At the level of implementing the agreement, the original social dilemma is repeated. However, psychologists have traced a powerful cheater-detection mechanism, effectively exploiting subtle signals. It has bite since punishing sentiments kick in when cheating seems patent. Emotions thus

trump rationality and help solve the social dilemma. It is in this context that our work on the behavioral analysis of collective goods problems is situated. We are adding new dimensions, exploring new fields of application, and translating the findings into institutional analysis and design. We are particularly interested in generating models, such that scattered empirical findings can be put into perspective and compared to rational choice approaches.

Likewise, we are not the first to be interested in the behavioral analysis of institutions. Behavioral effects have never been fully absent from institutional analysis. An obvious illustration is "moral suasion". But the most prominent force in the area is the growing behavioral law and economics movement. It mainly piggybacks on the Kahneman/Tversky critique of the rational choice approach. It either interprets legal institutions as remedies to individually or socially detrimental "biases". Or it criticises the legal community for overlooking that biases prevent the law from being effective. Both have obvious value. Suffice it again to recall two well-known findings. It is much easier to get an appropriate understanding of consumer-protection legislation if one understands the psychological underpinnings of strategies like the "foot in the door technique of salesmen". Environmental policy has long been tempted by torts as a tool for "ex post regulation", in light of the experiences from concrete cases. This is, however, dubious advice, given the strong "hindsight bias". Once one has seen the evidence of a risk materialising, it is next to impossible to form a proper assessment of its ex ante likelihood. Consequently, regulation by torts finds itself on a slippery slope towards ever stricter rules.

Some of our work is exactly in this tradition, where it seems helpful to assess the potential of institutions, and of the law in particular, in order to solve collective goods problems. But in two ways we are going beyond this earlier work. We make a point of not exclusively looking at biases. Related to this, the Kahneman/Tversky literature and experimental economics are not the only sources we are tapping. Rather, we try to directly purchase from psychology. And we are particularly interested in the law as a governance tool. We are convinced that, in a behavioral perspective, one is able to gain a much richer understanding of the law's potential. In these ways, we also hope to bridge the gap between (new) behavioral law and economics and (old) law and psychology. While there has for decades been direct interaction between lawyers and psychologists on issues like lie detection or eyewitness testimony, this strand of research has not thus far been very interested in the law as a governance tool.

Interdisciplinarity is never easy. But in major U.S. law schools, law and economics has almost become a standard approach. Behavioral law and economics is seen as one of the major critics of this approach, and is itself making headway. The situation in Germany is significantly different. Here, antitrust law notwithstanding, the economic analysis is still rare, if not combated. The behavioral analysis of law is only just starting tentatively. Against this backdrop, it is inevitable that the widespread scepticism about a closer interaction between the law and the social sciences be taken seriously. We are trying to respond at two levels. At one level, we are assessing the proper role of input from the social sciences in both legal doctrine and legal science. At the other level, we are compar-

ing alternative paradigms, starting with rational choice and behavioral analysis, but not confining ourselves to these.

In principle, the third fundamental question regarding collective goods would no less lend itself to behavioral analysis than the first two. The processes leading to the selection of issues, problem definition, the choice of a solution, its implementation, and ultimately its evaluation are all rife with behavioral effects. Suffice it again to recall but one prominent finding. Scandal-driven politics is not surprising, given the power of what has been called the "availability heuristic". It can strategically be exploited by "availability entrepreneurs". Since the political scientists have left the Institute, however, this third question is currently not among our main areas of interest. Nonetheless, some individual projects do have a bearing on this.

II. Summary Report

1. Problem Definition

A behaviorally informed perspective can change the definition of collective goods problems in two respects. It can qualify the expectations from rational choice analysis, and it can point to problem dimensions that are hard, if not impossible, to see in the rational choice framework. We have been doing work in both respects.

A standard reaction of outsiders to rational choice analysis is this: But I know that we are not all these bloodless egoists that figure prominently in the standard rational choice approach! There are indeed well-worn methods from psychological personality research for classifying subjects along these lines. Martin Beckenkamp (2002) has used the ring-value measure scale for the purpose. He has expressly used game theory as a benchmark and comparatively tested competition-orientated versus cooperatively orientated subjects. In a number of respects, the findings are not good news for those hoping that morality would do the trick. In two important dimensions, cooperatively oriented subjects do not exhibit a significant difference. They too are sensitive to sanctions, provided they are not seen as outrageous. And when it comes to forming decision relevant expectations about the behavior of others, these expectations are not influenced by their own value orientation. There is even a detrimental effect. In their own use of a limited resource, cooperatively oriented subjects are much less careful than competition-oriented subjects. One interpretation is that competition-oriented subjects are more concerned about the potential failure of the entire enterprise.

Dorothee Schmidt (2005) has contributed a theoretical paper, also calling for caution with respect to morality as a resource for guaranteeing the provision of collective goods. She has chosen the absence of (potentially violent) conflict as the collective good under consideration. She applies contest theory to show that introducing morality cannot only make those individuals worse off who become more moral; it can even increase the overall level of conflictual activity. This is due to the fact that these persons' behavior can

be a strategic complement of the behavior of remaining conflict-oriented members of the population. Due to the increased morality of some, being more aggressive pays more for the remaining egoists.

Another theoretical contribution to our efforts draws a surprising line from altruism to rational choice public goods theory. Thomas Gaube (2005) interprets altruism such that all altruistic members of a population care about the well-being of a third person. Under this assumption, charitable giving is a public good among all altruists. Gaube shows that it is sensitive to changes in population size.

Within the rational choice framework, actors care about outcomes, not about procedure. An experimental paper by Frank Maier-Rigaud (2003) shows that giving subjects (the impression of) choice significantly increases contribution rates.

Within rational choice, in principle, all decision-making is ad hoc. Empirically, this is highly unlikely. People take thousands of decisions a day. They do not systematically collect all the information available. Rather they rely on their routines for most of the decisions most of the time. Together with the Berlin Max Planck Institute, the institute has organized the Dahlem conference on "Heuristics and the Law". While most of the conference was about the law as a tool, Christoph Engel (2004e) has contributed a paper on problem definition. In the interest of being able to compare to public goods theory, he has developed an (informal) model of routines, and derives predictions for the presence or absence of collective goods problems.

In psychological terminology, rational choice is a pure model of motivation. There is, of course, an avalanche of work on information asymmetries. But they precisely become tractable by translating the information environment into an element of strategic interaction, i.e., into a motivational problem. Actually, cognitive problems are no less cumbersome. Christoph Engel (2005b) has written a book to demonstrate this with respect to predictability. The book starts out with a précis of the findings on human behavioral dispositions. They demonstrate an almost innumerable set of possibilities for the behavior of potential interaction partners. In a game-theoretic model, he shows how demanding it is to overcome predictability problems, even if one artificially narrows the scope of the problem down to just two types of interaction partners. Once one takes the true variance into account, all interaction would have to fail altogether. Of course, this is not true in reality. The book claims that this is due to pervasive institutional intervention. The main task of institutions is thus not seen in checking socially detrimental motivation, but rather in generating opportunities for meaningful interaction. Put differently, the book interprets predictability as an (essential) collective good.

2. *Institutional Intervention*

Behavioral analysis points to new opportunities for institutional intervention, and it casts a different light on known interventions, and on the law in particular. We have been interested in both.

The former is center stage in the dissertation by Jörn Lüdemann (2004). A decade ago, the German legislator settled down for a reinterpretation of the overall goal in waste management policy. The legislator was no longer content with preventing waste from harming the environment. It became more ambitious and wanted to minimise the use of natural resources. This implied the sub-goal of recycling in kind whenever technically possible and economically affordable. A major source of waste is packaging. A major fraction of packaging is plastics. The German legislator insisted that a very high fraction of plastics in packaging should be recycled in kind. This was possible only if households were willing to separate waste. It was obvious that command-and-control regulation would not be able to bring this about. Government would have had to send out waste patrols into people's homes. This is why policy-makers invented an ingenious scheme for making separating waste a moral-backed routine in the German population. It simultaneously addresses packaging industry, goods producers and retailers by financial incentives, and consumers by moral suasion.

What does make institutional design behaviorally informed? Martin Beckenkamp (2004) explores a striking parallel to technology: the idea of ergonomics. Indra Spiecker and Stephanie Kurzenhäuser (2005) provide an illustration with respect to mandatory information provision (in the area of epidemic diseases). Individuals untrained in statistics are not good at handling information about probabilities. Things become even worse when the statistical information is about conditional probabilities. Yet psychologists have been able to demonstrate that this is not some mystic limitation of the human cognitive apparatus. It simply is a matter of representation. If the information is given in the form of a tree, or if it is presented as so and so many individuals out of a total of x individuals, the failure rate drops dramatically. Harnessing the power of intuition thus helps doctors take the right decisions in the face of data about epidemic diseases.

Most of our work on behaviorally informed institutional intervention has, however, been on the law as a governance tool. We are convinced that a behavioral approach is particularly conducive for this. Of course, there are not many legal rules entirely without sanctions. Yet the expected negative utility of being hit by a sanction is hardly ever higher than the positive utility from ignoring the law. This is partly due to what is known as the implementation deficit, and partly due to limitations resting in the rule of law. Lawyers nonetheless, and rightly, firmly believe that the law is not feckless. Building on earlier explorative work (2001), we are in the process of uncovering the secrets of the law, as it impacts on behavior.

An element already worked out is this: Each law student in the first year has a disturbing experience. Just reading the text of statutory provisions is hardly ever enough to solve a case. One needs a few years of professional training to give useful answers to legal

questions. Even worse, most of the law's subjects have never had access to the text of the provisions that are meant to govern their lives. How is it nonetheless possible that a legal command helps overcome a collective goods problem? There are several behavioral concepts that can be used to solve the puzzle. Depending on which of these concepts has most explanatory power, the choice of law as a tool, and the actual shape of the legal provisions, should look quite different. A first approach holds to the idea of reasoned choice. Legal provisions might then impact on behavior by changing attitudes, as explored in Thomas Baehr's dissertation (2005). A more radical approach by Christoph Engel (2004c) goes back to the idea that most behavior is controlled by routines. A new legal provision must then trickle down through channels like media coverage or professional associations into a change of routines. One of the four groups at the Dahlem conference on "Heuristics and the Law" has been reasoning along similar lines.

At Dahlem, another group looked at the implications of heuristics for court procedure. The conference on "The Impact of Court Procedure on the Psychology of Judicial Decision Making" applies behavioral analysis to the actions of the judicial personnel. Christoph Engel (2004a) has contributed a paper on the distinction between the actual decision-making and its representation. On the initiative of the researchers in the project, we have been preparing a book meant to introduce behavioral law and economics to the German legal community. One obvious normative point is not only dealt with (by Markus Englerth) in this book, but also in a separate publication by Anne van Aaken (forthcoming 2005): Is behavioral law and economics opening the floodgates to paternalism?

Quite a bit of our work is concerned with the interface between the law and the social sciences. Since behavioral law and economics is still a rather new phenomenon, most of the existing publications on these issues have focused on law and economics. But there is no reason in principle why behavioral findings should be easier to digest, in particular if they originate from experimental economics. We have been approaching the issue from three angles. Some of our contributions are doctrinal. Christoph Engel, (2004d) for instance, shows that antitrust market definition need not necessarily be carried out in terms of (cross-) price elasticities. An alternative approach is cognitive and rests on the claim that the delineation of most markets is a cooperative endeavour among the competitors themselves. Hardly any legal dissertation can avoid asking for the constitutional-law implications of findings from the social sciences. A good illustration is Melanie Bitter's (2005) book on mechanism design as a tool for public administration when regulatory addressees hold private information. Christoph Engel (2002a) has written a piece systematically exploring the legitimate aim in the principle of proportionality as a doctrinal opening for the social sciences.

Our second approach shifts from considerations *de lege lata* to considerations *de lege ferenda*. In academic discourse, this shift is often viewed as an all too easy escape from doctrinal strictures. It seems that this feeling is buttressed by the impression that anything goes in policy-making. As a description of the actual making of new law, this may not be so far off the mark. But this is not to say that designing new law could not be serious science. Christoph Engel has been writing a number of pieces on this point. He explores

the many limitations to, and the remaining opportunities for, the project of rationalising the making of new law (2005c). He shows under which conditions the social sciences may help policy-makers evaluate the performance of existing law, and the potential role of the constitutional court in this (2003a). Another paper looks at legal decisions under uncertainty in particular (2002b). A last piece explores the reasons for the widespread resistance to opening legal science up for approaches from the social sciences (2005a).

Our third approach assesses the power of competing paradigms from the social sciences for legal purposes. This is, of course, where the positive and the normative implications of rational choice are assessed. This is done in the dissertations by Anne van Aaken (2003), by Melanie Bitter (2005), and in a paper by Jörn Lüdemann (2004). Anne van Aaken (2005) has been exploring discourse analysis as an alternative. Christoph Engel (2003b) has looked at egalitarianism. Finally, Christoph Engel (2004b) has investigated the internal norm of consistency, rather than an external paradigm. This has been done in the framework of the conference "Can Inconsistency Be a Value?".

3. Political Institutions

Finally, a smaller contribution to the behavioral analysis of political institutions is worth mentioning. At the Dahlem conference on "Heuristics and the Law", one of the groups looked at the role of heuristics in making new law.

III. Research Agenda

1. Problem Definition

The specification of the actors under consideration is by far the most urgent desideratum with respect to a behaviorally informed definition of collective goods problems. The large majority of experimental findings from both psychology and behavioral economics are on the isolated individual. There is, of course, a long tradition of group psychology. But these findings are usually generated with ad hoc groups. Neither of these things is surprising since bringing context into the lab is difficult, and it exposes the researcher to the risk of peer criticism on methodological grounds. Unfortunately, most collective goods problems do not originate in the isolated individual. Often firms play a role in the very origin of the problem, as in industrial emissions. Even if institutional intervention ultimately addresses the behavior of individuals, policy-makers strive to reconstruct the problem such that they can intervene into firm behavior. They, for instance, impose catalytic converters, rather than restraining people from using their cars. This is due to the fact that firms normally are much better regulatory targets. Consequently, it would be highly desirable to know more about the behavior of corporate actors.

Unfortunately, this is a daunting task. We nonetheless hope to make some headway. But realistically, we will never be able to contribute more than a few (hopefully elucidating)

elements to the empirical picture. Since exploring the behavior of corporate actors is not an industry in other places either, we have opted for a two-pronged strategy. Along with the attempt to generate at least some empirics, we will try to invest in theory as well. There are already a rich array of theoretical perspectives, ranging from individualistic approaches like corporate governance and the theory of the firm to holistic approaches epitomized by systems theory. Concepts of emergent patterns are situated at the interface of these perspectives. Legal experiences with corporate law provide further insights, as does a systematic comparison between the machinery of individuals and corporate actors for generating behavior. In the first tack, we want to synthesize these scattered approaches. To that end, the results of the conference on "Interacting with Corporate Actor" and Christoph Engel's paper (2005d) written for that conference will be helpful.

In the behavioral critique of rational choice, the limitations of the human cognitive apparatus have been featuring prominently. "Biases" is a term for cognitive limitations. While the opposing "heuristics" approach comes into disagreement with it on normative grounds, it does not take issue with the definition of the problem. Cognitive limitations were also the starting point of the "Heuristics and the Law" conference. Now it has been demonstrated that (adequately trained) monkeys are near perfect Bayesian updaters; humans are awful at this if they are not trained statisticians. The apparent puzzle is solved if one looks at how monkeys generate the surprising behavior. They do not reason; they rely on subconscious signals. The ability to subconsciously process information is even more powerful in humans than in monkeys. Can this power of subconscious, parallel processing be harnessed to the provision of collective goods? How does it interact with the limited, but still unmatched, human ability to consciously and serially process information? These are the questions to be dealt with at the Dahlem conference "Better Than Conscious", jointly organized with the Max Planck Institute for Brain Research.

The habilitation project by Stefan Magen on behavioral theories of justice capitalises on input from experimental economics, psychology, and the neurosciences. It is situated at the intersection between problem definition and problem solution. If the individuals' sense of justice is hurt, this may aggravate an otherwise solvable collective goods problem. The wounded sense of fairness may even generate a collective goods problem in the first place, if it results in violent conflict. Restoring the sense of justice by legal intervention is then a causal therapy. If the law reacts to other collective goods problems, it may capitalise on the sense of justice in society, while also being restrained by it.

2. Institutional Intervention

Melanie Bitter is currently exploring a habilitation project that would use a behavioral approach to better understand, and maybe also improve, the institutional framework for the dealings of public administrations with their addressees. In a provocative book, Tom Tyler has claimed that people do not obey the law because they believe it is just, or because it has originated in the constitutionally guaranteed framework for making new law.

Rather, the most important element is how people are dealt with in the rare instances when they come in close contact with the administrative apparatus. Bitter's project would thus mainly explore the institutional interventions aiming at what economists sometimes call procedural utility.

In the past, the collaboration with the Berlin Institute on Human Development has been most fruitful and enlightening for both institutes. We therefore plan not only to continue, but to deepen the cooperation by forming a formal research alliance. The cooperative endeavour shall focus on the impact of institutions on behavior.

In the U.S., behavioral law and economics is clearly a success story. One reason for that is that it provides critics of law and economics with a conceptual and an empirical base. As laid out above, we see a lot of value in the approach. But we feel that the access of the law to behavioral knowledge should not be confined to the indirect route via economics. Rather, the law as a governance tool should profit from direct interaction with psychology. In a project under the programmatic heading "New Law and Psychology", we want to promulgate the idea.

We also intend to further pursue our investigations of the interface between the law and the social sciences. In his dissertation, Stefan Tontrup treats the problem from the vantage point of legal philosophy. In addition, a symposium jointly organized with the Max Planck Institute on Intellectual Property, Competition and Tax Law invites senior figures from private law, public law, and criminal law to define "The Proper Task of Legal Science".

3. Political Institutions

Last, but not least, Indra Spiecker's habilitation project on "State Action in the Face of Uncertainty " relies (inter alia) on behavioral findings for developing a normative framework for legislative and administrative decisions under conditions of uncertainty. The most pronounced behavioral aspect in this endeavour is work on risk perception. But the hindsight bias also figures prominently. It serves as a critical backdrop for the otherwise convincing advice to the legislator: regulate as little as a possible when facing uncertainty. For psychological reasons, the courts might not be in the best position to later make fairly abstract statutory provisions truly applicable. Regulatory impact assessment is one increasingly important tool in making new law and assessing the effectiveness of laws. Behavioral assumptions underpinning the Impact Assessment ex ante and ex post are crucial for the accuracy of the assessment. The theory and praxis of regulatory impact assessment in Germany is the topic of a paper presented at the British Ministry of Economics by Anne van Aaken.

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C.II.2 Completed Work: Detail

C.II.2.1 Research Initiative "Forms and Limits of Rationality"

In 2001, the President of the Max Planck Society established a research initiative meant to foster the cooperation among several Max Planck Institutes working on a joint topic. Four Max Planck Institutes then joined forces: The Max Planck Institute for Human Development (Berlin, Prof. Gigerenzer), the Max Planck Institute for the History of Sciences (Berlin, Prof. Daston), the Max Planck Institute for Psychology (Munich, Prof. Prinz), and the project group on law of collective goods, now transformed into the Institute for Research on Collective Goods. The President endowed the research initiative with funds for organising conferences, buying additional literature, and exchanging personnel. The latter component was structured the following way: For the duration of three years, the Institutes for Human Development and the project group were endowed with one position at the BAT IIa level, meant to build stronger links between the research teams of professors Gigerenzer and Engel. While the Berlin Institute used these funds to hire Stephanie Kurzenhäuser, the President allowed the project group to postpone the use of these funds until 2005. Recently, these funds have been used to hire economist Andreas Nicklisch. He will regularly be spending time in Berlin. Finally, the Institute for Psychology has been endowed with one BAT IIa position for an experimentalist. This position was held by Dr. Petra Hauf.

The main result of the research initiative has been the organization of a set of conferences. All conferences have resulted in publications. In all cases, the publication process is about to be completed. The interaction between Bonn and the Institute for Human Development has led to the Dahlem conference "Heuristics and the Law", with contributions now to be published by MIT press. The interaction between Bonn and the Institute for The History of Sciences has led to a sequence of two conferences under the topic "Can Inconsistency be a Value?" Participants of the first conference have been willing to fundamentally revise their contributions in light of the discussions. A small number of new papers have been added. The results will appear as a volume of this Institute's book series. The collaboration with the Institute for Psychology has deliberately started with an exploratory workshop. From the outset, we were aware of the huge distance between the Munich Institute's focus on very basic mental processes and this institute's focus on institutional analysis and design. During this workshop, it indeed turned out that holding two separate conferences seemed more appropriate. We have actively participated in the planning of the each other's conference and have, of course, attended them. In the case of the Bonn Institute, Prof. Prinz has established the contact with social psychologist Prof. Strack from Würzburg. Together with Prof. Strack, we have organized the conference on "The Impact of Court Procedure on the Psychology of Judicial Decision-Making". The results of this will appear as a special issue of the journal "Law and Policy".

In the case of the Institute for the History of Sciences and of the Institute for Psychology, these publications will terminate the formal cooperation, at least for the time being. In the

case of the Institute for Human Development, however, we have decided not only to continue, but to further strengthen our formal cooperation. We are planning to establish a research alliance along the lines laid out in the summary account printed above. During the Dahlem conference, but also in numerous smaller workshops, individual visits and informal contacts, our research agendas have steadily become more and more influenced by each other.

C.II.2.2 Heuristics and the Law

Dahlem Conference 2004

Organized jointly with the Max Planck Institute for Human Development, Berlin

Under the auspices of the Research Initiative "Forms and Limits of Rationality"

To be published by MIT Press

I.

Why do people rely on heuristics instead of logic, the maximization of utility, or some other optimization technique? Open a textbook, and the answer likely to be given is that people have limited cognitive capacities, such as memory. Such an account is consistent with the internalist bias of much of cognitive psychology, in accord with which explanations for behavior are sought exclusively inside the mind.

There is a different answer proposed by Simon and Gigerenzer and Selten. Heuristics are needed in situations where the world does not permit optimization. For many real-world problems, optimal solutions are unknown because the problems are computationally intractable or ill-defined. Important issues such as what to do with the rest of your life, whom to trust, and whom to marry are typically ill-defined, that is, there is uncertainty about the goals, about what counts as an alternative and how many there are, about what the consequences might be, and about how to reliably estimate their probabilities and utilities. Yet when optimal solutions are out of reach, people are not paralyzed into inaction or doomed to failure. We act by habit, imitation of others, and trust in institutions, on reputation or a good name. Moreover, even well-defined problems may be computationally intractable, such as chess, the classic computer game Tetris, and the traveling salesman problem. Such problems are characterized by combinatorial explosion. In statistical jargon, they are NP-hard.

In dealing with ill-defined or intractable problems, the rationality concept underlying the rational choice model is not an appropriate norm. Rather, the norm must be adapted to the environmental structure. Rationality must be ecological rather than formal. In such contexts and for such tasks, heuristics often perform at least as well as formal rationality,

if not better. Internal cognitive constraints, such as limited memory and forgetting, can actually enhance rather then constrain performance.

Complexity and uncertainty are not just out there. No trained economic modeller would maintain that her model captures the complexity of the social phenomenon under study. She would, on the contrary, be proud of the parsimony of her model, which allows us to see sharply the effect she is interested in. What matters, however, is the degree of complexity and uncertainty taken into consideration by the decision-maker. Traditionally, and for good reason, the law is not content with just seeing effects. It aims at what any scientist will consider futile from the outset: understanding all the relevant features of the problem at hand. This is what justice calls for, after all. Given this definition of the legal task, the use of the concept of heuristics is particularly appropriate. It is made for decisions under conceptually unmanageable complexity or under uncertainty.

II.

The heuristics program in psychology asks two overlapping questions: Why, and under which conditions, does ignoring information work? When do people actually rely on simple heuristics for decision-making? In the interaction between psychology and law, this generates two overlapping topics: heuristics as law, and heuristics as a fact to be taken into account by the law.

Can the law, as it stands, or the practice of generating and applying law, be interpreted in terms of heuristics? Would the law be better off in any of these respects if it (further) opened itself up to the idea of heuristics? These are the questions to be asked under the heading of heuristics as law.

Heuristics is a factual matter for the law in a number of dimensions. Heuristics impact on the behavior of two classes of actors, those addressed by the law, and those who make and apply it. Rule generation and rule application can react to heuristics among addressees, and both can themselves be the result of heuristics at work.

Heuristics among the law's addressees are relevant for the law in two respects. First the law must properly reconstruct the governance problem to which it responds. If potential addressees rely on heuristics, rather than on optimization, this may diminish or increase the social problem. Second, designing a good rule is not enough. The legislator must also make sure that the rule has the intended effect. The law must therefore anticipate how its addressees are likely to react to its intervention. Again, the prognostic assessment will look different if the addressees are likely to rely on heuristics, not on optimization.

Heuristics may be of help in the making of new law. In the civil law countries, the ordinary mechanism for this is legislation. Consequently, the design of new law is best understood by studying the political process. A standard model from political science facilitates this understanding, the policy cycle. It stylises an often messy chain of events into five steps: agenda setting, problem definition, policy choice, implementation and evaluation.

Each of these steps is heavily influenced by the heuristics of those contributing to legislation.

Finally, the process of rule application can capitalise on heuristics. Yet the legislator or the scientific observers of the legal order can also view the heuristics of judges and administrators as a problem.

III.

The issues discussed make one point obvious: The various positions on heuristics and the law are developing and incomplete; each can learn from the other; and there are signs of convergence. It is with this perspective in mind that we asked proponents of all positions to come together for five days to discuss the issues. Our goal was to use the existing healthy tension between various approaches to help to promote the emerging field of law and psychology. We have centered the discussion on four broad questions.

Are heuristics a problem or a solution?

Heuristics have been both presented as the cause of problems and as the means for their solution. After a period in which the dark side of heuristics was emphasized in the early behavioral law and economics movement, few scholars would claim today that heuristics are always bad or always good. But once one moves beyond the formula "heuristics = good; optimization = always better", some interesting questions emerge. Can the use of heuristics be normative? As a consequence, can ignoring information be normative, and if so, in what situation? Can the attempt to optimize be detrimental? What is the role of simplicity and transparency in the law?

What is the role of heuristics in making law?

The German parliament passed a law, effective in 2005, that women between 50 and 69 have access to free screening mammograms. The members of parliament were apparently unaware that randomized clinical trials with some 280,000 women provided no evidence that women who participate in screening will live longer (Nyström et al., 1996). The annual costs, including follow-up treatments of false positives, amount to hundreds of millions of Euros every year. How did such a law get passed in a time of government cuts on health care provisions? The case illustrates that laws do not always reflect scientific evidence or reason, but can arise from an emotional climate fueled by public anxiety and misinformation. What turns an issue into a public issue, and then into a law? What is the role of heuristics in the process of agenda setting and political decision-making?

What is the role of heuristics in the court?

In high-energy physics, experimenters decide when a fact is a fact, and when to end an experiment, by a process of collective discussion in group meetings (Galison). In experimental psychology, this decision is made individually by computing an effect size or simply looking at the level of significance. How do judges, jurors, and other legal fact-finders decide whether a witness is trustworthy or a defendant is guilty? What uncertain cues does a judge attend to, which are most important, and which are ignored? What is the process of searching for information, stopping search, and decision-making? Many legal orders have explicitly prescribed under which circumstances a certain fact may be held in court to have been proven. Some of these rules of thumb appear ghastly to modern minds: If a woman survives cruel treatment, she is a witch; otherwise she is not. Other rules of thumb may have a grain of wisdom in them: You may not convict a person for a serious crime based on the testimony of a single witness, as the common law has it. But what if, as in some Arab countries, you need four eyewitnesses to convict a man of rape? More is not always better.

How do heuristics mediate the impact of law on behavior?

According to some traditional teaching, the law has an impact on behavior through its moral, spiritual, or religious authority. In a rational choice perspective, the law has an impact on behavior because it changes the opportunity structure. But how can the law change behavior when many citizens have only faint ideas what the text of the law is? Hardly anyone consults a statute of a casebook before taking action. Economists adhering to the Austrian school stress following rules as a key element in their evolutionary picture of the world. Rule following, in turn, seems to imply that there are not too many rules, and moral and legal systems may increase the impact of the law on citizens if the law is simple. The Ten Commandments of Christianity embody a simplicity that respects the limits of human memory. The U.S. and the German tax system do not. They create complexity, loopholes and a feeling of helplessness, whereas simplicity can create trust and increase compliance.

IV.

19 Group Report: What Is the Role of Heuristics in Making Law?
J. Haidt, Rapporteur
S. Baer, L. Cosmides, R. A. Epstein, W. Fikentscher, E. J. Johnson, J. J. Rachlinski, C. Sattler de Sousa e Brito, and I. Spiecker genannt Döhmann

20 Group Report: What Is the Role of Heuristics in Litigation?
C. Piperides, Rapporteur
R. J. Allen, M. K. Dhami, A. Flessner, R. Hastie, J. J. Koehler, R. Lempert, J. Schulz, and G. Wagner

21 Group Report: How Do Heuristics Mediate the Impact of Law on Behavior?
D. G. Goldstein, Rapporteur
H. R. Arkes, M. Beckenkamp, R. Cooter, R. C. Ellickson, C. Engel, C. P. Guthrie, R. Hertwig, S. Kurzenhäuser, and E. U. Weber

C.II.2.3 The Impact of Court Procedure on the Psychology of Judicial Decision-Making

Organized jointly with Fritz Strack, Würzburg

under the auspices of the Max Planck Research Initiative: Forms and Limits of Rationality

To be published in a special issue of the Journal "Law and Policy"

Procedure matters, granted. But why, and how? Judicial decision-making is a particularly suitable topic for studying this general question. There is hardly another context in which decision-making is that densely embedded in a host of formal and informal institutions. Courts do not themselves have the right of initiative. They must wait until a plaintiff or the attorney general bring a case before them. These actors also define the issue. The court is not allowed to go beyond the claim, unless both parties voluntarily agree on a broader definition. Most importantly, courts are not free to determine the output. It is their task to apply the law in force to the facts of the case, as presented by the parties. The potentially applicable substantive rules do thus delineate the solution space. In order to become decision relevant, facts must go through strictly defined procedural routes. If a fact is contested, it may only be taken into account if formally proven. There is an exhaustive list of evidence admissible in court. Informal rules, for instance, determine the structure and the wording of the pleadings, and of the representation of the final decision to the parties and to the legal community.

There is a radical counter-position. It has a descriptive and a prescriptive dimension. Descriptively, it is argued that procedure is irrelevant for understanding, or predicting, behavior. Specifically, procedure is taken to be irrelevant as long as it does not translate

itself into a restriction. For in this perspective behavior is exclusively explained by preferences and restrictions. This is, of course, the position of the rational choice model. Mantzavinos raises an epistemic and a practical objection. Epistemically, the rational choice model is a rational reconstruction of behavior, not an explanation. It does thus not rely on law-like statements that could be tested empirically. Practically, if one ignores procedure, one overlooks the very essence of legal decision-making. It consists of "interpreting the rules of the game" in society.

An equally strict prescriptive counter-position is to be found in the Kahneman/Tversky program. Here, the dependence of behavioral output on procedure is seen as a bias. Preferences are shown to be context dependent, reference dependent, or dependent on the procedure of eliciting value. Biases are defined as systematic deviations from a standard for good behavior. In the Kahneman/Tversky program, the rational choice model provides the benchmark. It is thus turned from a descriptive into a prescriptive tool.

The biases program has made headway into legal territory. There is also an emerging interest in biases in judicial decision-making. However, to the best of our knowledge, so far no lawyer has taken the dependence of judicial decision-making on court procedure to be a bias. It is equally unlikely that legal scholars believe court procedure to be just irrelevant for the output. Consequently, they must implicitly believe the impact of court procedure to be positive, at least on balance. This position invites a two-pronged program. Descriptively, the behavioral effects of court procedure must be fleshed out. Prescriptively, the norm for these effects must be defined. The conference has tackled both, without, of course, being able to exhaust either topic.

The bulk of the papers assembled in this exercise, implicitly or explicitly, are written in the predominant law and psychology tradition. Decision quality is taken to be the norm. In criminal cases, defendants should not be at the mercy of the attorney general (Englich and Strack). Judges and jurors should not rely on eyewitness testimony where it is faulty (Sporer). Representation norms should be such that the actual decision-making is improved (Engel). Tyler does not deny the importance of this quest for better quality. But he insists that decision quality should not be the sole concern in designing judicial procedure. Conveying a sense of procedural justice to the parties is at least as important. How people feel treated when they occasionally come into contact with the legal system is the single most important predictor for law abiding behavior in the future. Moreover, public trust in the judicial system, and the legitimacy of the law as a social institution, hinge upon perceived procedural justice.

The legal system is an extraordinarily rich institutional arrangement. Many of its features are not the result of purposeful design. Rather they have incrementally been shaped by collective experience over many centuries. Consequently, the conceptual tools from the social sciences, and the empirical findings generated in basic research, often help uncover functional relationships the legal community had at best implicitly understood. The relationship between the generation and the representation of judicial decisions is one of these issues. Previous treatments of this relationship have mainly come from sociology.

Engel supplements these studies by a behavioral perspective. Existing representation norms are shown to mainly have a beneficial effect on the actual judicial decision-making. The one relevant concern is the fact that representation norms make accountability salient. In principle, the effect of accountability on decision quality is at least ambivalent. In this specific context, however, the negative effects are likely to be small.

All over the world, in criminal procedure, the defendant has the last word. This seems an obvious act of fairness. However, if there are no sentencing guidelines, like in the U.S., criminal courts have considerable leeway in determining sanctions. Psychologically speaking, judges are facing a decision under perceived uncertainty. Specifically, they need a quantitative metric for metering out sanctions. These are the kind of situations where decision-makers are under the spell of the anchoring heuristic. Almost any arbitrary number may serve as a reference point. Englich and Strack demonstrate that the attorney general's request has the same effect. This raises an obvious normative point: Should the attorney general no longer be allowed to plead first? The psychologically informed defendant should want to reserve to his own attorney the privilege of setting the anchor. This might, however, be at variance with the same individual's psychological need for procedural justice.

Distrust in witness testimony is not new. In the Middle Ages, in criminal procedure, one witness was not enough for conviction. The minimum number was two, and both had to be free citizens. This reasonable scepticism directly led to torture. For the only other legally acceptable ground for holding the defendant liable was his pleading guilty. Of course, defendants were not regularly prepared to do so. Torture seemed the only way out. Happily enough, today in civilized countries, torture is out of the question. Moreover, new and reliable means of evidence have been found, like DNA evidence. The legal order could therefore afford greater scepticism regarding eyewitnesses. Sporer not only demonstrates why eyewitness testimony is often dubious evidence. He also shows that and why judges and jurors systematically overrate the reliability of this means of evidence. Finally, based on empirical evidence, he recommends to replace the simultaneous by the sequential lineup of suspects. While the number of false negatives slightly increases, the number of false positives is dramatically reduced.

After the fact, scientific progress is usually portrayed as a continuous, at best, as an exponential function. There is a defined starting point. After the development has been put on track, it rapidly gains momentum, and it logically and inevitably leads to a breakthrough. Of course, science as practice is different. Here, the metaphor of a network has a much better fit. Finding fruitful, but unexplored links between disciplines and approaches is what opens up new avenues for good science. This conviction has been behind the assembly of this set of articles. It should have appeal to three different audiences: lawyers and institutional designers; applied psychologists; basic scientists interested in the interaction between institutions and behavioral dispositions. These three audiences will read the papers with a different interest. But all of them should be able to gain new insights for their research questions.

Papers

Mantzavinos, C.: Interpreting the Rules of the Game. Law and Public Policy (forthcoming 2005).

Tyler, T.: Task and Socio-Emotional Aspects of Decision Quality: Why is Representation Important?

Engel, C.: The Impact of Representation Norms on the Quality of Judicial Decisions. Preprints of the Max Planck Institute for Research on Collective Goods 2004/13. http://www.coll.mpg.de/pdf_dat/2004_13online.pdf.

Birte Englich/Fritz Strack: Blind or Biased? Justitia's Susceptibility to Anchoring Effects in the Courtroom Based on Given Numerical Representations.

Sporer, S. L.: Evaluating Eyewitness Testimony: The Fallacies of Intuition.

C.II.2.4 Can Inconsistency Be a Value?

Series of two Conferences

Organized jointly with the Max Planck Institute for the History of Sciences, Berlin

Under the auspices of the Research Initiative "Forms and Limits of Rationality"

To be published in the Institute's Book Series

I.

Just asking some questions is enough to incite revolt. Can inconsistency be a value? Naturally, the scientist or scholar spontaneously answers, no. For isn't consistency simply another word for intellectual integrity? Should intellectual tricks now be ennobled? Isn't praising inconsistency tantamount to declaring the bankruptcy of science?

The fact that actions can be inconsistent may be due to the imperfection of the actors. The internal contradictions may also be the work of opportunistic individuals, seeking their own advantage. But the following examples suggests that inconsistency can indeed be a value: in nature and in social interactions, in law and even in science.

II.

Does a hare act irrationally when it darts back and forth? The fact that its escape route is not predictable may save its life when a predator is in hot pursuit. Those who make deci-

sions on the basis of rules of thumb and heuristics accept that their decisions are only consistent in the applicational horizons of the heuristic. As compensation, however, they are able to reach quicker and sometimes even better decisions.

If a perfect symmetrical game has numerous equilibria, it may be possible to solve it only if one player's hand 'trembles'. If the opponent sees that, this mistake leads to a resolution of the game for both players. Compromises are often only to be had if each side breaches its principles. If those involved were forced to change their principles for the sake of the compromise, compromises would be much more difficult to reach. Laws often join incommensurable elements; otherwise no agreement would be made between the interest groups. Then, at best, adjudication can subsequently bring about consistency. Those who want to win others over to their cause will often have it easier if they proceed according to the Latin motto: divide et impera! For different addressees, they find different, incommensurable reasons. The politician's craft of keeping the social peace can consist in conveying the impression to political groups that their conflicting demands have been met simultaneously. Identity is often founded upon formulas that everyone can understand as they wish. Those familiar with the fundamental relativity of normative arguments must allow parallel, but mutually exclusive arguments for the very same finding. And there is the tried-and-true Catholic solution to the conflict between precept and practice: honoring the principle from the pulpit, while offering mercy in the confessional. But the rule need not be abandoned because it cannot always be enforced. If resistance is too strong, government does sometimes not enforce a rule vis-à-vis some of its addressees. The enforcement activities thereby inevitably become inconsistent, since government does not touch upon the validity of the rule, and it does not feign its inapplicability in the case at hand. But such flexibility may be indispensible for preventing the rule from collapsing altogether.

Coherent conceptions are long-term cultural achievements. It is thus imprudent to repudiate a conception if it is falsified in reference merely to a single matter. Judgement also ought to be employed when enhancing conceptions with additional elements. The trade off between parsimony and fit cannot be overcome. Moreover, those who are searching for new solutions must willingly attempt what cannot be carried out consistently within the accepted model. Again and again, progress in the natural sciences has only been possible because one science, aware of the state of the art in other sciences, has decoupled itself from this knowledge base and searched for its own, sometimes incommensurable, solutions. The more complex an object of research, the sooner even the science studying it will have to accept internal inconsistency – at the level of guiding principles, such as explanation versus prediction, or at that of specific theories – as the price for knowledge. This applies, for example, to dynamic versus statistical models in meteorology and in the physics of turbulence. One interpretation of quantum mechanics has even had more unsettling effects. It was only possible to explain things here once it was accepted that nature itself is inconsistent. The micro- and macro-levels of the same phenomenon follow contradictory laws. Scientists and philosophers are now asking whether this principle of heterogeneity applies much more generally, resulting in a patchwork of theories and

models that work well in their circumscribed domains, but which cannot be unified into one grand theory.

Where inconsistency is valuable, institutions see to it that it is made quietly bearable. There are divergently oriented and divergently comprehensive strategies, for which legal systems provide a range on instructive examples. If the incommensurable concerns are recognized as such, differentiation can help. Every concern is allocated to a different institution. The various institutions are not related to each other formally or lineally, but functionally. Every institution respects the autonomy of the others, and indeed counts on it. For example, the separation of substantive law and procedural law characteristic for continental law makes it possible to entrust conflict resolution to procedural law, thus keeping substantive law free from inconsistency with other cases less fraught with conflict.

A second strategy restricts the field of conflict. It limits the decision. Sometimes the theoretical inconsistency does not matter in the concrete case. The restriction to the individual case leaves open the question as to whether the decision is consistent with other areas of life. Courts apply these strategies, for example, if they decide about a new social problem strictly in the case. Another case in point is the selection of case-law, as opposed to codification (which forces consistency).

A third strategy has been developed by cultural theory. It presumes that conflicting concerns will openly be kept in place, and it strives to prevent one of the concerns from permanently gaining the upper hand: stability via permanent change. This apparent paradox might be likened to a swarm of insects. It appears to hang in the air. That is because every single insect is in constant motion. Their course is not predetermined. Each reacts individually to the movement of the others. The legal technique of weighing competing values is not so far removed from this idea. It openly accounts for the incommensurable concerns, and in individual cases relates them to one another.

The fourth strategy is more radical still. It waives all reasons, thereby concealing that one decision contradicts other decisions. In German law this is by no means rare. Government is under no obligation to officially declare the purpose of a new legal rule. This is taken even further in German penal law. It requires that the judge be personally convinced of the guilt of the accused. It is categorically impossible to substantiate this. American law refers decisions that rely on inconsistency to a jury. Because it consists of laymen, no substantiation can be expected here either.

III.

Coherence, consistency, rationalization, justice: this loose cluster of concepts and values defines a logical and sometimes also a moral standard across learned disciplines and practical applications. Internal consistency is usually a minimal requirement that scientific theories must satisfy; rational choice theorists demand that decision-makers honor consistency in rank-ordering their preferences. Jurists sporadically argue that legal codes

should be rationalized in the name of justice in order to insure equality under the law; bureaucrats and industrialists make analogous cases in the name of efficiency. Coherence is sometimes upheld as a metaphysical value in the sciences: If nature is unified, so ultimately must the sciences be. Philosophers cite coherence as a precondition for intelligibility, while psychologists and anthropologists invoke the same notion to describe and explain how disparate beliefs are integrated into a culture or a personality. Advocates of one of these standards easily slide into appeals to the others: for example, a call for justice in the meting out of punishments for crimes can quickly lead to a discussion of the rationalization of legal codes or the consistency of jurors and judges. Because one cognitive and moral value buttresses the others, there is a strong tendency to blur the conceptual distinctions among them, and to assume that all are self-evidently and always desirable.

Determining the extent to which there might be value in inconsistency thus presupposes understanding how the members of this cluster function, both singly and together, in a range of academic and practical contexts, including law, economics, philosophy, and anthropology. It also seems that the distinctions and interactions among members of the cluster must inevitably be examined, using both contemporary and historical examples: how and when did they become a cluster, and why does it remain so, despite obvious differences among its members?

IV.

Disciplinary traditions are markedly different in their thinking about inconsistency. This has made it advisable to invite scholars to present their thoughts on the general topic from their disciplinary angles, but to have these views discussed by scholars from different traditions. This has resulted in the following table of contents for the volume:

Alex Kacelnik (biology): Inconsistency in Animal and Human Choice

Comments by William Wimsatt (biology) and Gerd Gigerenzer (psychology)

Christoph Engel: Inconsistency in the Law: In Search of a Balanced Norm

Comments by Christopher Kutz (law) and Edna Ullmann-Margalit (philosophy)

Perri 6 (sociology): Viable Institutions and Scope for Incoherence

Comments by Steve Rayner (anthropology) and David Bloor (history of science)

C.II.2.5 Causes and Management of Conflicts

Causes and Management of Conflicts

20th International Seminar on the New Institutional Economics

I.

In ideal types, conflicts of interest can be distinguished from conflicts of identity. Interests clash because resources are more limited than desires. In the world of Adam Smith, the invisible hand of the market turns individual selfishness into social welfare. Game theory has demonstrated that this is no more than a special case. Workable competition forces all actors to play a game against nature. This implies that, in the absence of workable competition, conflicts can originate from strategic interaction. Distributional conflict looms large. For in practical terms, there is almost always more than one workable solution to real social problems. And these solutions systematically have different distribution effects. Conflict can also originate from the will of one of the parties to build a reputation for being a tough fighter. Individuals can and will strategically invest in building blocking coalitions. Conflict can result from the fact that outsiders invade a homogeneous population. Conflict can originate from divergent risk preferences, different beliefs, or different ways of updating them after new bits of information have been revealed. Individuals can speculate on evolutionary paths, or they can even try to create path dependence in the interest of safeguarding distributional gains.

Many causes of conflict only become visible once this social embeddedness is taken into account. Individuals do not only care for utility. They also care for identity. Gaining social esteem is therefore a powerful motivator. Being threatened with loss of honour is even more likely to generate conflict. The English language makes the potential for conflict even linguistically obvious. "Having an argument" with somebody is not a description of peaceful discourse. Conflict can, in other words, be over symbols. Conflicts over values are frequent. At closer sight, they are conflicts over how to construct reality. When groups

fight, group members fight over identity. Moreover, the role of emotions for creating conflict should not be overlooked. Spite is among them, as are greed, envy and reactance. The mere fact that they feel subjected to an unfair procedure can generate conflict, even if the chosen procedure leads to a fairer outcome.

II.

In a normative perspective, at first blush, conflict seems obviously undesirable. The cost of conflict is epitomized by physical violence, sabotage, and the violation of property rights. The opportunity cost of economic activity in the shadow of conflict can be even larger. Moreover, conflict can lead to an externality. Actually, however, there are instances where conflict is socially beneficial. Competition is conflict. Other advantages of conflict are evolutionary. A certain degree of conflict serves as beneficial friction. Conflict may also generate variety and thereby help evolutionary progress. It leads to "creative destruction". The proper normative goal is thus not one of maximising, but of optimising peace, or the absence of conflict more generally.

III.

Consequently, fairly often, the law creates conflict where there was none in the first place. Antitrust law safeguards and even fosters conflict in the marketplace. The rich institutional framework for elections and opposition rights does the same for party competition.

An alternative approach is institutionalising conflict. Disputes are submitted to court. Social norms impose the formalities of duel in an honour-based society. Quarrelling scientists are invited to formal conferences. Individuals are obliged to hire a professional lawyer, in the hope that his temper will be cooler. Workers are allowed to strike, but forced to go through a long series of procedural steps before and while they do.

Once conflict has broken out, the task of institutions becomes easier. A classic institutional response is third-party settlement. In legal reality, third-party intervention is often not voluntary. Such mandatory settlement can be justified by the risk of externalities afflicting outsiders, or by paternalism. The latter is characteristic of criminal law, where the victim plays at best a supplementary role. If the conflict is over identity, third parties can help deescalate it. A second regulatory option consists of changing the character of the conflict. For instance, elections are a way of transforming a conflict of ideas into one of interests. A further approach with which institutional intervention can play consists of enlarging or reducing the conflict space. An example is the inflation of honorary titles characteristic of traditional societies. It helps overcome distributional conflict at a fairly low price. Compensation is the crudest form of extending the conflict space.

IV.

C.II.2.6 Interacting with a Corporate Actor

23rd International Seminar on the New Institutional Economics

The formation of the individual remains one of our greatest mysteries. Of course, psychologists, by meticulously controlled experiment, have generated a rich body of knowledge. Experimental economists are following suit. In recent years, non-invasive technologies like Functional Magnetic Resonance Imaging, fMRI, have even allowed us to catch a glimpse of the brain in action. By making blood circulation visible, one may find out which regions of the brain are activated when performing a certain task. Yet we are still miles away from studying the formation of the individual will online, let alone from influencing it from outside.

Against this backdrop, our ability to observe and to control the formation of the corporate will is impressive. We can go to a board meeting, read the minutes of earlier meetings, talk to the chief executive officer, study how the workforce is treated by management, read the stock exchange prospectus, or interview the creditors and the clients. We can even have ourselves invited to a board meeting and raise our concerns, have our representative become a permanent member of the firm, team up with other stakeholders and build a coalition against the ruling majority, or buy enough shares to oust the current management.

Of course, hard-nosed methodological individualists would find the parallel inconclusive. For them, the "corporate will" is nothing but slippery, metaphorical language. In their view, descriptively sound knowledge is only to be generated by focusing on the individual as the unit of analysis. If individuals act within corporations, this changes the opportunity structure; period. Likewise, prescriptively, the appropriate goal is not to change the behavior of some mystic supraindividual being. All one has to do is target the relevant individuals, as they act in the institutional framework of the corporation.

Yet in our daily dealings, we quite naturally think and speak of the behavior of a firm, of an association, a public authority, a social movement, a state, or even an international organization. Depending on our methodological predilections, and on the accompanying beliefs about the dominant causal factors, we think of firms as being driven by profit maximization, good citizenship, or a need for orientation in a complex and uncertain world. Intuitively we are convinced that, once set in action, higher level entities gain some degree of autonomy from the individuals acting within and for them. In so doing, we are good Aristotelians. We are assuming that the whole is greater than the sum of its parts.

Legally, the effect rests on legal personality. It is an elegant invention. One signature by the President of the Republic can oblige 80 million Germans. If the CEO has signed a contract, no shareholder can claim that he had opposed the engagement. Legally, the distinction between the internal generation of the corporate will and its external execution

by the organs of the corporation is (almost) absolute. Piercing the corporate veil is, and must be, a rare exception.

In short, we have a mental model of "corporate actors". This term originated in (rational choice oriented) sociology. From there it has traveled into political science. It is used here as a conceptual tool for organising a set of papers that look at organizations from both sides: the interior and the exterior.

All papers assembled in this special issue exploit the fact that the formation of the corporate will can be observed online. This allows us to understand why corporations reincorporate in a different jurisdiction, why they are risk averse, why they rank opportunities a certain way, why they respect the regulator's will, why they grossly violate legitimate social and political concerns, why they exhibit paradoxical behaviour, and why they give in to raiders.

The papers do, however, use very different features of the formation of the corporate will to explain the effect they are studying. They are looking specifically at shareholders, managers, outside directors, and the organized workforce, or at the process of forming the corporate will more generally, including corporate culture and corporate discourse.

Most papers are based on methodological individualism, i.e., some explicit or implicit rational choice model, including principle-agent theory, social choice theory, public choice theory, and the theory of network externalities. Two papers, however, explore possibilities for bridging the gap between individualistic and holistic approaches. Another paper points to the reciprocal constitution of micro- and macro-structures. Yet another uses a behavioral approach for the purpose. It capitalises on the fact that all cognition is necessarily social.

Some papers are not only interested in observing the formation of the corporate will as a scientific issue. They also want to understand what it means for insiders and outsiders that the formation of the corporate will is open to observation and to manipulation. This can be exploited by shareholders and stakeholders, be they creditors and the workforce, the regulator, and the legislator.

Most papers assume a certain corporate constitution. They are interested in the way it plays itself out in corporate behavior. Three papers, however, predict effects on corporate behavior resulting from an implicit or explicit change in the corporate constitution. Specifically, they study the effects of different aggregation rules, of exposing outside directors to liability, and of giving a representative for the regulatory cause access to the formation of the corporate will.

Finally, many papers are interested in understanding the repercussions of external observation or manipulation from on conflicts within the corporate actor. Since the corporate actor has no forum internum, internal and external conflict are not kept separate. All action within the corporate actor has a dual reference point: the effects on the internal position of the acting individual, and the effects on the interaction of the corporate actor with its environment. It is this dual framework that explains the evolution of corporate

culture. Specifically, insiders may team up with outsiders in the interest of strengthening their position in internal conflict. This holds true for minority shareholders in coalition with raiders and for the workforce in coalition with banks and legislators.

Bar-Gill, Oren, Michal Barzuza and Lucian Bebchuk (2006). "The Market for Corporate Law."

Comments by Fernando Gómez Pomar / Isabel Saez Lacave and Wolfgang Schön

Burkart, Mike, Denis Gromb and Fausto Panunzi (2006). "Minority Blocks and Takeover Premia."

Comments by Peter Mülbert and Eva-Maria Steiger

Engel, Christoph (2006). "Corporate Design for Regulability. A Principal-Agent-Supervisor Model."

Comments by Urs Schweizer and Christian Kirchner

Klausner, Michael (2006). "Outside Director Liability. A Policy Analysis."

Comments by Achim Wambach and Christian Schmies

Langevoort, Donald C. (2006). "Opening the Black Box of "Corporate Culture" in Law and Economics."

Comments by Holger Fleischer and by Christoph Engel / Werner Güth

Perotti, Enrico C. and Ernst-Ludwig von Thadden (2006). "The Political Economy of Dominant Investors." Rock, Edward B. (2006). "The Corporate Form as a Solution to a Discursive Dilemma."

Comments by Heribert Hax and Ulrich Schwalbe

Sorge, Arndt (2006). "Organizing Socially Constructed Internal and External Resources."

Comments by Jens Beckert and Michael Hutter

C.II.2.7 Introducing Behavioral Law and Economics to the German Legal Community

In the U.S., there is no major Law School that would not do substantial work on law and economics. Many of them have hired professors with a Ph.D. in economics. At some schools, the rational choice approach to legal questions seems so pervasive that they have even given up teaching an introductory course. The German situation is significantly

different. Law and economics courses are still rare. If they exist, they normally stay away from heavy mathematics, if not from formal work altogether. Given the comparative rarity of law and economics in the German context, the major school opposing law and economics therefore also finds less fertile ground. The main selling point of behavioral law and economics in the U.S. – namely that legal analysis is misled if it starts from Homo oeconomicus assumptions – will not find many customers over here. Only a tiny fraction of the German legal community has ever been tempted anyhow.

This is, however, not to say that the behaviorally informed analysis of legal institutions would not be fruitful for German lawyers as well. Those who have always been sceptical about the rigour of the rational choice approach might feel more at ease with the richer apparatus of the behavioral approach. Quite a few of the rules of American law analysed with the new paradigm have their counterparts in German law. The second, non-Roman source of German law might lend itself much better to behavioral than to interest analysis. This is not unlikely since Germanic law was based on the idea of community, not on the isolated individual.

In German law reviews, the very first attempts to adopt the paradigm are being published right now. This seems to be a good moment to translate back some of the expertise gained in the project on the behaviorally informed design of institutions for the provision of collective goods to the German legal community. Actually, this is undertaken in a book project, initiated by the lawyers active in the project. The book will be composed of the following chapters:

The book will be composed of the following chapters:

Markus Englerth: Eine kritische Einführung
[Behavioral Law and Economics. A Critical Introduction]

Jörn Lüdemann: Die Grenzen des Homo Oeconomicus und die Rechtswissenschaft
[The Limits of Homo Oeconomicus, and Legal Studies]

Markus Englerth: Vom Wert des Rauchens und der Rückkehr der Idioten. Paternalismus als Antwort auf beschränkte Rationalität?
[The Value of Smoking and the Return of the Idiots. Paternalism as a Response to Bounded Rationality?]

Christian Schmies: Behavioral Finance und Finanzmarktregulierung
[Behavioral Finance and Finance Market Regulation]

Anne van Aaken: Das deliberative Element juristischer Verfahren als Instrument zur Überwindung nachteiliger Verhaltensanomalien
[The Deliberative Element of Legal Procedure as an Instrument for Overcoming Disadvantageous Behavioral Anomalies]

Indra Spiecker genannt Döhmann/Stephanie Kurzenhäuser: Das juristische Darstellungsgebot: Zum Umgang mit Risikoinformation am Beispiel der Datenerhebung im Bundesinfektionsschutzgesetz (BInfSchG)
[The Legal Representation Imperative: On Dealing with Risk Information. An Examination Based on an Example from Data Research in the German Federal Infection-Prevention Law]

Stefan Magen: Eigennutz, Fairness und die Rolle des Rechts
[Egoism, Fairness and the Role of Law]

Christoph Engel: Verhaltenswissenschaftliche Analyse: Eine Gebrauchsanweisung für Juristen
[Behavioral Science Analysis: A User Handbook for Lawyers]

C.II.2.8 Game Theory and the Law

22nd International Seminar on the New Institutional Economics

For this conference, papers have been invited that model concrete legal provisions or concrete legal cases in game-theoretic terms. The organizers were interested in strategic interaction, as it plays itself out in the design and the application of the law. Papers could be both descriptive and prescriptive. In the former case, they would explain existing legal rules as responses to situations of strategic interaction. In the latter case, papers would rely on game-theoretic modelling for suggesting paths of legal evolution. The present volume reproduces the papers that came out in reaction to the above invitation.

The recent book on the foundations of economic analysis of law by Steven Shavell (Foundations of Economic Analysis of Law 2004) conveys the main ideas of the field. It covers the central areas of concern for any legal system. In the following, the seven parts of the book serve as reference points for the scope of the conference. Except for part I on property law and part VII on welfare economics, morality, and the law, the conference papers have touched all the other parts. This seems noteworthy because the organizers had not seen the book at the time invitations were sent out.

Demougin and Fluet revisit the negligence rule of accident law in a situation where the injurer's behavior is only imperfectly observable, following the occurrence of harm. They contribute both to accident law and to litigation and the legal process, i.e., to parts II and IV of the book. The same holds true for Hua and Spier. They consider an injured plaintiff who may be harmed in similar accidents involving different defendants. An information externality arises because the first lawsuit creates valuable information for future disputes.

Schweizer points out that, for some legal traditions at least, contract law and accident law (parts II and III of the book) are the subject of a general law of obligations. Based on this observation, the paper develops the pure theory of damages rules for a multi-party setting. A simple saddle point property, as implied by general principles of liability, is shown to ensure efficient incentives.

Cameron and Kornhauser contribute to litigation and the legal process (part IV of the book). Their paper identifies classes of equilibria in a two-tiered hierarchy where the judicial system is modeled as a set of individuals who share objectives but may have different information.

Hermalin identifies the need for the state's commitment power as the distinctive attribute of wrong doings that should be considered criminal. The paper contributes to public law enforcement and criminal law, i.e., to part V of the book.

Mahoney and Sanchirico raise an issue related to the general structure of the law (part VI of the book). They investigate whether legal rules, in response to informational asymmetry, should be of general or narrow application.

Choi and Talley, finally, offer the only paper which cannot be subsumed under one of the headlines of Shavell's book. It provides a game-theoretic account of the efficiency implications of managerial favouritism towards block shareholders of public corporations and, as such, is a contribution to corporate control.

All papers presented at the conference investigate games either in normal or extensive form. The involved agents or parties are assumed to behave fully rationally such that the outcome of their action can be described as a Nash equilibrium. As is true for other fields, the concepts of game theory have intruded the economic analysis of law. The conference papers nicely illustrate this development.

Dominique Demougin/Claude Fluet: Deterrence versus Judicial Error: A Comparative View of Standards of Proof

Comments by Thomas Gaube and Christian Kirchner

Xinyu Hua/Kathryn E. Spier, Information and Externalities in Sequential Litigation

Comments by Eberhard Feess and Hans-Bernd Schäfer

Urs Schweizer: The Pure Theory of Multilateral Obligations

Comments by Thomas Ackermann and Christian Ewerhart

Charles M. Cameron/Lewis A.Kornhauser: Decision Rules in a Judicial Hierarchy

Comments by Peter J. Jost and Alan Schwartz

C.II.3 Planned Activities: Detail

C.II.3.1 Conceptualising Corporate Actors

The Behavior of Corporate Actors

Conceptual Tools for Understanding the Object of Study

What seems natural in one context appears outlandish in another. This does not only describe how cultural conflict originates. It also describes a major challenge in interdisciplinary interaction. It seems natural to many social scientists, and to institutional designers in particular, to surpass the individual and to analyse or address corporate actors instead. Yet the behavioral sciences predominantly look at the isolated individual. Even if they broaden their view, as some social psychologists do, they are usually interested in unorganized interaction within groups, not in what social scientists have come to call a corporate actor.

Social problems to be remedied by institutional intervention often originate in the behavior of corporate actors in the first place. Take industry threatening the environment, or a union calling for general strike. Moreover, even if the ultimate cause of a social problem is individuals, regulators often see corporate actors as easier targets. Again, environmental protection is rife with illustrations. Automobile exhausts generate a problem for clean air. But policy-makers all over the world have not ordered individual car owners or drivers to behave in a more environmentally sound manner. Rather, they have obliged manufacturers to add catalytic converters to their products.

Collective goods are characterized by a need for intervention. Typically, the decision to intervene is taken in the political process. In policy-making, corporate actors are again prevalent. The elected individual is a rare exception. The elected mayor or the elected judge may come under this rubric. Even these holders of an office often stand for a more or less organized political force. The typical actor in the political arena is a party. If it participates in elections, it cannot but organize. Often, even lobbying is not conducted by individuals (or individual firms), but by associations. Formal organization is self-evident when it comes to those who hold governmental offices. Parliament and the fractions within it, government and its departments, the judiciary and its courts are all formally constituted.

If there is a transnational problem, say climate change, it is governments, acting for their states, that handle it. There are not 80 million Germans individually speaking to 250 million Americans; instead, the German Foreign Minister speaks to his U.S. counterpart. There are even corporate actors above the national level: examples are the European Union or international organizations.

These observations confront institutional analysts and, even more, institutional designers with a serious problem. Traditionally, social problems in general and collective goods problems in particular have been analysed from the vantage point of the rational choice model. This is rightly a growing industry. It has provided policy-making with a rigorous analytical framework and, even more importantly, with a large number of directly applicable pieces of advice. To name only one: If there is a sufficient amount of asymmetry among the actors, the need for central intervention may be entirely eradicated. In a best shot situation, the only thing that matters is that the best shooter has a sufficiently pronounced interest in the provision of the public good. If this is guaranteed, and happily enough in practice it not so rarely is, he will provide the good for everybody in his own interest. The same beneficial effect can result from a weakest link situation. Here the good is only provided if every person affected contributes. Hence the problem of free-riding vanishes. The only thing one has to look out for is distribution. Not a single actor may be so poor that he can no longer afford his contribution.

As helpful as the rational choice analysis of social problems is, it is not all-encompassing. Like any good model, and it is a very good one, it must ignore some elements of reality in the interest of seeing others all the sharper. Unfortunately, some of these elements may be crucial for the successful provision of collective goods. Most of these deliberate choices to ignore one aspect or another rest in the distinction between preferences and restrictions. The rational choice model keeps preferences fixed and explains social phenomena in reference to the reactions of interested actors to changes in restrictions. The closer the link between a change in restrictions and a change in preferences, the less costly this assumption. For then it ultimately is irrelevant which side of the medal one explores. But not so rarely the link is less rigorous. Again, one example must suffice. The biases research in psychology has uncovered a whole array of systematic deviations from the assumptions of rational choice theory. They cannot be explained by features of the opportunity structure either.

A second assumption of the rational choice model is equally restrictive for the analysis of collective goods problems. Since this model is interested in restrictions, it must assume the environment to be sufficiently predictable. The minimum requirement is that there be subjective expectations about the confines of the problem space. Now the individuals generating the collective goods problems often have to act in situations of objective or perceived ignorance. They have at best vague fears about dangers, and little more than gut feelings about the future effects of their own actions.

These scant observations explain why, in principle, taking behavioral research on board is of the utmost importance to the design of institutions for the provision of collective goods. Unfortunately, so far almost all of the pertinent behavioral research concerns isolated individuals. It is obvious that the findings generated in this research do not generalise as such to the behavior of corporate actors. Take biases again. They are usually explained by limitations in the human cognitive abilities. Corporate actors do not have a brain and a mind shaped by biological evolution and cultural history. Corporate actors are purposefully designed by humans. Their founders are able to define the scope of

activities such that the corporate actor specialises in the activities for which it is best suited. Nonetheless behavior that appears bluntly irrational is attributed to corporations. Many corporations have been reported to invest where any reasonable man would have left the market as soon as possible. Others have been induced to contribute to curing social ills where abstention would have been profit maximising, even in the long run.

Consequently, the popular dichotomy between rational corporate actors and irrational individuals is ill-founded. However, just scaling up the experimental findings about the behavior of individuals will not do either. The desideratum is an independent body of knowledge about the behavior of corporate actors. Like any good field of knowledge, it will ultimately have to consist of both sound theory and a corpus of empirical findings. Unfortunately, generating both of these inputs is fairly demanding.

This project starts on the side of theory. This by no means implies that theory is any bit more important for the endeavour than empirical research. The choice of the starting point is partly due to the comparative advantage of doing so for the group undertaking the investigation. Maybe the theoretical starting point is also somewhat more tractable objectively since, at this stage, the endeavour is bound to be explorative.

The study of corporate actors per se is not a virgin territory. The social sciences have long investigated the topic. Sociologists even coined the label. It has made its way into political science. Rational choice analysts of business associations have pointed to a potential clash between the logic of influence and the logic of membership. Legal personality and partnership are old topics in law. Legal philosophers have asked how an aggregation of people can integrate into a nation. Mathematicians and philosophers have been interested in emergence and supervenience. They have thus tried to understand how an aggregate phenomenon can be more than the sum of its constituent parts. Similar questions have been asked in public choice and social choice theory. In economics, there is a long-standing debate about the theory of the firm.

From all of these sources, relevant conceptual tools can be borrowed. However, none of these fields has directly been interested in saying how corporate actors behave. Specifically, they have not aimed at making the behavior of individuals and of corporate actors comparable. Most of them have also not been interested in the following question: How is the behavior of corporate actors generated internally? Given this state of affairs, the initial steps of research here are deliberately modest. The project purports to harness the existing body of conceptual knowledge for the question at hand. Which of the concepts are directly applicable? Which of them may be modified such that they can serve their new purpose? And which of them eventually turn out to be false allies?

C.II.3.2 Institutions for Homo Sapiens: Planned Research Alliance with the Max Planck Institute for Human Development

Institutions for Homo Sapiens

Proposed research alliance between the MPI for Human Development, Berlin, and the MPI for Research on Collective Goods, Bonn

I.

The study of institutions has, in the past decades, regained currency after a period of relative neglect. Scholars studying welfare economics, property rights, transaction costs, game theory, and mechanism design have inspired a sizable literature concerning the consequences of institutional arrangement, change, and development; among political scientists and anthropologists, the empirical study of real-world institutions has identified how certain institutions offer solutions to important environmental and social problems. Although provocative, these studies have yet to grasp what we believe to be the fundamental purpose of institutions – namely, the reduction of uncertainty in humans' external social environment and internal mental environment.

The relative neglect of this topic in institutional analysis appears to stem from a false understanding of both human psychology and the environments in which the mind operates. Traditionally, institutional analysis has assumed that the human mind is precisely rational; rationality here means that the mind has an awareness of all the information available, an infinitely large memory for the storage of this information, and an infallible ability to accurately manipulate this information. While these assumptions lead to elegant mathematical models and a crisp formal analysis of institutions, they disconnect academic research on institutions from reality. In the real world, individuals routinely have to make decisions under strict time pressure and with computational abilities that fall short of the complexity of the problem at hand. They often must forego consulting intermediaries or technical tools that facilitate decision-making in order to keep decision cost low enough for action to remain beneficial.

Behind this lies an even deeper problem. Rational choice analysis is not confined to situations where all the information is available to the agents. But if applied to situations in which uncertainty is fundamental and the problem space is not well-defined, it becomes meaningless. Unfortunately, such situations abound in the real world, and it is precisely the purpose of many institutions to help individuals successfully navigate in such contexts.

To understand how institutions and humans interact, one therefore needs a model of behavior appropriate for decisions under various degrees of uncertainty. One such model is offered by the ABC research group at the MPI for Human Development. This model argues that the human mind is *ecologically* rational, it uses simple processes – "heuristics" – that take advantage of the structure of information in the decision environ-

ment in order to yield good choice outcomes without complex calculations. This model of the mind is realistic in the sense that it is based on psychological evidence and can be readily tested. It sheds new light on the interaction between human minds and institutions.

Through this understanding of the human mind, new hypotheses about the function of institutions arise. Our broad hypothesis is directly derived from the above definition of decision-making under fundamental uncertainty. There are three conduits for facilitating this task: One reduces the cognitive load by endowing the individual with more powerful mental tools for decision-making. The other reshapes the environment such that it becomes easier to navigate. Finally, given the pervasive uncertainty, individuals may entrust decision-making to institutions.

When they act under perceived uncertainty, humans are normally not well-advised to engage in optimization. Their ability to reason abstractly is of little help if most of the potentially relevant information would have to be replaced by guesswork. Heuristics usually do a much better job. Humans might not possess or be capable of obtaining a complete set of heuristics, and institutions may well help them cope with this constraint. An example is mandatory professional training, as in the liberal professions.

In the rational choice analysis of institutions, there is seldom talk of changing the environment Rather rational choice institutionalists tend to speak of introducing restrictions or changing the opportunity structure. But this, of course, also changes the environment. However, in the behaviorally informed perspective that is at the heart of our collaboration, both the goal and the effect of institutional intervention into environments may be different. For the intended effect of many institutions is cognitive, rather than motivational. Take a red traffic light. It forbids a motorist to pass the crossing, and there is a sanction for transgressions. But the main problem to be solved by traffic lights is not taming the socially detrimental desire to rush through crossings. Rather, it is to dramatically reduce the decision problem of motorists arriving at the intersection of two busy streets. By simply checking the color of the traffic light, motorists can effectively decide what course of action they should take.

A graphic illustration for the third function of institutions are defaults. In the game-theoretic analysis of law, it has been suggested that defaults be relied upon as a tool for shifting from a pooling to a separating equilibrium. By setting an ecologically highly inappropriate default, those holding private information are led to reveal this information by contracting around the default.

The defaults inherent in organ donor programs significantly differ from this. Programs vary from country to country as to whether one must actively volunteer to participate in donation or whether one must actively remove herself from a donor list. In countries where one must actively opt out of donation, rates of donation are remarkably higher. This result cannot possibly be explained in rational choice terms. There are other potential explanations, like the transmission of social norms. But defaults provide one plausible

candidate for the explanation. Defaults make a decision for people when those people make no decision at all.

Addressing these topics will serve as the focus of our research alliance and will greatly enhance our respective research agendas. At the MPI for Research on Collective Goods, research focuses on defining collective goods problems, and on investigating institutions aiming at solving them. Both the definition and the solutions look different when viewed from the behaviorally informed perspective, and when giving up the assumption of a defined problem space. Collaboration with a group of well established cognitive psychologists working at the Center for Adaptive Behavior and Cognition would advance this program and offer a more complete picture of human/institution interactions. Likewise, in addition to offering the Bonn institute its knowledge of how minds interact with the external environment, that center would benefit from working with a group knowledgeable of the artificial environments – i.e., institutions and markets – that feature prominently in human life. The talents and interests of each group elegantly complement each other and provide a fruitful ground for developing an understanding of how institutions and the mind interact.

II.

Within this broader framework, we have been able to identify two topics for conferences. The first conference will investigate the following question: Should intelligence best be located in people's minds, or rather in the institutional framework? The second conference will explore the role of institutions in choosing between false positives and false negatives.

C.II.3.2.1 Intelligent Actors Versus Intelligent Institutions

Some social problems are easy. My neighbour has a dog. The dog loves visiting my yard, and digging out the bulbs from my flower bed. The problem is solved if we build a fence. However, Ronald Coase has taught us that even this apparently primitive social problem is full of intricacies. Who should bear the cost of building the fence? If we are both rational, we envisage this cost when deciding to buy a dog or plant bulbs. Which is better: that I am prevented from planting bulbs, unless I am prepared to pay for the fence? Or that my neighbour is prevented from keeping a dog, unless he is prepared to have the fence built? Or that both of us are prevented from having our ways unless we contribute a fair share to the cost of the fence? Hard to tell, and this is best settled by me and my neighbour, not by the judicial system. For the judge, it will be even more demanding to assess how dearly I care about the beauty of my garden, and how dearly my neighbour cares about the charms of his dog.

If we sit down before both of us take action, in principle each of us has an incentive to misrepresent his valuation. However, a relatively simple rule may provide the necessary incentives. Economists would call it a mechanism. We both simultaneously state how

much we value the conflictual activity. Say we deposit a sealed letter for the purpose. The fence is built only if the aggregate stated valuation is higher than the cost of the fence. The cost is split in proportion to the two statements. Under this rule, lying about one's valuation does not pay. If I underrepresented my valuation for the unspoiled garden, there is a risk that no fence will be built. If I overrepresent my valuation for the garden, I run the risk of having to pay for most of the fence, and giving my neighbour a free lunch. However, there is a twist. If there is no fence, the fate of my bulbs is a sad one. If I am a peaceful man, my neighbour runs no similar risk. In order for the scheme to work, I must therefore credibly threaten to inflict some serious harm on my neighbour should I apprehend the dog in my garden.

In this case, clever and prevoyant neighbours might themselves come up with the solution. The only institutional intervention needed is a legal rule that makes the contract enforceable. Ultimately the neighbours could even do without one. In that case, I would have to maintain my threat until the fence is built and paid for. But most neighbours will not be that farsighted. Alternatively, the legal order might stipulate that dogs may only be unleashed in fenced areas. Under this rule, my neighbour would have to build the fence if he wanted to let the dog out in his yard. Or neighbours might be obliged to build fences and to split the cost, even if none of them keeps a dog. Instead of such a specific rule, the legal order might also be confined to the following general clause: Nobody is obliged to tolerate the intrusion of foreign property into his territory. Seemingly, under this rule, my neighbour would have no choice: He would have to build the fence, or kennel his dog. However, if I am not a garden enthusiast, my neighbour might ask for permission for his dog to come into my yard. I might be willing to grant permission against a side payment below the cost of the fence. That way, under the stated rule, the unnecessary building of fences could be avoided.

The example illustrates an important dimension of the interaction between behavior and institutions. In order to master one's environment, often quite a bit of intelligence is needed. However, not all of the intelligence need be located in the individuals' minds. Alternatively, the intelligence may be embedded in the institutional framework. Arnold Gehlen has called this the "unburdening effect" of institutions (*Entlastungsfunktion*). Actually, the relationship between mind and institutions may be one of substitution, of complementarity, or they may be independent. In the first case, individual intelligence is supplanted by intelligent institutions. It is natural to compare the performance of these on one and the same task. This comparison might also be extended to governance by technological code, as in technical standards. In the second case, individual intelligence becomes more powerful if matched with adequate institutions.

Using institutions to empower individual intelligence is particularly attractive from a normative perspective. As Friedrich August von Hayek has forcefully argued, reality is bound to be too complex to be captured by centrally intervening institutions. Institutions may well be able to rely on superior generic knowledge. But for the solution of practical problems, generic knowledge is useless if not properly coupled with specific knowledge. Institutional designers and regulators normally do not have access to this specific knowledge, or they

should not have access to it for normative reasons. If they properly match and trigger the intelligence of individuals, simple rules may therefore indeed be adequate for a complex world, as Richard Epstein has suggested. One way of doing this consists in putting the institutional intelligence in procedural rather than substantive rules. A good illustration is the adversarial system in private lawsuits. Both inputs can also be combined in institutions that artificially reduce the uncertainty in the environment enough that the actors are able to manage for themselves. This is, for instance, done in authoritative statements of fact, where it is impossible to fully resolve a dispute over the facts. Not so rarely, this is how courts are able to bring about a settlement. Borrowing from a book title from the ABC group, one might put the goal as follows: simple institutions that make us smart.

Of course, before answering these questions, or even engaging in institutional design, it is necessary to be more specific. What social problem is to be solved? Pure coordination problems may need different forms of intelligence than externality problems. In one-to-one interactions, less unburdening may be necessary than in one-to-many interactions. The solution to the social problem may not be the exclusive goal. There may be concerns of distribution, fairness, legitimacy, or the socially prevailing morality. Intelligence may not be confined to problem-solving capacity in the individual instance. Along with this, there may be an interest in remaining open to change in the environment, to progress in understanding, or to a shifting valuation of competing normative concerns. Precisely because of uncertainty and overwhelming complexity, mere fact-finding is usually not conducive to answering these questions. In practice, they are normally answered authoritatively by way of institutional, often merely procedural, intervention. This is one reason for having the political process in modern societies.

While in principle these kinds of questions are not novel, so far they have not been asked from a behaviorally informed perspective. Specifically, the project will supplant the predominant rationality assumptions about individuals with behavioral findings and models. This is relevant in two respects: Firstly, what does intelligence in individuals mean if one does away with the heroic assumptions about the computational capability of humans characteristic for rational choice modelling? Secondly, what does intelligence in institutions mean, provided that, ultimately, the only way for an institution to become effective is by having an impact on the behavior of individuals? At first sight, one might expect that the overall level of intelligence on both sides of the interaction must decrease. However, as the work of the ACB group on heuristics has demonstrated, in complex environments, radically simple rules may perform at least as well as, if not better than, rational reasoning. This effect, however, presupposes that heuristics aptly exploit contextuality. From this angle, it may be hypothesized that institutions are intelligent if they enable individuals to properly develop, adopt, or choose their situation-specific heuristics.

C.II.3.2.2 Institutions Choosing between False Positives and False Negatives

Man does not often have the privilege of living in a certain environment. Even if, theoretically, all the information about problems could be provided, handling it *lege artis* is frequently beyond the computational capabilities of the human mind. If so, the individual is bound to act as if he had to decide under uncertainty. This claim about the definition of the individually and socially relevant context is central to the work of the ACB group. It is directed against the predominant view in both psychology and economics that sees systematic deviations from rational optimization as defects. This claim has an obvious legal corollary: Making people "more rational" by legal intervention may be bad policy when they have to navigate in uncertain settings. Investigating the power of this claim has been one of the tasks entrusted to the Dahlem conference, Heuristics and the Law.

There is, however, a second implication of no lesser normative importance. It is easiest to illustrate in binary choice under uncertainty. In such a problem, the situation may either call for action or for abstention. The decision-maker is thus faced with a matching problem. Ideally, she would want to become active where the situation calls for this; she would want to remain inactive in the following cases. If she does not know of which kind of situation it actually is, she can make two mistakes, not just one: she may intervene although inactivity would have been appropriate; or she may remain passive where she should have become active. There are thus not only false positives, but also false negatives.

In legal discourse, this language is not normally used. However, many legal institutions may be interpreted as opting for one instead of the other potential error. A good illustration is the standard of proof in court. Although there are remarkable differences between legal orders, most of them agree that false positives loom larger in criminal procedure. If the defendant does not plead guilty, the fact that he has committed the crime must be demonstrated "beyond reasonable doubt". In civil procedure, the opposite norm may well hold. For instance, many countries have the following rule: If a child is born in wedlock, the husband is assumed to be the father. If the father is unable to produce conclusive evidence to the contrary, it is legally treated as his legitimate child. Likewise, the precautionary principle prevalent in environmental law may be interpreted along these lines. Although the underlying natural phenomena are not fully understood, environmental agencies are allowed to intervene since false negatives seem more detrimental than false positives. The application of conceptual tools, like signal detection theory, to these kind of legal institutions seems promising.

The foregoing may be cast as an exercise in understanding the effect of legal intervention on the behavior of its addressees. Legally relevant uncertainty is, however, not confined to this. It frequently is also to be found in the behavior to which the legal rule reacts in the first place. In this case, there is a shift in the normative problem. The question no longer is: Will legal intervention be good or bad? Rather, the law reacts to the behavior of individuals who themselves had to decide whether to go the risk of false positives or of false negatives. For instance, in clinical practice, doctors must often choose among the follow-

ing options: engaging in invasive diagnosis or treatment, although the positive effect on the patient's health is uncertain; or doing nothing, although the patient might have been cured. Legal rules influence this choice in many ways. For instance, in most legal orders, doctors run little if any risk to be sued for malpractice if the patient has to undergo burdensome or even harmful treatment with a very small probability of success. This second legal question does have a direct link to the work of the Berlin Institute on heuristics. For in contexts of perceived uncertainty, individuals empirically often rely on heuristics. They thus deliberately ignore information that is available, or that could be uncovered with extra effort. By this strategy, individuals implicitly strike a balance between false positives and false negatives. Is the legal order willing to accept this choice? Should it try to change the relative weight of both alternative mistakes? How could this be brought about?

C.II.3.3 Better Than Conscious

Exploiting the Human Capacity of Reaching Decisions by Exploiting both Conscious (Rational) and Subconscious Processing of Variables

Program of a Dahlem Workshop

Organizers: Christoph Engel, Wolf Singer (Max Planck Institute for Brain Research, Frankfurt)

Program Advisory Committee: Gerd Gigerenzer (Max Planck Institute, Berlin), Paul Glimcher (NYU), Mark Hauser (Harvard), Kevin McCabe (George Mason)

Goals of the Workshop

To explore the implications of the human ability to reach decisions both by the conscious and subconscious processing of information

Justification of the Workshop

Institutions in general, and the law in particular, can be seen as emerging, as passed on by history to those living today. This idea has never fully disappeared. But since the advent of legal positivism at the end of the 19th century, and since the adoption of written constitutions almost everywhere in the world, this is no longer the dominant view. Formal institutions typically are the result of purposeful design, be it by the legislator or by some

other authority under constitutional control. Consequently, the predominant canon for interpreting written law is teleological. It attempts to assess the function of the rule. The rule is assumed to address some true social problem. It is further assumed that the legal intervention into freedom or property is instrumental for social betterment. This functionalist perspective is even more obvious in other formal interventions, such as the introduction of tradable permits for the discharge of noxious substances into the environment or the artificial increase in the cost of so doing incurred by imposing a tax on such activities.

Functionalists must get two things right: the analysis of the social problem and the predictions about the effect of intervention on the behavior of its addressees. The second is bound to be a decision under considerable uncertainty. Nobody can claim to truly predict the future. The former, i.e., problem definition, is rarely just speculative. For the legislator to become active, the public must be convinced that there is a true social problem. But very often, the legislator only vaguely knows the mechanism causing the socially undesired outcome. Even if the analysis is precise for the past, the legislator is actually aiming to impact on behavior in the future. Many contextual factors play a role in determining whether behavior tomorrow can be expected to be identical to behavior today. For these reasons, a functionalist institutional designer cannot but rely on models about human behavior. This even holds if the social problem ultimately is presented to man by nature. For institutions can do no more than change behavior.

Over the last decades, one conceptual tool has dominated institutional analysis and institutional design: the rational choice model, as developed in economics. In its standard form, it assumes all cognitive problems away (or translates them into motivational ones, as in the analysis of information asymmetries). Moreover, all human action is assumed to be driven by interest (or formally by the terms in the individual's utility function). Psychologists and experimental economists are critical of this view. They have uncovered a whole catalogue of "biases", i.e., systematic deviations from the predictions of the rational choice model. These critics have not been without their own critics. Another school of psychology claims that the implicit norm underlying the biases approach is inadequate. What looks faulty from the perspective of rational choice analysis more often than not turns out to be quite functional for individuals that have to survive in a fundamentally uncertain world. In such an environment, less is often more. Fast and frugal heuristics turn out to be a smart response, even if they go wrong in occasional highly unusual settings.

This psychological criticism rests on one fundamental assumption about the human mind: Human cognitive abilities are highly limited. Only "rational demons" are able to live up to the precepts of rational choice theory in general, and to its norms for decision-making under uncertainty in particular. Subjective expected utility, or the application of Bayes' rule, does not seem within human reach. Actually, it is not difficult to prove that ordinary individuals make gross statistical errors. Moreover, the sheer complexity of the intellectual task visibly seems mind-boggling. Yet both findings exclusively look at conscious and deliberate decision-making. This ignores neuropsychological and neurobiological research, demonstrating that humans as well as animals can intuitively handle a vast amount of information, and that they do this in a way that comes pretty close to the

axioms of statistics and of Bayes' rule. From this, the leading hypothesis of this workshop is derived: Institutional analysis and institutional design are misled by neglecting the powerful human ability to subconsciously handle information.

Structure and Themes for the Four Working Groups

Group 1: Exploring the Strategies of Decision-Making

a) *Conscious vs. Intuitive Strategies*

b) *The Role of Explicit and Implicit Experience*

c) *The Role of Emotions and Learnt Rules*

d) *The Sources of Information Used in Rational and Intuitive Decision Processes*

Fairly small computers are able to outperform untrained humans in conscious logical operations. This fact suffices to demonstrate that the human dominance of the world cannot exclusively be explained by the human ability of conscious rational reasoning. One powerful explanation is "smarter, not harder". Instead of going through a nightmare of calculations, humans often use rules of thumb. But this cannot be the entire truth about the issue.

There is indeed evidence, both from primates and from humans, that the brain partly relies on brute computational force. This massive parallel processing, however, does not happen at the conscious level, but at the subconscious one. And it is not disjoint from either the use of rules of thumb or rational reasoning, but interacts with both abilities. Specifically, humans rely on a vast knowledge base, and they manipulate large amounts of sensory input, as well as data retrieved from memory, when they engage in judgement and decision-making. This helps them, for instance, to reliably assess the ecological validity of rules of thumb – which is what makes them so powerful. And it helps them, when engaged in rational reasoning, to control both processes and outcomes by way of intuition – which explains, for instance, why the legal profession does a fairly good job, even in contexts that are at best partly understood scientifically.

The mission of this group is to investigate the different strategies of problem solving, i.e., decision-making. Can the subconscious abilities come to the rescue of rational choice modelling, rightly attacked by experimental economists on the conscious level? What are the implications for the growing field of behavioral institutional analysis and design? Must the performance of the many mental tools for judgment and decision-making be reassessed in the light of their interaction with the subconscious ability of parallel processing?

Group 2: Exploring the Neuronal Mechanisms of Decision-Making

a) *Decisions in the Perception of Ambiguous Patterns*

b) *Forced Choice as a Means to Probe Subconscious Decision-Making*

c) *Neuronal Correlates of Decision Processes*

d) *Models of Decision-Making in Parallel Distributed Processing*

The goal of this group is to examine what we know about the neuronal mechanisms of decision-making in animal models and human subjects. This is currently an active field of research that touches upon numerous fascinating questions of self-organizing principles in complex systems with distributed architectures.

Group 3: Exploring the Power of Conscious and Intuitive Decision-Making

a) *Comparing Problem Solving Strategies in Animals and Humans*

b) *Comparing Problem Solving Strategies in Different Cultures*

c) *Strategies to Resolve Conflicts between Intuitive and Rational Solutions*

d) *How do Western Institutions Exploit the Ability of Humans to Reach Decisions in Complementary Ways?*

This group should explore to which extent the human ability to exploit both unconscious and conscious processes for problem solving is reflected in the organization of decision processes. The underlying hypothesis relies on adaptation. The respective organization would not have evolved, developed, or designed if it ignored the specific strengths of the mental machinery of the organism.

Group 4: Case Study: Judicial Decision-Making

a) *Which are the Mental Mechanisms Underlying the Intuitive Component in Legal Decision-Making?*

b) *How Do Intuitive and Deliberate, Subconscious and Conscious Elements Interact in Legal Decision-Making?*

c) *How Do Lawyers Acquire the Mental Abilities Necessary for Judicial Decision-Making?*

d) *Do the Legal Orders Differ with Respect to the Prevalent Style of Judicial Decision-Making?*

More often than not, the distinctions between intuition and deliberation, between subconscious and conscious machinery, between parallel and serial processing are not categorical. Rather, decision modes may be characterized by the way they combine both kinds of

inputs. There is considerable variation in the combination of these inputs, depending on the perceived character of the task and on the personality of the decision-maker. Individuals may develop an idiosyncratic style of decision-making. Yet often they basically adopt the decision mode they observe in others. Not so rarely, institutions aim at bringing such learning about.

A rich illustration of this is legal decision-making, and judicial decision-making in particular. A court is normally not free to decide as it wishes. It is asked to apply the law as it stands. Exceptions like jury decisions or some Islamic courts notwithstanding, judicial decisions must be justified. The justification is not only addressed to the parties, but to the professional community of lawyers as well. This institutional framework pushes lawyers into deliberation. The deliberate element is even more pronounced in the many legal orders that originated in Roman law. Here, the courts do not have the power to openly generate new rules in the light of the case to be decided. It is their task to apply the existing general rules. Practically speaking, in these legal orders, the degrees of freedom originate in two elements: in the facts of the case, and in the richness of the doctrinal framework. One must be fairly astute to exploit these degrees of freedom.

Despite the pronounced deliberate element, judicial decision-making is not a mechanical exercise. On the contrary, the prime goal of legal education is to teach young lawyers how to smell the irregular aspects of the specific case. Often, aspects of a case turn out to be decisive for which no neighbouring discipline is able to offer stringent language. In other situations, lawyers feel that the available rigorous conceptions are inadequate for their decision-making task, e.g., since the price for rigour is assumptions that are strongly counterfactual. Moreover, legal doctrine has so many degrees of freedom that choosing among them is often more important than applying the chosen one *lege artis*. For all these reasons, legal decision-making is characterized by the interaction between equally pronounced deliberate and intuitive components.

C.II.3.4 New Law and Psychology

Exploring the Power of Psychology for Governance by Law

Law and psychology is not a new label. More than a century ago, lawyers discovered the relevance of psychology for a host of legal questions. Likewise, applied psychology has long seen law as an attractive field of study. There are established journals dedicated to analysing the interface of both disciplines. Psychology has instructed the law about issues like the quality of jury decisions, the reliability of witness testimony, or the error rate of lie detectors.

More recently, a new competitor has entered the scene. It goes by the name behavioral law and economics. As indicated by the label, this movement did not originate in psychology, but in economics. Actually, it is riding on a heterodox approach in economics. Economists have tired of the strict rationality assumptions in the neoclassical model and have started testing them empirically. The approach has been fuelled by a line of research in psychology. Daniel Kahneman, Amos Tversky, and their collaborators have turned a mere set of assumptions in economics into a norm. Whenever Homo sapiens systematically deviates from Homo oeconomicus, this is called a bias. Behavioral law and economics makes the normative implication explicit: Whenever there is a bias, debiasing by law is to be considered.

The biases program has come under attack in psychology proper. A different label has been introduced for the purpose. Biases are reinterpreted as heuristics. In general, heuristics are assumed to be beneficial, not detrimental to the individual. The different normative assessment is based on a different definition of the task. Behaving like a Homo oeconomicus is optimal in a fully defined environment only. Even in such environments, complexity quickly explodes and surpasses the cognitive capacities of the human mind. In a fundamentally uncertain world, avoiding severe mistakes is much more important than fully exploiting all the opportunities out there. Ecologically valid rules of thumb outperform complex rational algorithms. This criticism is about to travel into law.

Although an important topic, this criticism is not the focus of this project. It rather is meant to supplement the law-and-economics approach, which has now become the dominant interdisciplinary perspective on law. This success is not only due to the conceptual rigour of mathematical economics. It also has taught the field of law an important lesson: law is a governance tool. Actually, since the advent of legal positivism, law has not been able to eschew the perspective. Otherwise, the power of the legislator (and the courts) to change legal rules at will could not be justified. But law and economics has radicalized the idea. It is no longer content with imputing a telos to a rule, after the fact. It expects the law's addressees to anticipate the effects of the law, or of its enforcement, in their decision about taking action.

The strength of behavioral law and economics lies here. The approach adopts the same definition of the research question as law and economics. Yet it replaces the Homo oeconomicus assumptions with a more realistic picture of human nature. A concomitant advantage is methodological. Behavioral law and economics capitalises on the increasing attempts of economists to include behavioral findings into the neoclassical model. These attempts provide behavioral law and economics with rigorously defined conceptual tools.

Behavioral law and economics is thus rightly a growing field. It however has to pay a price. It is forced to see all human behavior through the lens of the rational choice model. While there is ample room for enriching the model, ultimately all findings must be portrayed as either preferences or restrictions. To psychologists, this will sound surprisingly similar to Skinnerian behaviorism. Since the cognitive revolution, the large majority of psychologists are no longer willing to accept this stricture. They have even less reason to do so today since non-invasive technologies make it possible to observe the brain in action.

This is where new law and psychology is situated. In line with law and economics and behavioral law and economics, it is interested in law as a governance tool. Unlike these fields, however, it is not conceptually restricted to preferences and restrictions. Consequently, new law and psychology feels no urge to translate psychological mechanisms into behavioral effects.

An example illustrate this. Following the biases program, behavioral law and economics has been interested in the "hindsight bias". Once subjects have heard about the outcome, it becomes hard for them to be unbiased in their assessment of its ex ante probability. This is bad news for an otherwise elegant effect of governance by torts. In torts, the standard of negligence may be adjusted and developed in the light of the evidence uncovered by cases that come to the courts. This feature turns torts into a tool for ex post governance. The legislator may openly admit to the limits of its foresight, and delegate the further development of general clauses to the courts.

In this case, new law and psychology will come up with the same normative assessment. But rather than speaking of a miraculous defect in the human psyche, it is able to give a straightforward explanation. In judgement, humans heavily rely on memory. Retrieval of declarative knowledge from memory results from the combination of two effects: a base rate of activation, and recency. Moreover, retrieval is the more likely the better a chunk of declarative knowledge has been elaborated in learning. Having heard the evidence of a graphic case just before taking the decision makes it likely that the illustrative story will trump earlier acquired, more abstract knowledge, let alone the merely theoretical ex ante possibility of a different outcome. Based on this explanation, the law is in a much better position to explore countermeasures, short of giving up ex post regulation altogether. One possibility would be to entrust the power to prescribe to a body not identical with the one that has to award damages in the case at hand.

In more abstract terms, new law and psychology thus differs from behavioral law and economics conceptually. It cannot do away with the epistemic problem either. He who attempts to see everything will see nothing. But new law and psychology is not restricted to the analysis of behavioral output. Rather, it is interested in explaining observable behavior by what is known about how behavior is generated mentally. The standard level of analysis thus are behavioral dispositions, not behavior resulting from them. The approach is open to even deeper digging and to explorations of the subsymbolic foundations of symbolic mental activity. This also allows the approach to analyse causes that are not open to conscious control in the first place, like urges, emotions, or intuition.

C.II.3.5 The Proper Task of Academic Law

Prospect of a Symposium

I.

German legal scholars do not write in English. They do not publish discussion papers. They do not make their texts available online. Their law papers are not subject to peer review. They pay no heed to the impact factor. They do not finance their research from third-party funding. They do not have special research areas (*Sonderforschungsbereiche*) They are epistemologically naïve. They do not draft models. They do not use mathematics. They do not falsify hypotheses. They do not use statistics. They do not carry out interviews. They do not conduct experiments.

There are exceptions to each of these statements. But this is a fair description of the large majority of German legal scholarship. In the concert of disciplines, legal studies increasingly seems to be singing out of unison. For the time being, however, the close contact of the discipline with those holding power in society has saved them. But the more distribution decisions are shifted to research organizations, the more the pressure is mounting.

While urgent, this external impulse is not the most important factor calling for self-ascertainment. In principle, this began with legal positivism. Customary law does indeed still exist. However, since the emergence of legal positivism, legislation has been the dominant process for generating law. Law has thus become flexible. It can be openly adapted to changing relationships, sensitivities, and valuations. Law has maintained functions such as the protection of peace and the transmission of experience to future generations. Yet, positivistic law must primarily be understood functionally. Increasingly, the role law plays as a governance tool overshadows its remaining roles. Does academic law thus also have to mutate into a science of governance? And what could it be other than a social science?

Some German legal scholars are obviously pursuing this path. But the large majority of their colleagues do not really want to follow suite. There are perhaps good sociological explanations for this. It is not clear, whether in the final analysis, a premium will be paid for opening up to the social sciences. There is concern that outside disciplines will set the standards. There is the usual fear of every interdisciplinary researcher: that in the end one will loose touch with one's own discipline without being truly recognized in another one. That is all of importance, but it does not yield a conference topic.

The final misgiving is completely different: Will academic law surrender its character if it is transformed into a social science? Or more cautiously: How can it integrate social scientific knowledge and methods and still retain its character? Or more offensively: Is its relationship to the social sciences better described as complementary? According to this view, each side has an independent contribution to make. The tasks touch upon one another, and may even in part overlap. But neither side can be submerged in the other without losing its own identity. And it is not only legal scholars who can learn from social scientists, but also social scientists who can learn from legal scholars. Interdisciplinarity would no longer be a one-way street.

II.

But what is the proper task of academic law? And how can we talk about it in a way that does not impede dialogue with the social sciences, but opens it up?

Being a discipline that has developed over millennia, jurisprudence eludes simple formulas. To get a suitable view of the discipline, it is necessary to continually view it from different angles. It is not by chance that law has distinct schools. Some of them are very robustly built up around opinions. But usually methods and styles have a greater formative effect. Convictions about what legal studies should form the backdrop. This prospectus should not anticipate the conference results. So hints must suffice. They should make clear how diverse the answers may be.

The discipline is called jurisprudence, not judicial science. The study of law is thus a practical discipline. It is no coincidence that in the 1970's, some wanted to turn lawyers into social engineers. And even today, many still speak of pathological cases as the typical object of law lectures. Law is thus obviously close to the two other major practical disciplines: engineering and medicine. The task of these disciplines is primarily to bring the existing knowledge of concepts, facts, and relations to bear practically.

The social sciences want to explain, sometimes also to predict. For lawyers, both activities constitute preliminary work. By contrast, in the final analysis, lawyers want to take decisions. Lawyers are thus actors, not observers. This largely also applies to legal scholars. This is obvious for judges in a subsidiary office or consultants. But it is also true of commentators, authors of sentencing annotations, and more generally of any lawyer involved with issues of dogmatics. German law professors have more power to shape law than

scholars in most other countries. Only when legal scholars are involved with the theory of law, the philosophy of law, or the sociology of law do they become observers.

Decision-makers assume responsibility. That should not mean that social scientists or natural scientists are allowed to be irresponsible. But in their everyday scientific work, their concern is primarily with the originality, stringency, and quality of the data. Legal scholars also want to make novel discoveries. But novelty has no value in itself. It is only of use if it allows better decisions. Deeper still: responsibility is not limited to the scientific role. Responsibility makes a claim on legal scholar's personhood. It is expected that he account for his recommendations.

Legal studies is normative. Even if it does not take the decisions itself, it must be able to distinguish good decisions from bad ones. For this, normative standards are necessary. Some social scientists are certainly prepared to put their bids on the table: Utilitarians strive for the greatest happiness for the greatest number. Among economists, social welfare theorists developed this into ideas for allocative efficiency. Against this, behavioral theorists advance the ideals of fairness and happiness. Both are viewed as relative, not absolute. Egalitarian conceptions desire the common efforts of all. Each of these normative goods can be well-grounded philosophically. Each can muster up plausible interpretations of reality as evidence. But these different normative goods are not commensurable. One central task of legal studies is to find general rules nonetheless.

Law is: to stand on a sponge and not topple off. For a legal scholar, the balancing act is indeed normally somewhat less acrobatic than that of his colleagues in practical areas of law. He has more time. Above all, he can be more selective in the choice of his issues. But in the end, he too has to propose decisions. Very often, to do so he finds himself in murky and dangerous waters. The insecurity here is not merely of a subjective nature. The legal scholar is thus not only rash. He does not merely propose decisions, although he has not thought through all the elements relevant to them. Much more often, neighbouring disciplines can offer him no aid, because no one has yet really understood the matter at hand. So there is in fact the highly developed rational choice model. It helps the legal scholar to understand the incentive effects of legal rules. But when confronted baldly, it is immediately clear that legal rules have completely different ways of effecting behavior. For the time being, the competing behavioral theories are much less developed than rational choice. Economists have needed a century to bring their model to the present status. Legal theorist cannot possibly wait another century, until behavioral theory reaches the same status.

Legal work consists of the study of texts. Understanding is the concern of legal doctrine. Doctrine is thus hermeneutic. Text and reality can never fully match. A pinch of creativity is always involved in doctrine. A strict ideal of objectivity is insufficient for legal studies. It is not possible without judgement. In the final analysis, the application of law is art, not science. When a legal scholar is involved with legal policy, he can free himself from the strictures of the text to some extent. But even if he does so, in the final analysis, practical

benefits should influence what he does. Perhaps a methodology of understanding could serve him better than a clear-cut partial analysis from the social sciences.

Law has many functions at the same time. It wants to steer behavior. It wants to stabilize expectations. It wants to overcome conflicts. It wants to process experiences. It wants to create acceptance. It wants to establish identity. It wants to make state governance transparent. It wants to limit power. Sometimes it manages to embed the various functions in the various rules of substantive and procedural law. Often, however, for one and the same legal question, they clash with one another. Then legal studies must find a way to endure the tension.

Legal studies cannot bracket context. It is inextricably historical. It may not ignore anything that may be essential to the judgement. The social sciences, by contrast, live from decontextualization. Economists are interested in incentives. System theoreticians only take communication into purview. Evolutionary theorists only look at developmental paths.

The application of law is an exercise of authority. It must be justified. Here, justification aimed merely at a circle of initiates is insufficient. As often as possible, law must change the behavior of its addressees by convincing them, not by forcing them. An important function of legal studies consists of providing legitimacy for the law in force. The reasons brought forward must take into account what those addressed by the law view as reasonable. That is one reason the power of the word is so important for law. For this purpose, social scientific knowledge might even have to be translated into everyday theory (*Alltagstheorie*).

C.II.3.6 Public International Law and Economics

Conference

to be organized in 2006

by Anne van Aaken, Christoph Engel, Tom Ginsburg (University of Illinois)

I.

The organization of the conference is motivated by two connected issues. First, research in law and economics used to be restricted to national law, and it has largely bypassed public international law. An economic approach to international law started flourishing in the U.S. less than ten years ago. So far, the economic approach to international law has largely focused on general issues of International law, such as questions of modes of treaty-making as well as treaty exit, the nature of customary international law, international adjudication, and, last but not least, compliance, reputation, and reciprocity in international law. More detailed studies of specialized regimes, with the exception of trade law, have not been undertaken extensively. Thus, there are plenty of topics in international law not yet dealt with from a law-and-economics perspective. The conference will specifically deal with issues in international law so far neglected by the law-and-economics approach.

Second, a discrepancy between the rise of economic analysis in international law in the United States, on the one hand, and the neglect of this type of research in international iaw in Europe, on the other hand, can be diagnosed. Thus, the conference brings together American and European scholars of law, economics, and international relations promoting the topic, in order to foster a transatlantic dialogue on an increasingly prominent theory of international law in the U.S.

The conference is to be divided in three main parts. The first part will deal with the methodological foundations of an economic approach to law. More specifically, a discussion needs to ensue on the question of whether the rational choice approach serves as a valid assumption in international law. Most international lawyers assume implicitly that states and other relevant actors act rationally. Rational choice theory can foster the self-reflection and understanding of international lawyers by making this assumption explicit and thereby discussable. Therefore, a dialogue should locate the rational choice approach to international law in relation to other theories of international law. General problems of compliance, as well as the nature of customary international law, reflecting the underlying theories of international law may be discussed here.

The second part will deal with topics where the economic approach serves as an aid to legal interpretation of questions *de lege lata*. Here, the economic approach may serve as an interpretative tool in a teleological and consequentialist interpretation of legal texts. International trade law and international investment law will be topics discussed here.

The third and the fourth parts will present the economic approach as a tool for institutional and legal design on an international playing field, that is, to answer questions *de lege ferenda*. This will include topics of a more general nature, such as monitoring and compliance mechanisms in international law, the role of non-state actors, and special issue areas of international environmental law as well as international human rights law. Furthermore, pressing questions concerning sovereignty and multilevel governance will be discussed. Most of international relations and international law scholars have moved beyond the question of whether international law matters and have turned their attention to questions of why and how international law leads to international cooperation. In recent years, scholars have theorized about the optimal design of institutions and have examined and evaluated existing institutions to determine whether the institutions are rationally designed.

II.

International legal scholarship often combines careful doctrinal description, by saying what the law is, with prescription, elucidating what the law should be. In most cases, prescription needs an explanation and prediction of how legal rules work as a basis; those can only be based on a sound social science approach. Since legal science (*Rechtswissenschaft*) as such lacks a testable social scientific approach, the prescriptions of international lawyers suffer. In response to that deficit, international lawyers in the U.S. – but not in Europe – have turned to other disciplines, such as international relations and/or the economic approach. Traditionally, there has been rather poor communication between representatives of these two schools. This has, however, changed over the past few years. For a long time, most arguments advanced in this area were grouped according to the school of thought that its author belonged to, namely (neo-) realists on one side of the spectrum, and intergovernmentalists on the other. Some contributors have pointed out that these frontlines offer little hope for future progress and have called for turning away from this impasse. Many theories of international relations also rely on the rational choice approach (e.g., realism, institutionalism, liberal theory) and have begun using standard economic tools, such as game theory, public choice and price theory.

Whereas realism considers international law an epiphenomena of state behavior, institutionalism and liberal theories of international law assume the significance of international law. The relationship between those approaches and the economic approach to international law is not competitive but complementary, as international relations theory focuses on big theories but does not dwell on the details of international law, whereas economic analysis combines the rational choice approach with a detailed (doctrinal) analysis of international law. The economic approach is not bound to one of the theories of international relations, even if some of the scholars using economic tools are. Like liberal theories, rational choice is able to break up the black box of the "state".

Shortly described, law and economics is the application of economic methods to the field of law. It is a consequentialist social scientific approach using rational choice theory (and its extensions in behavioral economics) to explain (and predict) the behavior of actors, be they states, individuals, non-governmental organizations, enterprises, or international organizations. The relevant decision-makers act rationally (i.e., intentionally) given their own preferences. Preferences need not be defined as pure power interests (as the realist school would hold); rather, preference definition is in principle open. A change in behavior is attributed to a change in restrictions (e.g., law). Without an emphasis on theory, the empirical testing of propositions can degenerate into a purely inductive enterprise that is easily made obsolete by the next change in the practice of international law and politics. Any coherent social scientific explanation requires a causal mechanism. That is, there must not merely be a correlation, but also an account of how one set of actions determines another. Before causal mechanisms can be tested, they must be articulated and specified by analytical models and hypothesis. Rational choice theory is particularly good at this task as it allows for incentive-based studies and empirical work. This, in turn, enables us to (in)validate different theories of international law by empirically testing the respective hypothesis.

International law can be analyzed as both *explanandum* and *explanans*. If it is taken as *explanans*, i.e., if it is assumed to be exogenously given, then the interest would focus on comparing the different effects that are caused by the different international rules or adjudication, be that in questions concerning substantive law, be that in procedural law, or compliance mechanisms. This approach can help to answer questions for interpretation de *lege lata*, but it may also be used for problems of institutional design. If international law is taken as an *explanandum*, we are able to ask questions about why states use or do not use different modes of international law. This helps to answer questions *de lega ferenda*.

C.III Applied Topics: Network Industries and Financial Stability

(Direction: Prof. Dr. Christoph Engel, Prof. Martin Hellwig, Ph.D.)

PostDocs

Dr. Anne van Aaken (Law)

Dr. Stefan Bechtold (Law)

Dr. Hendrik Hakenes (Economics)

Dr. Felix Höffler (Economics)

Dr. Jörn Lüdemann (Law)

Dr. Isabel Schnabel (Economics)

Law Clerk (Referendar)

Christian Schmies (Law)

Affiliated

Dr. Elena Carletti (Economics)

The Institute also continues its tradition of investigating applied topics concerning collective goods. This research is complementary to the more fundamental research summarized in Sections C.I and C.II: On the one hand, the principles that emerge from the more fundamental research provide guidance for the analysis of applied issues; this guidance is needed to avoid the danger of provincialism in studying special applications. On the other hand, the applied issues themselves serve as a proving ground for abstract ideas, also as a source of new ideas. The latter is particularly likely when different applications turn out to involve common features.

As applied topics we have chosen:

- The organization and regulation of network industries

  and

- Financial stability and the regulation of financial markets and financial institutions.

Our choice of these topics was to some extent motivated by considerations of comparative advantage, based on past research expertise, as well as the scope for interdisciplinary research by jurists and economists. Apart from making progress on each of these topics in its own right, we are also keen to explore the parallels and links between them.

Our choice of these topics is not meant to be exclusionary. If a person has promising ideas about another topic concerning collective goods, e.g., about innovations and property rights, and we are convinced of this person and these ideas, we will not look the other way merely because this is not one of the applied topics on our list. The fruitfulness of a person's research ideas and synergies with the rest of the institute seem more important to us than a literal interpretation of topic specifications. However, at this point, our applied work does focus on the specified topics.

C.III.1 The organization and regulation of network industries

C.III.1.1 General Overview

"Network industries" such as telecommunications, electricity, gas, rail transportation and postal sectors have the common feature that the provision of services to customers presupposes the use of a fixed network infrastructure, the costs of which are by and large sunk. Traditionally, these industries have been organized as vertically integrated monopolies under state ownership and/or subject to sector-specific regulation. However, the past two or three decades have seen a paradigm shift concerning the organization and regulation of such industries.

The paradigm shift is due to the recognition that not all parts of the vertically integrated monopolies are "natural" and that, for example, long-distance telecommunications services or electricity generation exhibit no technological features which would preclude workable competition. Developments in telecommunications have also given rise to the notion that some natural monopolies may be transient as technical progress makes room for the establishment of competing networks.

The change in views of network industries has induced a change in views concerning the role of regulation. Whereas in the past, regulation was mainly seen as a constraint on the exploitation of monopoly power, under the new paradigm, it has come to be seen as a promoter of competition – competition in downstream markets, as well as competition among networks themselves, where such competition is feasible and economically sensible. A key tool for this purpose is *access regulation*, the government-imposed requirement that the network owner open his network for use by other firms. Such access regulation provides other firms with a basis for offering their services in downstream markets, even against the wishes of the incumbent. It also provides other firms with a basis for building competing infrastructures piecemeal, using their own pieces of infrastructure

where they have already built them and relying on the incumbent's infrastructure where they do not yet have their own.

The organization and regulation of network industries under the new paradigm raises important economic and legal questions. Important *economic questions* are:

- What is an appropriate system for determining access prices?
- How does one provide the network owners with incentives to actually do what the regulatory institutions want them to do?

The first question is closely connected to the issues discussed in C.I concerning the tension between efficiency in access and the need to cover the costs of the network infrastructures. (In principle, we can think of a network infrastructure as an excludable public good, the use of which serves as an input into the provision of final outputs, which themselves are private goods.) Access prices above the marginal costs of use would entail some inefficiencies of exclusion; access prices equal to marginal costs would preclude the recovery of fixed and common costs. In this case, there would be insufficient incentives to invest in the network infrastructures at all. By contrast, if access prices contained a very generous allowance for fixed and common costs, especially one that is based on a cost-plus calculation, investment incentives could well be excessive.

The second question is trivial if fulfilment of the access requirement is easy to verify. This is the case, for instance, for certain interconnections in telecommunications, e.g., the interconnections needed to allow a competing telephone company to offer long-distance communications on a call-by-call basis. However, verifiability tends to be a problem if quality of access matters and if this quality is easily manipulated by the incumbent. In telecommunications, an example would be the time the incumbent's personnel needs to implement the requisite switches if a business customer wants to change suppliers of basis service altogether. Reliability of delivery in the postal sector would be another example. In these cases, the regulator may find it hard to verify whether the low quality of performance or even the non-performance by the incumbent is due to bad luck – people falling ill – or due to bad will. One then needs to think about regulation as a matter of incentive provision rather than just a matter of government fiat.

On the legal side, the new paradigm for the organization and regulation of network industries raises the following questions:

- What are appropriate provisions for administrative and legal procedures?
- What is an appropriate system of governance for the regulatory authorities?
- How does a legal regime of mandated access provision fit into the traditional German distinction between public law (administrative law) and civil law?

Most substantive issues in regulation involve an important element of judgment, rather than the straightforward application of a predetermined rule. Thus, it is well-known that the allocation of fixed and common costs to the various services that are being provided

and charged for is to some extent arbitrary. From the perspective of welfare economics, as well as management science, the different costs of allocation systems have their advantages and disadvantages, but there is no way of saying a priori that one system is best. Given the importance of judgement, one can ask whether the choice should be taken by the political institutions, parliament and the government, whose powers are derived from democratic elections, or whether it should be taken by the regulatory institution, which presumably has greater expertise in assessing the industry in question. If it is taken by the regulatory institution, what recourse to the courts is available to the parties concerned? If the incumbent network owner contests an access pricing decision of the regulatory institution, to what extent does the court procedure focus on the specific price that is being contested? To what extent does it consider the place of this one price in the overall system of prices, which together should permit the recovery of common costs? Which side bears the burden of proof for the appropriateness or inappropriateness of the individual access price or the pricing system? What kind of evidence is accepted as proof in court? Given the need to rely on judgment, rather than predetermined principles, in regulatory decisions, the effective scope of regulation can depend on such procedural issues. Given that hard evidence in either direction may not even exist, in a court proceeding, the side that has the burden of proof is likely to be in a hopeless position from the very beginning.

At this point, the economist is likely to recommend that the regulator be given a significant amount of discretion to exert his judgment where this is necessary and that he bear the burden of proof in legal proceedings only when he can reasonably be expected to do so, e.g., when the question is whether a given rule for allocating common costs has been correctly applied. For the lawyer, this recommendation raises fundamental questions of constitutional legitimacy. From the perspective of constitutional law, it seems problematic that important substantive choices should be taken by an administrative authority, rather than the democratically elected legislature and government. It also seems problematic that legal protection of network owners against abuses by the regulatory institutions should be undermined by the institutions' having a great deal of discretion, without much of a burden of proof for the appropriateness of their decisions.

These legal concerns are complicated by the fact that access regulation does not fit easily into a legal system whose structure is characterized by a clear distinction between public law, which deals with the state and institutions, and civil law, which deals with relations between private parties. In principle, the imposition of network access by government fiat, like any other matter of statutory regulation, falls into the domain of (public) administrative law. However, the substance of this regulation concerns the terms of the contracts under which the network owner grants access to other firms. Whereas traditional administrative and civil law are used to thinking in terms of bipartite relations, between administrative authorities and private parties or between different private parties, matters of network access involve a *tripartite* relation, which involves the regulatory authority, the network owner, *and* the parties that want access to the network. The complications which this causes are evident in recurrent disputes about such questions as whether the parties

that want access have or should have legal standing in cases involving access regulation or whether the regulation of network industries should be handled by administrative or by civil courts. Even though the regulation of network industries falls into the domain of administrative law, the interests of private parties claiming access under the legal statute cannot be neglected.

Yet another complication of legal considerations derives from a certain tension between German constitutional law and European law. The institutions of the European Union, in particular, the European Commission, have been a major driving force behind the liberalization of network industries. These institutions see this liberalization and the opening of access to network infrastructures as tools for expanding the European internal market, which opens downstream activities to competition from other member states. The directives that have been issued are very much influenced by Anglo-Saxon legal and administrative traditions. For instance, the telecommunications directives of 2002 stipulate that the regulatory authorities be given extensive discretion, to the point of letting them even choose the tools of regulation which they want to use in order to achieve the goals listed in the directives. In the German legal community, the constitutionality of such a regime is a matter of dispute; to the extent that German constitutional law is deemed to require that regulatory competence is more narrowly circumscribed in the law, this raises the old question of whether German constitutional law or (international) European law has precedence.

C.III.1.2 Completed Research

Both institute directors have for some time been active participants in the economic and legal debates on the organization and regulation of network industries: Christoph Engel, with two monographs in his own name, Martin Hellwig, with several reports of the German Monopolies Commission.

In a 2002 monograph, "*Verhandelter Netzzugang*" (Negotiated Access to Essential Facilities), Christoph Engel provides a critical assessment of different regimes for regulating access to an "essential facility", i.e., a non-contestable natural monopoly which controls access to competition in an upstream or downstream market. While acknowledging that, in principle, the law can try to safeguard competition on the upstream and downstream markets by giving outside providers a legal right to access the "essential facility", the monograph emphasizes the difficulties of implementing such a legal right. Regulatory agencies or the courts must determine a whole, complex long-term relationship. They must regulate price, quality, terms and conditions, implementation, adaptation to changed circumstances, coordination of competing demands of access. Under the conditions of the rule of law, this is highly ambitious. However, the monograph demonstrates how such an approach could perhaps become effective, nonetheless. And it compares the approach to alternative interventions: replacing the courts by arbitrators; ex ante altering negotiation power; corporatist solutions; structural separation; ex ante instead of

ex post regulation. The corporatist solution performs best, but it comes at a high price: Rule of law and democratic control are almost completely abolished. Policy-makers might in particular prefer to alter ex post legal intervention so that it becomes quicker, more reliable, and better informed. This also entails costs in terms of rule of law and democracy, but they are more modest.

Engel's monograph served as an input into the Monopolies Commission's 2002 report "Netzwettbewerb durch Regulierung" (Access Regulation as a Basis for Competition in Network Industries). While relying on the material collected by Engel, in particular on the "essential facilities doctrine" in the United States, and acknowledging the merits of many of his arguments, the Monopolies Commission's report comes down in favour of sector-specific regulation *ex ante*, rather than the corporatist negotiated solution or the *ex post* legal intervention favoured by Engel and then practised in the electricity industry. Given that the corporatist solutions then practised concerned calculation procedures, rather than levels of access fees, such solutions were deemed to provide too much room for exploitative pricing. Moreover, a regime of *ex post* interventions on the basis of the law against restraint of competition was deemed ineffective because such a regime saddles the authority with too large a share of the burden of proof. Summaries of the arguments as well as an assessment of the access problem in the German electricity industry are given in Hellwig (2004, 2005).

Motivated by the example of the telecommunications industry under the European telecommunications directives of 2002, Hellwig (2005) also discusses the problem of coordinating competition policy and sector-specific regulation when some markets of an industry are subject to one, and some markets are subject to the other. In the European context, this coordination problem is more urgent than in the United States because, in contrast to the Sherman Act, the abuse-of-dominance provisions in Art. 82 of the EC Treaty allow for the control of excessive pricing, i.e., the exploitation of monopoly power, under the auspices of competition law, as well as regulation. The difficulties that this can create are also discussed in the Monopolies Commission's 2004 Special Report 40 on the new German telecommunications law.

Previously, the Monopolies Commission's Special Report 39 on the development of competition and regulation in the telecommunications industry had addressed some issues of access price regulation, which are of independent interest. The most important of these concerned the appropriate treatment of risk premia and of taxes in assessing capital costs for the essential facility in question. Based on standard welfare theory for capital markets under uncertainty, the report suggested that risk premia should, in principle, be based on asset specific risk, rather than the general risk of the firm in question. The assessment of asset specific risk must take account of regulatory risk; this is important if regulation is based on the costs of efficient service provision. Given the possibility that technical advances will lower the costs of efficient service provision in the future and that this lowering of efficient costs will lower regulated access prices, the possibility that such advances will lower future regulated prices affects both risks and expected returns on the assets in question. Both effects must be taken into account in regulating access prices. As

for the treatment of taxes, the standard treatment – in the literature, as well as regulatory practice – neglects the fact that the formulae of the capital asset pricing model that is used to assess risk premia must be adjusted for the fact that interest income on debt instruments is subject to personal income taxation, but, once the minimum holding period is over, capital gains that equity instruments tend to provide when firms retain earnings are not subject to personal income taxation.

In a just completed second monograph, "*Voice-over IP: Competition Policy and Regulation*", Engel (2005) analyses the challenges that Voice-over IP poses for competition policy and regulation in the telecommunications industry. Traditionally, there have been two separate telecommunications networks, one based on switches, the other based on routers. The switched network basically carried voice. The packet switched network basically carried data. Now voice is about to go packet switched too. Ultimately, both networks might merge. If that were to happen, the governance structure of either of these networks would have to change fundamentally. Currently, a large amount of packet switched traffic goes over the public Internet. The Internet is organized as a club good. There is an access fee, but no further fee for its actual use. Volume metering is technically feasible, but typically only bandwidth is controlled. In the switched network, a split price is standard. There is an access fee, plus a separate fee for each call. In a club good, by definition each side pays for part of the traffic. On the Internet, the receiver-pays principle is thus applied. In most countries, the switched network is governed by the caller-pays principle. Under that principle, there are termination charges. Each operator has a local monopoly over its customers. It is thus possible that telephony will in the future be controlled by the same principles. Actually, in that case, the only remaining property right would be access to the network.

In the opposite case, data traffic might be contaminated by the principles currently governing switched telephony. This would presuppose that operators succeed in introducing artificial property rights for the relationship with their customers Maybe even for the individual instance of communication. Technically, there are two main opportunities for this. In switched telephony, for technical reasons it is natural to give out telephone numbers to operators, not to clients. Through these numbers, they control their customers. Voice-over IP operators try to implement the same scheme for packet switched voice traffic, although here the domain name system would be natural. Domains are accorded to end-users, not to operators. A second conduit for artificially introducing property rights are technical standards. They are needed for defining addressees, for the management of real-time interaction, and for the digital coding of voice signals. By way of proprietary standards, the operator gains full control.

Competition policy should not only see to the establishment of these fundamental governance structures. It should also check the potential for distorting the systems competition between switched and packet-switched telephony. Incumbents have a host of potential strategies for creating new barriers to entry, and for distorting actual competition. Most critical are bundling strategies. Diagonally integrated incumbents might offer to carry their clients' traffic over IP where possible, and through their traditional network

otherwise. That way they could turn their customer base in the traditional networks into a barrier to entry. Currently, this strategy can work for mobile telephony. In fixed telephony, it is more difficult to implement as long as IP addressees are not ear-marked.

C.III.1.3 Research Questions

To make progress in thinking about the general issues discussed above, we intend to work on the following specific questions:

- To what extent is there a conflict between the governance of regulation under the new European Telecommunications Framework and the requirements of German constitutional law? Tension arises not only from concerns about the democratic legitimacy of regulatory decisions and about the scope of legal protection for the addressees, but also from concerns about the role of foreign institutions, in this case the regulatory authorities of other member states, in national regulatory decisions.
- Are there modes of procedure that satisfy the economist's concern for efficiency, as well as the lawyer's concern for due process? The 2002 Monopolies Commission's report suggested a two-stage procedure such that, at one stage, the authority determines, e.g., a system for allocating fixed and common costs, and at the second stage, the authority determines the individual price, the idea being that, at stage 1, the addressee can question the appropriateness of the chosen system, and, at stage 2, he can question the way the system is being applied, without, however, questioning the appropriateness of the individual price on substantive grounds.
- The fact that competition policy and access regulation in the telecommunications sector exist side by side raises questions concerning the proper dividing lines between regulated and unregulated markets or groups of markets, the proper relation between abuse-of-dominance concerns under competition policy and access regulation, finally also concerning the institutional alignment of the two policies.
- In some network industries – the telecommunications sector again provides the leading example – access regulation is complicated by the fact that access can be provided at several stages of the value creation chain. This raises a question of the consistency of different access prices. If one believes that it is unrealistic to suppose that regulation can get the system of access prices right, one must ask which types of error are more important: errors that hurt entrants further upstream, who partly build their own infrastructures; or errors that hurt entrants further downstream, who don't build much of an infrastructure at all.
- What is an appropriate procedure for calculating capital costs? As mentioned, the 2003 report of the Monopolies Commission sketches some principles. However, these need to be spelled out formally, and, to the extent that they impose unrealistic infor-

mation requirements on the regulator, appropriately manageable proxies must be developed.

- How can one deal with incentive problems in regulation, in particular incentive problems concerning quality of access provision? Most analyses of incentive regulation focus on prices, but quality must also be taken into account.
- Is it really appropriate to saddle the incumbent with the risks that, under a regime of regulation, according to the costs of efficient service provision, technical change may alter the access prices that the regulator imposes? What about the risks of changes in interest rates and similar market parameters that affect the costs of efficient service provision?
- If network capacities are limited, how is this limited capacity to be allocated between the incumbent and, possibly, several entrants? This problem is particularly difficult for cross-border electricity transmission, where capacity limits concern aggregate *net* electricity flows, i.e., transmission in the direction which has the smaller gross flow adds to, rather than subtracts from, transmission capacity.

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C.III.2 Financial stability and the regulation of financial institutions and financial markets

C.III.2.1 General Overview

Discussions of collective goods do not usually refer to the financial sector. However, collective goods aspects play an important role in arguments about statutory regulation in this sector. In most countries, financial-sector regulation is more stringent than the regulation of other sectors. A first line of argument justifies this regulation by referring to problems of asymmetric information and moral hazard in financial relations, but that raises the question why the regulator should be able to handle these problems better than the parties themselves. A second, more solid line of argument then refers to the systemic, collective goods aspects that arise because the handling of asymmetric-information and moral-hazard problems by the contracting parties has repercussions for the rest of the system.

Such collective goods aspects can be due to domino effects or to confidence effects. *Domino effects* arise when outcomes in one set of financial relations or financial transactions have implications for the participants' relations with third parties. In a simple case, the insolvency of a firm or a set of firms brings the firms' banks into difficulties, and this has repercussions for the banks' depositors and other financiers. A recent example was provided by the 1997 crisis in Thailand, when the devaluation of the Baht induced the bankruptcies of many Thai firms that had borrowed in dollars, which in turn compromized the solvency of the Thai banks that had lent to these firms, and caused problems for the international banks that had lent to the Thai banks.

Systemic effects can also arise through markets. A financial institution that gets into difficulties may be forced to sell its assets. By putting the assets on the market, it may depress asset prices. The decrease in asset prices in turn may put pressure on other financial institutions that have also invested in them. A domino effect arises even though there may be no contractual relation at all between the first institution and the others. A recent example of this concern was provided by the 1998 Long Term Capital Management (LTCM) crisis. The Federal Reserve Bank's organization of an operation to rescue LTCM, at least for the time being, was motivated by fear that an immediate closure and liquidation of LTCM's assets would have a drastic effect on the prices of long-term bonds to the detriment of all financial institutions that were holding these bonds. A historical example of such domino effects resulting from the interdependence of insolvencies, asset liquidations, and asset prices is provided by the 1763 financial crisis studied in Schnabel and Shin (2004).

A final "chain reaction" effect concerns the macroeconomy. A final institution that gets into difficulties is usually unable to continue its financing operations on the same level as before.

Its clients may find it expensive or difficult to get funds elsewhere because nobody else knows them as well as their previous partner. If many financial institutions get into difficulties at the same time, there may then be a "credit crunch", leading to an overall decline in external investment finance and in aggregate investment activity, with further repercussions on aggregate demand and employment in the economy. These kinds of "multiplier effects" of financial crises on macroeconomic investment played a major role in the Great Depression, as well as the banking crises and macroeconomic recessions of the early nineties in the Scandinavian countries.

Confidence effects are important because the willingness to participate in financial relations depends on confidence, which in turn depends on what they see around them. If one bank goes under, another bank's depositors may become apprehensive and start to withdraw their funds, putting pressure on that bank's liquidity. Indeed, if the two banks' asset positions are correlated, such a reaction is fully rational, as the breakdown of the first bank contains relevant information. By exactly the same kind of argument, somebody's wanting to sell an asset may be deemed to contain information about the asset and may induce people to be apprehensive about buying it. Thus, in the LTCM crisis, the price effects of immediate closure and liquidation were deemed to be incalculable because market participants were apprehensive about the prospect of a crisis, and the closure itself might have provided a bad signal, making people unwilling to buy the assets that LTCM would have to liquidate, except at greatly depressed prices.

In these considerations, the collective goods aspects cannot be identified with any one good that is bought or sold. Both domino effects and confidence effects concern the functioning of the overall system of institutions, contracts, and markets. The actions that individuals take and the contracts that subsets of individuals write all have repercussions for the functioning of the system, but people rarely consider these repercussions. Actions are taken from the perspective of the individual in question, contracts are written from the perspective of the participants – how they affect the system is of little interest to them.

This is where statutory regulation and supervision of financial institutions and financial markets comes in. In principle, this regulation is intended to induce participants to adjust their behaviors so that collective good aspects are duly taken into account. Thus, traditional asset-allocation rules and capital-adequacy requirements are meant to protect the solvency of financial institutions and to eliminate the possibility of domino effects even before they have a chance to get started. Publicity rules for listed securities, as well as rules against insider-trading regulations of market micro-structure, are meant to protect the orderly functioning and the liquidity of markets by eliminating the worst instances of asymmetric information leading to market breakdown.

However, the incidence of statutory regulation is not always clear. Poorly designed rules may well be counter-productive. Thus, statutory deposit insurance seems to have played a role in exacerbating the crisis of the savings and loans industry in the United States in the nineteen-eighties. The enhancement of depositor confidence by deposit insurance may avert destabilizing bank runs. However, it also worsens the incentives of depositors

to monitor the institutions in which they deposit their money and, by implication, the incentives of these institutions' managers to avoid exposing their institutions to excessive risk. In the eighties, this latter effect prevailed when institutions close to insolvency were "gambling for resurrection", using advertisements of high interest rates on "federally insured deposits" to expand their deposit base and thereby the funds they had available for such gambling.

Capital-adequacy requirements, which, over the past two decades, have become a mainstay of banking regulation, have also been questioned. Initially, in the early nineties, discussion focused on incentive distortions due to inappropriately chosen "risk weights" in capital requirements. More recently, discussion has turned to the procyclical macroeconomic implications of more finely tuned capital requirements, as well as the actual implications of such requirements on the actual risk exposure of the financial system. One might also be concerned about the moral-hazard implications of a regulatory scheme which, under the model-based approach, leaves the computation of required capital to the institutions themselves.

For the lawyer, financial regulation raises even more questions than the regulation of network industries. The concerns about democratic legitimacy and the rule of law that were discussed above for the regulation of network industries must also be raised here. Democratic legitimacy is in doubt because the "Basel process" for developing rules for capital regulation has not really been controlled by any institutions whose legitimacy was based on democratic elections. While the individual members of the Basel Committee on Banking have been appointed by their respective national governments, the Basel Committee as such has worked as a committee of experts with little outside interference, and has presented its accords for individual countries to adopt on a take-it-or-leave-it basis. Until small entrepreneurs came to fear that "Basel II" would make it more difficult or more expensive for them to get bank loans, there was hardly any discussion of this regulation in the political arena. However, there was a lot of discussion with certain interested parties, mostly from the large, internationally active banking institutions and their lobbies. This discussion was to some extent driven by the notion that the more sophisticated large, internationally active banking institutions are more competent in advanced risk management than the bank regulators themselves; less attention was paid to the notion that the risk management of a private institutions on its own account might be driven by different concerns than the risk management that a regulator wants to impose in order to avoid systemic risk.

At the level of the implementation of rules, i.e., of banking supervision, concerns about the rule of law arise with respect to the handling of the models-based approach to determining required capital and with respect to the valuation of a bank's assets and the assessment that the bank is in difficulties. Within the models-based approach, the assessment of the model used by a bank involves an important element of arbitrariness. Backtesting of such models could be helpful if the underlying data exhibited sufficient stationarity. In practice, however, they do not; this is a problem for the banks themselves, and even more so for the bank supervisors. Important elements of arbitrariness are also

involved in the valuation of loans that the bank has made and in the supervisory assessment that a bank is in such trouble that it ought to be closed. If loans are not traded in open markets, there is no extraneous measure of borrower solvency and, hence, no "objective" valuation standard.

All of these assessments require judgment and can hardly be codified so as to lend themselves to sensible court proceedings. Even if a court review of such administrative decisions was feasible, it would hardly be effective. By the time the courts rescind an unjustified regulatory intervention, the damage may be beyond repair. The major damage is likely to involve reputation and depositor confidence. These are difficult and sometimes even impossible to restore once they have been impaired. Given the role of discretionary judgement and given the substantive importance of supervisory intervention for a bank, the question how such decisions can fit into the framework of German constitutional and administrative law is even more puzzling than for the regulation of network industries.

C.III.2.2 Completed Research

One of the institute directors has for a long time been engaged in doing and organizing research on financial institutions and financial markets. One line of this research, surveyed in Hellwig (1991), Hellwig (2000), and Hellwig, Laux, and Müller (2002), has focused on questions of governance in bank-firm relations and within corporations. Another line of research has studied problems of risk allocation and regulation, with a particular focus on systemic aspects. This work is surveyed in Hellwig (1995) and Hellwig (1998). More recently, it was the subject of the 2003 Baffi Lecture at the Banca d'Italia.

Hellwig (1995) stresses the need for considering macroeconomic repercussions of capital regulation when the returns that banks earn are correlated. This paper also points to the difficulties that counterparty credit risks – and the correlation of these credit risks with the underlying risk factors – cause for risk assessment and risk management at the level of the individual institution, as well as the overall system. As an illustration of the problem, the above-mentioned domino effects that were triggered by the devaluation of the Baht in 1997 brought home the lesson that a dollar-denominated loan can be a less-than-perfect hedge against exchange rate risk: If the borrower is unable to cope with the additional debt burden imposed by a devaluation of his own currency relative to the currency in which he borrows, the dollar-denominated loan contract has merely transformed the exchange rate risk in lending into a credit risk that is correlated with the exchange rate risk.

A third line of research considers the interplay of financial institutions and financial markets in allocating risks, processing information, providing incentives, and influencing governance. These issues are surveyed in Hellwig (2005). In assessing the theoretical merits of the notion of "market discipline", Hellwig (2005) stresses the difference between systems in which the financiers of an industrial firm or a bank have explicit rights of inter-

vention and systems where there are no such rights, but, for some reason or other, market prices of outstanding assets provide a measuring rod for managerial compenzation or for discussions within the institution in question. The paper also discusses some of the agency problems of "gatekeepers", such as analysts, auditors, and investment bankers, in open markets and suggests that a shift from "bank finance" to "market finance" is sometimes merely an exchange of one class of agency problems for another.

Recent research contributions have been provided by Schnabel (2003, 2004) and Schnabel and Shin (2004), as well as Hakenes and Schnabel (2004, 2005). Schnabel and Shin has already been discussed above. Schnabel (2003, 2004) has studied the German "twin crisis", i.e., banking crisis and currency crisis of 1931. These papers show that the banking crisis was not just the unavoidable consequence of a run on the Reichsmark, coincidentally turning into a run on German banks, but to a large extent, it was caused by problems in the banking sector itself. Relying on new data from the Reichsbank archives, Schnabel shows that, prior to the crisis, the "great banks" with large branch networks had held relatively fewer liquid assets than other institutions; moreover, a relatively larger fraction of their holdings of liquid assets took the form of commercial paper, the liquidity of which depended on the availability of the Reichsbank's discount facility. Past experience had provided these banks with some justification for the view that the Reichsbank would provide them with privileged access to the discount facility. In the crisis itself, the Reichsbank actually did so, providing the Danat Bank with liquidity even beyond the point where it was technically insolvent. It stopped doing so only when its own means were exhausted because the currency run, as well as the support for the banks, had made it run up against the limits given by the legally required 40 percent coverage ratio for its currency issue. At that point, the Reichsbank's discount window had to be closed, and the banking crisis was precipitated. All of the "great banks" with large branch networks had to be reorganized with the support of the state. By contrast, the Berliner Handelsgesellschaft, which had been more cautious in its liquidity management, came through without state support – despite the fact that it relied even more heavily than the others on foreign funding, which was withdrawn in the currency crisis.

Hakenes and Schnabel (2004, 2005) study the systemic implications of fiscal or regulatory discrimination between financial institutions. In Hakenes and Schnabel (2004), the discrimination results from a too-big-to-fail policy of the government. In Hakenes and Schnabel (2005), it results from the introduction of regulatory options, which only some banks are able to take advantage of; an example is the option to compute capital requirements on the basis of internal models, which are so costly that only large institutions find it economical to use them. In both papers, the discrimination improves the competitive position of the privileged institutions in the market for funds. Because competition is more intense, deposit rates go up, and the non-privileged institutions are negatively affected. By a standard asset substitution argument, these institutions then have greater incentives to take risks. Because of the additional risks they take, the overall risk exposure of the system can increase even though the discriminatory measure considered works to decrease the risk exposure of the privileged institutions.

C.III.2.3 Research Questions

Like the organization and regulation of network industries, the financial sector provides research questions for both lawyers and economists:

How does the governance of financial regulation fit into the German legal system? A similar question has already been raised for network industries. Here, some key issues would be: What is to be made of the fact that the financial supervisory authority has extensive legal powers, to the point that he can threaten the very existence of institutions in his domain? What is to be made of the fact that, in the process of assessing bank capital and solvency, the valuation of, e.g., loans whose performance might be in doubt involves a great deal of discretion? How much independence of the authority from political intervention is appropriate?

How are we to assess the relation between different institutions, nationally and internationally, as a matter of law and as a matter of economics and politics? Internationally, banking regulation is harmonized under the auspices of the Basel Accords and the corresponding regulations of the European Union. Within the European Union, under the home country principle, banking supervision is a national activity. However, central bank intervention to support an institution is likely to have repercussions for monetary policy, which is the prerogative of the European Central Bank. At the national level, the regulation and supervision of financial activities involves an intricate interplay between the finance ministry, the supervisory authority, and the central bank.

Financial regulation is motivated by a desire to protect the financial system. However, the addressees of financial regulation are the individual institutions. How do these things go together? For instance, the ban on insider trading is intended to protect the functioning of markets. Banking regulation and supervision is intended to eliminate systemic risks. For the economist, this raises the question by what mechanisms the regulation of individuals safeguards the functioning of the system. For the lawyer, this raises the question as to what precisely is being protected and how the desire for protection supports, e.g., the imposition of criminal penalties for insider trading.

What tradeoffs have to be considered in financial regulation? Developments in banking over the past two decades have induced banks to securitize many risks in order to shift them to other market participants. Banking regulators have welcomed and encouraged this process; indeed, the specification of capital requirements under Basel II provides strong incentives in this direction. However, what are the implications for the other market participants and for the overall risk exposure of the system? Could it be that, as a result of this development, insurers end up bearing too much risk? Could it be that banks have too much of an incentive to initiate risky investments, knowing that they will shift these risks to "the market" afterwards?

A second tradeoff concerns information and control. As discussed in Hellwig (2005), "market discipline" of financial institutions is likely to be more effective the more scope there is for outright intervention by market participants. For example, a depositor's right

to withdraw his funds is likely to be more effective than a shareholders right to sell his shares in the market, which may induce a share price decline and thereby exert an effect on management. However, price movements and management reactions to such movements can provide for a more subtle reaction to the information that is available in the market. The zero-one choices involved in withdrawing funds or not provide for a much coarser reaction. As shown, e.g., by Rochet and Vives (2004), this coarseness may lead to an inefficient use of information. Their analysis raises the question whether this inefficiency is a necessary by-product of the greater effectiveness of the intervention.

A third tradeoff concerns liquidity provision through markets and through institutions. This is most easily understood by considering the pros and cons of universal as opposed to specialized banking. Discussions of this issue have often focused on the additional constraints that a separation of commercial and investment banks imposes on the individual institutions. By this argument, the Glass-Steagall Act in the United States was detrimental to efficiency. However, one may wonder whether the existence of large, well-functioning, and highly liquid money markets may not be a by-product of the separation of banking under Glass-Steagall. If commercial banking and investment banking are institutionally separated, there is a need for such markets to channel funds between institutions. With a high volume of "normal" transactions, information-based trades are likely to be less important; therefore, market participants have less need to beware of "lemons problems", and overall market liquidity should be higher. Conversely, a merger of institutions that takes substantial transactions off the outside market is likely to reduce market liquidity. Similar arguments have recently been developed in the industrial-organization literature on vertical integration and disintegration: A market participant who pursues upstream vertical integration in order to have greater assurance about input supplies will thereby take transactions out of the open market and reduce the market's ability to provide supply assurance to the remaining market participants. Conversely, the development of a well-functioning and liquid open market for the inputs in question is likely to reduce incentives for vertical integration and may even lead to "outsourcing".

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D. Researchers at the Max Planck Institute

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D.I List of Researchers in Alphabetical Order

Anne van Aaken

Thomas Baehr

Stefan Bechtold

Martin Beckenkamp

Florian Becker

Felix Bierbrauer

Dirk De Bièvre

Melanie Bitter

Dominik Böllhoff

Tanja A. Börzel

Pieter Bouwen

Arndt Bröder

Christoph Engel

Henry Farrell

Thomas Gaube

Hendrik Hakenes

Mikaela Hansel

Martin Hellwig

Adrienne Héritier

Felix Höffler

Katharina Holzinger

Alkuin Kölliker

Guido Kordel

Jörn Lüdemann

Stefan Magen

Frank P. Maier-Rigaud

Remi Maier-Rigaud

Chrysostomos Mantzavinos

Margaret McCown

Andreas Nicklisch

Dorothee Schmidt

Christian Schmies

Isabel Schnabel

Christian Schubert

Ingolf Schwarz

Indra Spiecker gen. Döhmann

Stephan Tontrup

Marco Verweij

Carl Christian von Weizsäcker

D.II Individual Research Portraits

D.II.1 Current Members of the Institute

Anne van Aaken

Summary Report

Having studied both economics and law, my research interests center around the possibility of analyzing legal rules by drawing on the methods of economics, as well as analyzing subject matters with economic relevance.

Past research was directed by the question of the methodology of law and economics, especially the possibility of using and integrating economic methodology with public law and legal theory within a civil law tradition. It includes positive and normative questions of law and economics. Key aspects of my interest are the importance of (legal) procedures for questions of impact assessment of different rules, as law and economics usually focus on substantive law. Here, the integration of discursive features, relying theoretically on deliberative theories, into a rational choice model is one aspect (2003, 2005). How does the integration of discursive features influence conflict resolution, questions of legitimacy and rule-following? What kind of behavioral assumptions do we need for regulatory impact assessment or evaluation of rules? (2005) Behavioral law and economics gives some hints, but does not integrate discursive features. Here, questions of regulatory forms arise: to what extent are procedures a substitute or important compliment to substantive law? Those issues also allow for analysis of constitutional law questions, such as paternalistic laws regulating self-destructive behavior (2005).

Another major interest is a new research area developing in the U.S.: economic analysis of public international law. Even though international relations widely use a rationalist model to explain international relations, an in-depth doctrinal description, combined with a social science approach, is still largely missing, especially in European international law scholarship. Many areas are still underresearched. One project, connecting to the aforementioned procedural interest, deals with procedural questions in international human rights law from a rational choice perspective (2005). More generally, a working paper, surveying the literature in that field, is a current project. A conference in 2006, bringing together U.S. scholars and European scholars, is planned together with Prof. Engel and Prof. Tom Ginsburg (U.S.A.), under the condition that the grant applied for is approved.

Substantive law areas of present research are international economic law, with a focus on international investment law. Here, problems of balancing the regulatory sovereignty of host states, such as environmental and human rights issues, on the one hand, and investor protection, on the other hand, are my main areas of interest. One recent decision of ICSID on the Argentine crisis in 2001 was the inducement for writing on state necessity and investor protection. As international investment law is becoming ever more important in a globalized world, more research on it is planned.

Research Agenda

The focal point of my research plans is the post-doctoral (habilitation) project about the supervision of financial markets in an open and cooperative state. I intend to analyze financial market supervision in its entirety, i.e., banking, insurance and stock exchange supervision, as those areas are so deeply interwoven, not only concerning the factual problems to be solved but also the legal instruments used to solve them, that separate research would be inadequate. The criteria used to assess the adequacy of the supervision of financial markets are the regulatory goals as stated in the relevant legal material (e.g., the protection of investors and the stability of financial markets), the democratic principle, the rule of law, and constitutional rights. The project deals primarily with two questions. First, what kind of supervisory and regulatory administrative instruments are adequate in high-risk sectors such as financial markets? Here, the analysis will focus on the national plane, as supervision is still nationally executed. Second, how is the interplay between multilevel governance structures in the financial market field legally organized? Here, the entanglement between the national, supranational, and international plane comes to the fore. Both issues will be analyzed with a focus on the relevant actors and their forms of participating in the market as rule-takers and rule-makers.

Concerning the first question, the basic scenario assumed is the diminishing regulatory power of nation-states under conditions of globalized financial markets. *Inter alia* due to the high risk of financial markets and information asymmetries between supervisor and regulated industry, classical administrative law instruments are insufficient. Therefore, cooperative forms of administrative law are developing. Here, the incentive compatibility of regulation and the interplay between private and public law will be an issue (capital market law and corporate law). The actors in financial markets, that is, the supervisor (BaFin; Bundesbank), the financial service corporations, consumer and investors, as well as other relevant financial market actors such as rating agencies and auditing firms, and their legal forms of action are to be analyzed.

The second question takes up the context of increased financial integration in Europe and increased globalization. Here, questions of new forms of governance and democracy (e.g., the Lamfallussy-process, (in)formal cooperation between administrative agencies and supervisors, e.g., the Basel Committee on Banking Supervision) arise. Inquiry into forms of governance which ensure the accountability for and the legitimacy

of decisions, as well as respect for constitutional rights, and allocation of constitutional functions within a network structure, will be the focal point. The term "network" summarises the interaction between legal systems – on the national level (that is, German), the European and the global level – and the different actors responsible for certain tasks – like states, international organizations, NGOs, (transnational) corporations, and individuals – that appear on these levels. Financial market regulation and substantive standards of supervision are to a large extent found in European law and international soft law (Basel II). Furthermore, WTO law, especially GATS, sets a frame for trade in financial services. Even if GATS does not itself set substantive standards of supervision, it does liberalize the markets of financial services, and therefore supervisory conditions for market access come to the fore. The country-specific schedules in the annex to GATS regulate the access to the national financial markets and are currently renegotiated under the Doha round. At ICER, the legal background of the interplay between the GATS standards, inter alia, of national treatment and most-favoured nation clause, the schedules and the "prudential carve-out", an exception from the GATS rules designed to ensure that governments can protect the financial system and its users, is analyzed. Furthermore, the interplay of GATS, as well as international soft-law standards, on the one hand, and the EU standards, on the other hand, will be analyzed. How may GATS rules influence supranational and ultimately national financial market supervision substantially and procedurally? Who are the relevant actors on the international plane in setting the standards? How does this influence the democratic principle?

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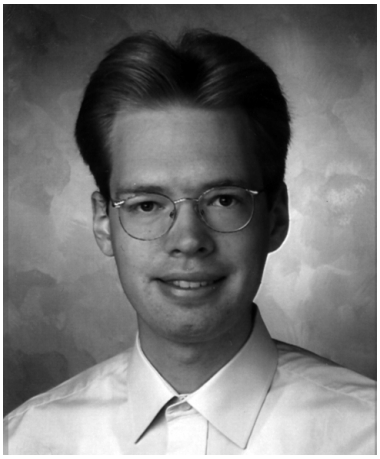

Stefan Bechtold

Summary Report

My previous research has focused on intellectual property, Internet and technology law, as well as the intersections between these areas of law, both in Europe and the U.S.

My legal Ph.D. thesis on the implications of Digital Rights Management (DRM) systems, which was published in early 2002, dealt with regulatory problems at the intersection of copyright and Internet law. Using copy control and other technologies, DRM systems attempt to ensure that consumers pay for using digital content (music, video, text etc.) and that content providers are adequately remunerated. The thesis shows that the intertwining of different means of protection in a DRM system (technology, contracts, anti-circumvention provisions, technology license agreements, and traditional copyright law) has the potential to supplant traditional copyright protection. Based on technological and law-and-economics analyses of DRM systems, the thesis assesses what role copyright law can and should play in a future DRM-suffused environment. The thesis argues that copyright law is transforming from a regulatory tool which protects authors to a regulatory tool which protects consumers and the society at large.

After finishing the Ph.D. thesis, I worked on other areas of DRM research that were not covered in the Ph.D. thesis. In 2003, I wrote an article that analyzes newly emerging technologies and their impact on DRM regulation. The article analyzes the relationship between DRM systems, innovation policy, and competition policy. In 2004, I wrote an extensive analysis of the German anti-circumvention regulations that prohibit the circumvention of DRM technologies. Also in 2004, an article that compares the legal framework surrounding DRM that was adopted in the United States and in Europe was published in a U.S. comparative law journal.

Outside the DRM debate, I worked on other areas of Internet law and regulation as well. In 2002 and 2003, I worked on an article that analyzes unifying features of namespaces (including DNS, ENUM, Peer-to-Peer systems, TCP port numbers, public key infrastructures, instant messaging systems, as well as bibliographic classification schemes and social security numbers). The article introduces the concept of namespaces to the policy debate and argues that they are an overlooked facet of governance both in cyberspace and real space. It develops an analytical framework that can be useful in analyzing legal problems in the areas of speech, access, privacy, copyright, trademark, liability, conflict resolution, competition, innovation, and market structure. In 2003 and 2005, I worked on articles analyzing the implications various "trusted computing" initiatives (by Microsoft, Intel, HP, IBM and many other companies) have for competition,

privacy, and copyright policy. On a more general level, these articles discuss the relationship between law and technology as regulatory tools.

My interaction with researchers from other disciplines who are working on information technology – in particular computer scientists and economists – was deepened by co-organizating two interdisciplinary conferences, as well as participating in various program committees of such conferences in Europe, the U.S. and Australia. Since 2002, I have been a non-residential fellow at the Center for Internet and Society at Stanford Law School. As part of the fellowship, I am giving talks and participating in the discussions at the center.

Finally, I worked on general questions of intellectual property law. In 2004, at the suggestion of the Max Planck Institute for Intellectual Property, Competition and Tax Law, I worked on an article that develops a general roadmap for future research in German legal academia at the intersection of copyright law and technology. Since 2004, I have been an appointed member of the expert committee on copyright and publishing law of the "Deutsche Vereinigung für gewerblichen Rechtsschutz und Urheberrecht" (German Assoication for Intellectual Property Law), which prepares and discusses drafts for legislative amendments of European and German copyright and publishing law as an input to European and German legislators. From September to October 2005, I was a visiting scholar at the Institute for Information Law at the University of Amsterdam, The Netherlands. I worked on a paper which compared how U.S., European, and Australian copyright case-law dealt with emerging technologies, in particular Peer-to-Peer systems.

Research Agenda

As part of my research on technology regulation, I am continuing to work on the legal and policy implications of trusted computing technologies, which are still in their early stage of development. Already existing informal collaborations with computer scientists and legal scholars from the Trusted Systems Lab of Hewlett Packard Laboratories in Bristol (U.K.), Stanford University, and the University of Bochum are likely to be deepened; mutual interests exist to analyze the technological, legal, economic, and behavioral foundations of a theory of how trust can be created and maintained in a networked environment. In addition, together with Dr. Jörn Lüdemann (also working at the institute), I am working on a paper that analyzes whether the network of regulatory authorities that was established in European telecommunications law in 2002 could and should serve as a model for other areas of European administration. The paper highlights the slowness and complexity of the network and points to legitimacy deficiencies the network suffers from.

As part of my research on intellectual property law, I am collaborating on an English language legal commentary on European copyright law that will be published by Kluwer Law International in 2006. I am writing a commentary on the European Directive

2001/29/EC, which is the most important copyright directive that harmonizes European copyright law on a horizontal level.

As a long-term project that will also be my habilitation, I will analyze the creation and definition of markets as a problem of institutional design. The project will analyze what institutions the legal system and alternative ordering mechanisms – e.g., informal rules and technology – have to provide in order for private actors to trade goods on a market. The project will not focus on how existing markets can be sufficiently sustained. Rather, it shall analyze what conditions must exist so that a functioning market emerges in the first place. In this area, which is dominated by the discussions of Ordoliberalism on an appropriate economic order and of New Institutional Economics, the project intends to focus on two areas. First, cases shall be analyzed in which a private actor creates a new market upon which different goods may be traded. Second, cases shall be analyzed in which a private actor creates a new good that can then be traded on a market which has yet to emerge. Specific legal areas that will be analyzed from this perspective include alternative trading systems, auction platforms on the Internet, selective distribution systems, application programming interfaces within computer software, the control of repair and remanufacture markets by intellectual property rights, and the regulation of network industries.

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Martin Beckenkamp

Summary Report

The study of social dilemmas is the main focus of my research. Social dilemmas are a class of problems of interest to very diverse disciplines – for example, law, economics, political science. On the one hand, my work integrates views from psychology and cognitive science into interdisciplinary discussion, and, on the other, it combines psychological approaches with empirical and methodological knowledge from other disciplines. In my work on this, mathematical game theory plays a significant role. One project that I am currently pursuing serves to lay the foundations of institutional ergonomy: this field will do more to render psychological knowledge fruitful for questions of institutional design, while also making other disciplines sensitive to the psychological elements of relevance for institutional solutions to social dilemmas. At the Max Planck Institute for the Study of Collective Goods, I have been able to deepen my interdisciplinary experience in collaborative work with economists, legal scholars, and political scientists; and in various courses and forums, I have been able to share my background knowledge of cognitive science, social psychology, statistics, and methodology.

In this time period, together with the economist Frank Maier-Rigaud, I have also begun cooperative work at Reinhard Selten's laboratory for experiential economic research, and started joint experimental studies with Dr. Heike Hennig-Schmidt. Frank Maier-Rigaud and I were able to acquire third-party funding from CLaSF (The Competition Law Scholars Forum) in order to carry out experiments on the effects of rebate systems: In September, these results were presented in London, and the results will be published in the journal of this organization. Beyond this experimental work, I am engaged in methodological work on the question of the proper level from which to describe the behavior of "corporate actors", who are in many cases the relevant actors for communal good problems.

Research Agenda

In my present work, I am focusing on working out thoughts on institutional ergonomy and group-think. Besides the related goal of increasing my committed engagement in interdisciplinary discourse – for example, by becoming a member of the social scientific board (Sozialwissenschaftlicher Ausschuss des Vereins für Socialpolitik) – I want to increasingly sensitize psychology to the issues of institutional design and (neo-)institutional economy. Views and theories from psychology have long been imported into these areas, but without a noteworthy contribution from psychology itself. I believe that opening up psychology to these questions in a conscious and targeted manner could sub-

stantially enrich the discipline. Economic psychology is especially well-suited for this, although, for a long time, it has primarily dealt with matters of business and less with issues from political economy, law, policy studies and political science. On the 28-29 January, I thus attended and held a talk at the Conference for Economic Psychology in Mönchengladbach. Further, I am now developing ideas about processes of self-organization and emergence that allow us to more precisely delimit corporate actors from collective actors. This is to result in a book contribution for our working group on corporate actors.

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Felix Bierbrauer

Summary Report

Optimal Taxation and Public Good Provision in a Two-Class Economy

In debates on the size and spending of the public budget, alternative – often conflicting or even opposing – views on tax policy, the provision of public goods, or the desirable extent of redistribution are expressed. Some of my recent work tries to shed light on the causes and consequences of these conflicts by investigating a problem of optimal taxation and optimal public good provision.

This task is also of theoretical interest as it requires the study of the interaction among incentive problems usually dealt with in separate branches of the literature. The equity-efficiency tradeoff in the theory of optimal income taxation deals with the problem of incentive-compatible redistribution, assuming that the earning ability of individuals is not observable. The literature on the free-rider problem in public good provision is concerned with the revelation of individuals' willingness to pay for a public good. The coexistence of two different theories in the field of public economics, each analyzing a specific dimension of private information, leads to the following question: What does optimal public policy look like if the problems of optimal taxation and public good provision have to be addressed simultaneously and individuals differ with respect to their earning ability and their valuation of a public good?

The model used to address this question distinguishes only two classes of individuals: a productive class and a less productive one. A utilitarian planner decides on public good provision as well as the design of an income tax, which is raised to cover the cost of provision and possibly to allow for redistribution. Individuals differ with respect to their valuation of public goods and the disutility they associate with being taxed. It is shown that, with linear income taxation and without redistribution, less productive individuals have an incentive to exaggerate their preferences for public good provision, as the more productive have to pay the larger tax bill. This implies a tradeoff between optimal public good provision and efficient taxation. With optimal nonlinear taxes, by contrast, more productive individuals exaggerate preferences for public good provision in order to limit the redistribution of private consumption. This gives rise to a tradeoff between optimal public good provision and optimal redistribution. The latter observation gives rise to the main result: A state with a constitutional setting that allows for a level of re-distribution that causes an equity-efficiency tradeoff will end up with one of two regimes: Either there will be a “welfare state”, i.e., a lot of redistribution is undertaken, accom-panied by a high level of public good provision. Or there will be a “slim” state, which is less active in both dimensions.

Research Agenda

My future research will continue to focus on the relationship between two areas of public policy: redistribution and the provision of public goods. It is assumed that the relevant information for public policy, namely the earning ability of individuals and their valuations of public goods, is not known to a policy-maker. This implies that a revelation procedure is necessary for policy implementation.

From a policy-maker's perspective, the relevant information has two dimensions: There may be aggregate uncertainty, or there may be uncertainty on the individual level. To be more precise, the distribution of earning ability in the economy may be known, but there may still be uncertainty with respect to the position of specific individuals in the given cross-section. In this case, if taxation is based on earning ability, a screening procedure is needed, although there is no aggregate uncertainty. On the other hand, there may be neither information on the aggregate valuation of a public good nor on the individual valuations; that is, there may be aggregate uncertainty and uncertainty on the individual level.

The literature on the problem of incentive-compatible redistribution has focused on situations in which there is no aggregate uncertainty. In contrast, in the literature on public good provision, the variable of interest is the aggregate valuation of a public good. Hence, a revelation procedure in this context is an instrument of information aggregation.

The interaction of those problems of screening and information aggregation raises specific questions:

Should individuals be expected to realize that their statements on the desirability of public good provision will influence the economy's tax system and hence their own tax payment?

The literature on the free-rider problem in public good provison is based on this relationship, but it does not incorporate distributional objectives based on differences in earning abilities. In contrast, the literature on optimal income taxation assumes that, in a large economic system, no individual is able to manipulate the tax system, implying that there is no problem of information aggregation.

Even if one accepts the view that the need to aggregate information is unlikely to be distorted by the strategic behavior of single individuals in a large economy, concern for strategic group behavior still remains. Groups may be able to manipulate the publicly available information in order to shift public good provison and tax policy in a direction favourable to their members. This raises the questions of which coalitions are likely to be formed in response to a certain public-policy mechanism and how such a mechanism can be made robust against coalitional manipulations.

Melanie Bitter

Summary Report

Gathering private information from the citizenry – are German public agencies free to use game-theoretic mechanisms?

The subject of deficiencies in enforcing norms of administrative law is omnipresent in the German juristic literature. These shortfalls can often be traced back to a lack of information. Frequently, informational asymmetries between the public agencies and the citizenry cause this lack of information. The citizens are able to hide information; they thus possess private information, unknown by the state. Given this situation, the question arises as to how the informational asymmetries could be mitigated.

Game theory analyses informational asymmetry, the way it affects peoples' behavior, and the problems arising from it. And it tries to develop solutions. The proposed solutions could mitigate the informational asymmetry between public agencies and citizens.

Under the assumption that the game-theoretic mechanisms succeed in revealing private information, the question arises as to whether these potential options are legally available to the state. In answer to this question, the conventional methods that public agencies use to gain information are presented. The basic principle is that of judicial investigation. Within the scope of this maxim, rules are laid down relating to the contribution of the citizens, specifically their participatory duties. The participatory duties are part of the evidence available to the agencies. The rules of evidence determine which kinds of evidence are allowed, which standard of evidence must be reached, and who carries the burden of proof.

Whereas the principle of judicial investigation does not form a rigid obstacle to the application of game-theoretic mechanisms to law, in the framework of the rules of evidence, one specific problem arises: it is questionable whether the information conveyed by signaling, screening, or auctions complies with the requirements of close reasoning. The conveyed information and substitutes for information, like the signal, are linked by the economic paradigm of rationality. This paradigm is nothing but a scientific heuristic. The law, on the other hand, demands an empirical conjunction between the required information and the substitute for the information.

Further reservations about applying game theory pertain to the idea of man. Game theory rests upon the economic model of rationality. Players behave rationally in the sense that they compare different possible actions and their outcomes, and afterwards choose the action that maximizes their anticipated utility. Behavior is guided by the principle of utility maximization. The law, however, does not start from the assumption of *Homo oeconomicus*. Basically the Homo iuris, the legal view of man, is amenable to

the paradigm of rationality. But it also sets boundaries to the application of game theoric mechanisms. For example, it is questionable whether the public agencies can presume the rationality of man at all if they can allege that the citizens are only guided by the aim of utility maximization.

It is the difference in the underlying rationalities that gives rise to doubts about the ability to reconcile game-theoretic mechanisms with the law. The different rationalities restrict the areas and situations of application but finally present no insurmountable obstacles.

Research Agenda

There are multiple forms of contact between the citizenry and administrative agencies. Contact very often occurs within the parameters of administrative procedures. The scope for action admitted by these procedures is determined by administrative law, especially administrative procedural law. Thus individual citizens have the right to see files; at the same time, they have certain participatory duties. In many cases, the citizens even initiate the process with a request. For their part, the public authorities control the procedures. They investigate the matter and make the final decisions, often only after the exercising the discriminatory power allotted them. At the same time, the public authorities are obliged by certain duties. The citizens must be heard; a well-reasoned administrative report is to be released; third parties must participate in the procedure, etc.

Constitutional laws and constitutional principles provide the legal background for these procedural regulations. The principle of the constitutional state is the most important influence on the procedural form. It entitles the citizenry to fair procedure. For its part, the basic right to dignified human treatment prohibits the individual from being degraded into a mere procedural object. The current procedural regulations are thus determined by the higher level legal norms.

By contrast, in developing and interpreting procedural regulations, no heed is paid to knowledge from behavioral science. This applies equally to the citizens and administrative agencies. The boundaries of our cognitive abilities, the application of heuristics, the appearance of certain behavioral patterns, especially of "biases", can result in non-predicted procedural developments. Among other things, it can endanger the procedure's targets, and thus the law's governing success.

It is thus important to ask which knowledge from behavioral science plays a role in the success of administrative procedures and whether, for example, it is permissible for law to consider it.

Honours

2004	Weser-Ems-Wissenschaftspreis [Weser-Ems Science Prize]
2005	Otto-Hahn-Medaille [Otto-Hahn Medal]

Arndt Bröder

Summary Report

My research is primarily driven by the attempt to develop research methods that allow for sound conclusions concerning hypotheses about cognitive processes. Being an experimental cognitive psychologist by training, my interest is centered around the problem of bridging the gap between hypotheses about unobservable cognitive processes and observable behavior in empirical investigations. This can be done, for example, by formal measurement models that make explicit the connections between latent (cognitive) and observable (experimental) events.

Pursuing this methodological ideal, my recent research concerns (1) multi-attribute decision-making processes, (2) retrieval and reconstruction processes in memory, and (3) the further development of randomized response models in survey research.

The psychological research on multi-attribute decisions aims at formulating cognitive process models that describe actual decision behavior. Cognitive models decribe decisions in terms of information representation, information retrieval, and information integration. The strategies used may involve short-cut heuristics to save processing costs, or they may more closely resemble the normative ideal of a thorough information integration like in multi-attribute untility models. Which type of strategy people use is highly contingent on the payoff structure of environments, task variables, situation variables (e.g., time pressure), as well as individual strategy preferences. Within the framework of Gerd Gigerenzer's "adaptive toolbox" of strategies (Gigerenzer et al., 1999), my research aims at identifying predictors of strategy selection experimentally and integrating the results into a theoretical framework.

My work on memory was hitherto primarily focused on the representation of simple context features that accompany the memory for episodes. Using stochastic measurement models for disentagling the multitude of elementary processes involved in retrieving a memory trace, a research project funded by the DFG aims to reveal the dependency relations between stored context features in retrieval and forgetting.

In a collaboration with Jochen Musch, our concern is the further development of what are known as randomized response models, which are used in survey research to estimate the prevalence of socially undesirable behaviors or criminal acts like tax cheating. The survey technique assures complete anonymity to respondents by using random devices that predetermine certain responses. These methods have been validated, but they suffer from some untested problematic assumptions that we try to circumvent by extending the procedure and the psychological/stochastic model behind it, making the assumptions testable.

Research agenda

As I join the institute in October 2005, my research agenda is not yet fixed, and I expect projects to develop in cooperation with other institute members. As a general goal, I plan to approach experimental work on collective goods dilemmas from a more cognitively oriented perspective than is usual. In addition to formulating hypotheses on payoff structures and personality characteristics like risk-proneness, my goal is to formulate hypotheses about cognitive representations of the situation, information retrieval, and the integration of information (e.g., using simple heuristics), which may explain observed behavior in group dilemmas. These models will be tested in experiments. A close collaboration with Martin Beckenkamp, an expert on the conjunction of psychology and experimental economics, will be the basis for this work. In addition, because free-riding is a sanctioned and socially undesirable behavior, the further development of randomized response models in cooperation with Jochen Musch will provide a tool for estimating free-rider prevalence in several social dilemma situations. In addition, the basic work on decision heuristics will be continued.

Christoph Engel

Summary Report

My work is situated in the triangle of behavior, law, and collective goods. Some pieces combine all three dimensions. They are thus concerned with the behavioral analysis of law, as it contributes to the provision of collective goods. An example is the paper on "Learning the Law". It interprets the law as a tool for pushing behavior in the socially desired direction. It shows that, under realistic assumptions, the main effect cannot rest on a change of incentives. Rather, most of the effect is via ontogenesis early in life. Based on findings from the neurosciences and developmental psychology, the paper shows that humans grow into an environment where it is absolutely natural to permanently look out, and be responsive to, normative expectations. Actually, during youth and adolescence, the concept of normativity matures in predictable steps. The law can capitalise on this normative proficiency. Moreover, the contents of legal rules do not normally reach their addressees directly. Typically, the abstract rules of legal doctrine are mirrored in much more contextualized, socially transmitted normative expectations.

A related strand of work does not look at the law in isolation, but at governance tools more generally, of course including governance by law. In these pieces, I am interested in understanding interventions aiming at the provision of collective goods from a behavioral perspective. This approach is epitomized by the book *Generating Predictability*. In the existing work on collective goods, incentive interpretations are center stage. The book takes issue with this starting point. Talking about incentives does only make sense if the situation is sufficiently defined. This is often a fairly strong assumption. If I have no idea what my counterparts are likely to do, I do not have much opportunity to be egoistic. Our interaction can only become meaningful once most of the theoretically available options are credibly ruled out. This concern is forced upon the scientific observer once she opens up the black box of human behavioral dispositions. It is a universe of possibilities. Game-theoretic analysis corroborates the point. Even if one radically narrows down the problem to just two types of counterparts, the interaction partners themselves have a hard time solving it. It becomes intellectually intractable and practically unsolvable once one admits a more realistic degree of complexity. Now pervasive uncertainty about the behavior of others does not characterize our day-to-day experience. The book claims this is due to pervasive institutional intervention. The main task of institutions is thus not to correct socially detrimental incentives. It is to generate predictability in the first place. While law is an important component in many of these interventions, such interventions are hardly ever exclusively legal in nature. Rather, predictability is generated by sets of fairly rich institutional arrangements.

There is more work at the intersection between behavior and collective goods. Here a characteristic piece is "Social Dilemmas, Revisited from a Heuristics Perspective". If we narrow down our field of observation to focus on combating socially detrimental behavior, we should understand how it originates. Again, I am telling a no incentives story. Most people do not reason most of the time. Rather they follow their routines. A case in point is the use of a car, rather than public transport. In order to compare my story to the classic social dilemma narrative, I am developing a (non-formal) model of routines. This model helps single out access points for institutional intervention that are different from the ones suggested by the incentive story. Policy-makers can aim at teaching people better routines. Or they can try to exploit the fact that the field of application of existing routines is determined by schema, not by mandatory features. This explains why reframing the issue matters.

An illustration of my work at the behavior/law interface is "The Impact of Representation Norms on the Quality of Judicial Decisions". Normally, judges are required to give reasons for their decisions. Nobody expects these reasons to be a veridical account of mental process. But they are not mere window dressing either. Judicial decision-making is an exercise in deliberate, reasoned judgment and choice. During this process, judges anticipate that they will later have to give reasons in accord with fairly rich representation norms. The main effect is through increased accountability. In principle, the effect should therefore be ambivalent. In general, increasing accountability makes people work harder, but not smarter. The paper tries to show that the downside of accountability is not pronounced in the special case of professionalized judicial decision-making.

Last but not least, there is quite some work at the law/collective goods interface, which is not behavioral in nature. It often specifically relies on rational choice argument. By the foregoing I therefore do not mean to suggest that incentive stories are wrong all over the place. On the contrary, they quite often provide a most valuable starting point. Depending on the issue under consideration, there may be no need to go beyond them. An illustration of this is the paper on "Corporate Design for Regulability". In this paper, I develop a formal model for a frequent observation: firms voluntarily hire a representative for some common cause of greater society, and give her serious influence over the formation of the corporate will. I interpret this to be a rational reaction of the firm, as the agent, to the relationship with a regulator, as the principal. Since the regulator might rely on sovereign powers to harm the firm more seriously, it is in the firm's interest to fix the information asymmetry.

Publication processes take time. In the list of publications during the period of 2002-2005, a bunch of papers show up that originated from collaboration with the political scientists who have left the Institute in the meantime. Quite a bit of this is on the erosion of the boundaries between the state and supranational governance bodies, and between the state and private governance. Other publications are rooted in my long-standing engagement in media and communications regulation. While in the past they were typically tied back to the institute's agenda via the law/political science interface, they have found a new home in the project on network industries. Finally, there are a

number of papers aiming at translating interdisciplinary findings back into the (German) legal community.

Research Agenda

For the upcoming years, the triangle of behavior, law, and collective goods will remain the organising framework of my work. Much of this work will, naturally, consist of my contributions to the several projects of the Institute. I am also finding it increasingly attractive to do joint work with external researchers who bring complementary skills and bodies of knowledge. And I am interested in developing behavioral models that help address the impact of (specific) behavioral dispositions on the provision of collective goods, on institutions, or both.

For the project on conceptualising corporate actors, I want to contribute an exploratory piece. The deeper one digs, the more obvious the differences between individual and corporate actors. In corporate actors, there is no such thing as neuroanatomy, neurochemistry, or neuroelectricity. At the behavioral level, however, we colloquially have no problems treating firms, bureaucratic organizations, or even states as actors. Most interestingly, at the symbolic level of behavioral dispositions, we quite easily speak of things like “the formation of the corporate will”, “organizational memory”, or the corporation's “field of observation”. Is this just sloppy, metaphorical language? Or could it be that fundamentally different subsymbolic machinery generates fairly similar phenomena at the symbolic level?

My main interest in the “New Law and Psychology” project is programmatic. I see value, for the law, in taking experimental economics on board. But I think it is a mistake to introduce behavior into legal thinking about governance through the backdoor. Depending on how the project develops, I personally might either contribute a programmatic introduction or a paper that picks a concept from psychology to which behavioral economics gives short shrift. Good candidates would be memory and schemas.

The planned research alliance with the Berlin Max Planck Institute is still in its early stages. I am planning contributions to both conferences. The idea that intelligence might be located in institutions, rather than in people's minds, is a natural extension of the predictability book. The idea that institutions choose between the competing risks of false positives versus false negatives is closely related to my earlier work on legal decisions under uncertainty.

For the Dahlem conference “Better Than Conscious”, I am planning a contribution that fleshes out the implications for the analysis of collective goods problems. In a way, this Dahlem conference is a counterpoint to the previous Dahlem conference on "Heuristics and the Law". At that conference, the leitmotiv was: In an environment of high complexity and pronounced uncertainty, given the limitations of the human cognitive apparatus, individuals cannot be expected to rely on all the available information for decision-

making. Now, apparently the mental machinery for the parallel, subconscious processing of information is much less restrained. After all, even monkeys have been demonstrated to be near-perfect Bayesian updaters! Have we thus analytically come full circle? Should human actors best be modeled as optimising machines, only at the subconscious level? Or is it more likely that we have to understand the links between subconscious, parallel, and conscious serial processing before we are able to define the behavioral foundations of collective goods problems?

Let me conclude by mentioning the topics of three joint papers I am working on. Psychologist, Elke Weber, of Columbia University, and myself are trying to model the impact of institutions on the choice of decision modes, ranging from emotional shortcuts, through relying on routines, to switching to deliberate choice. Philosopher of science, William Casebeer, of the Naval Postgraduate School, Monterey, and myself are exploring "Governance by Taboo". In traditional societies, this is a frequent intervention to preserve a collective good from overuse and destruction. We want to show why this governance tool is rightly rare in modern societies. In a joint project with economists, Werner Güth, of the Max Planck Institute Jena, and Andreas Nicklisch, from our institute, we are trying to get a handle on "Corporate Enculturation". This is meant as a contribution to the institute's work on the behavior of corporate actors.

Honours

In 2002, I was elected a Member of the Academia Europaea.

Publications (since 2002)

I Books

Global Networks and Local Values. A Comparative Look at Germany and the United States, National Academy Press, Washington 2002, (with the other members of the Steering Committee). Published in German: “Globale Netze und lokale Werte. Eine vergleichende Studie zu Deutschland und den Vereinigten Staaten“. Nomos, Baden-Baden 2002.

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Jürgen G. Backhaus (Ed.): The Elgar Companion to Law and Economics. Elgar, Cheltenham 1999. RabelsZ 67, 411-416 (2003).

Johanna Hey: Steuerplanungssicherheit als Rechtsproblem. O. Schmidt, Köln 2002. Die Verwaltung 36, 409-412 (2003).

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V Preprints (insofar as not yet published elsewhere)

The Role of Law in the Governance of the Internet. Preprints of the Max Planck Projektgruppe Recht der Gemeinschaftsgüter Bonn 2002/13.

Freiheit und Autonomie. Preprints of the Max Planck Institute for Research on Collective Goods Bonn 2003/09.

Social Dilemmas, Revisited From a Heuristics Perspective. Preprints of the Max Planck Institute for Research on Collective Goods Bonn 2004/04.

Learning the Law. Preprints of the Max Planck Institute for Research on Collective Goods Bonn 2004/05.

The Impact of Representation Norms on the Quality of Judicial Decisions. Preprints of the Max Planck Institute for Research on Collective Goods Bonn 2004/13.

Inconsistency in the Law: In Search of a Balanced Norm. Preprints of the Max Planck Institute for Research on Collective Goods Bonn 2004/16.

Öffentlichkeitsarbeit der Regierung. Preprints of the Max Planck Institute for Research on Collective Goods Bonn 2005/2.

Corporate Design for Regulability. Preprints of the Max Planck Institute for Research on Collective Goods Bonn 2005/15.

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The Difficult Reception of Formal Social Science in the Law. Preprints of the Max Planck Institute for Research on Collective Goods Bonn (forthcoming 2005).

VI Policy Reports

Academic Advisory Council to the German Minister of Economics and Labour.

Contributions to the following advisory opinions:

1. Daseinsvorsorge im europäischen Binnenmarkt
   [Subsistence Provision in the Single European Market]
   Evaluation from 12 January 2002

2. Reform des Sozialstaats für mehr Beschäftigung im Bereich gering qualifizierter Arbeit
   [Reforming the Welfare State to Create more Jobs in the Low-Skilled Labor Market]
   Evaluation from 28-29 June 2002

3. Personal-Service-Agenturen
   [Personnel Service Agencies]
   Letter to the Federal Minister of Economic Affairs and Employment, Wolfgang Clement, 25 October 2002

4. Die Hartz-Reformen – ein Beitrag zur Lösung des Beschäftigungsproblems?
   [The Hartz Reforms – A Contribution to the Solution of the Unemployment Problem?]
   Evaluation from 15-16 November 2002

5. Tarifautonomie auf dem Prüfstand
   [Tariff Autonomy on Trial]
   Evaluation from 10 October 2003

6. Europäische Verfassung
   [The European Constitution]
   Letter to the Federal Minister of Economic Affairs and Employment, Wolfgang Clement, 6 December 2003

7. Ausbildungsplatzabgabe
   [A Levy for Financing Apprenticeship Positions?]
   Letter to the Federal Minister of Economic Affairs and Employment, Wolfgang Clement, 17 January 2004

8. Förderung erneuerbarer Energien
   [The Advancement of Renewable Energies]
   Evaluation from 16 January 2004

9. Keine Aufweichung der Pressefusionskontrolle
   [No Deviation in Press Merger Monitoring]
   Evaluation from 24 April 2004

10. Alterung und Familienpolitik
    [Aging and Family Policy]
    Evaluation from18 March 2005

Thomas Gaube

Summary report

In general terms, my research interests fall into the category of "public economics". The following issues have received particular attention in my work during the past few years:

1. Distortionary taxation and public expenditures: A classical topic in public economics deals with the way in which the indirect welfare costs of taxation affect the evaluation of public-expenditure programs, in particular, the governmental provision of public goods. This strand of the literature has produced a variety of hypotheses whose validity has not been fully clarified by robust formal analysis. Part of my research has dealt with this issue, in particular the link between the marginal cost of public funds and the optimal level of public expenditures. The following questions have been analyzed in detail: (a) How does the excess burden of taxation act on the optimal level of public expenditures? (b) Is there a general relationship between the excess burden and expenditures, or does this link depend on the particular type of tax system in question (e.g., income taxation vs. consumption taxation)? (c) Is it true that the excess burden crowds out any type of public activity, like, for example, environmental protection?

2. Taxation and production efficiency: Contrary to the governmental provision of a public consumption good, public investment affects consumption only indirectly by influencing the economy's aggregate production set. The corresponding expenditures thus have to be evaluated according to whether a point on the production frontier is implemented. From this perspective, public investment is a matter of production efficiency, a subject which has recently generated considerable interest in the literature on optimum income taxation. Some of my work deals with this issue by analyzing the following questions: (a) Under which conditions is production efficiency desirable if public expenditures are financed by means of income taxation? (b) What are the consequences of these findings for the evaluation of government expenditures if these take the form of some public input that affects the production set of the private sector?

3. Group size and the private provision of public goods: According to a prominent hypothesis regarding the voluntary donations to a public good, the free-rider problem in private public goods provision becomes worse as group size is increased. The validity of this widespread and intuitive claim, however, has not yet been fully explored in the literature. My research has dealt with the following questions: (a) Is it true that an increase in group size leads to a less efficient equilibrium relative to a first-best outcome? (b) How does an increase in group size affect more sophisticated mechanisms for promoting voluntary donations to a public good like lotteries?

4. Welfare effects of a switch from wage taxation and comprehensive income taxation to consumption taxation: The claim that consumption taxation dominates income taxation from an efficiency point of view has led to several proposals for a fundamental tax reform. A deeper analysis of this claim reveals that the positive efficiency effects of a consumption tax are dependent on the fact that it effectively imposes a lump-sum tax on past savings. Such a tax, however, harms different agents differently and can be enacted only if the individuals do not anticipate the reform beforehand. This observation has raised the question whether the proposed efficiency gains of a consumption tax survive if (a) the Pareto criterion is applied in an economy with heterogenous agents or if (b) the simplest form of a non-distortionary tax, namely a poll tax, is introduced in the analysis as well. The corresponding research has been conducted with Robert Schwager.

Research Agenda

My recent work has concentrated on the following two topics. In both cases, I will first explain the main results that have been attained so far and then proceed by describing open questions for further research.

1. Altruism and charitable giving in a fully replicated economy: In this paper, an economy is analyzed where one group of agents, the altruists, cares about the well-being of another group of agents, the recipients. It is asked how changes in the size of these groups affect the altruists' charitable giving in the Nash equilibrium. This question is motivated by a closely related topic, namely the effect of an increase in group size on private donations to a public good. In the public good context, it has been shown that group size and free-riding are positively correlated. However, empirical evidence for these results is rather weak. I show that a true altruistic motive of charitable giving may lead to a positive relationship between group size and free-riding, provided that the structure of the economy, namely the ratio between altruists and potential recipients, is kept constant.

The paper points out that the form of altruistic preferences is crucial for answering the question whether an increase in group size alleviates or exacerbates the free-rider problem in charitable giving. However, the analysis does not clarify which type of preference is most relevant from an empirical point of view. To my knowledge, neither empirical nor experimental results are available that refer to the effect of group size on purely altruistic donations, i.e., voluntary contributions where, as in the dictator game, the donors' private interest in consuming the aggregate donation is ruled out by assumption. Therefore, further research may shed light on the question whether real-world preferences are such that private charitable giving becomes more (or less) efficient as group size is increased.

2. Optimum taxation of each year's income: This paper is motivated by the observation that income taxation, as observed in practice, seems to be based on the implicit restriction that current income fully determines the individuals' tax burden in each period. Hence, the information concerning an agent's income in the past is neglected. The paper does not aim to explain why real-world income taxation acts in that way, but to explore whether the insights which have been gained from the standard one-period model of optimum income taxation still hold in such a setting. For that purpose, I consider a two-period model with full commitment. It is shown that a prominent result of the one-period income tax model, namely that the marginal tax rate should be nil at the upper end of the income distribution, no longer holds if the empirically relevant restriction of neglecting the information concerning the individuals' past income is taken seriously in the analysis.

Since little attention has been given to the analysis of non-linear intertemporal income taxation, a variety of topics deserve further investigation. The following two issues seem to be of particular interest:

(a) The commitment assumption of the paper can be justified by the fact that the income tax schedule is usually not redesigned each fiscal year. In the long run, however, full commitment is not realistic. Therefore, the complementary case, where the tax function of the second period is eventually determined at the beginning of that period, is of interest as well. In this case, the practice of taxing current income in each period can be interpreted as a partial commitment device, which may lead to higher welfare than the alternative regime, where all information concerning an individual's income in the past is employed.

(b) Many authors have dealt with the question whether direct taxation should be complemented by indirect taxation, i.e., commodity taxes and/or a savings tax. So far, this issue has been discussed either within the one-period income tax model or within the framework of an overlapping generations economy. In both cases, it has been assumed that each agent works in just one fiscal period. It seems that the findings of this literature have to be modified if the more realistic assumption is made that each individual earns labor income at least in two fiscal periods. Therefore, it is of interest to work out the link between direct and indirect taxation in such a framework.

Publications (since 2002)

Books

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Publications in refereed journals

with R. Schwager: Consumption vs. Wage Taxation and the Capital Levy. Economics Letters 79, 15-19 (2003).

with R. Schwager: Does Old Capital Matter for Implementing a Pareto-Improving Tax Reform? Public Finance Review 32, 220-231 (2004).

Second-Best Pollution Taxation and Environmental Quality. Frontiers of Economic Analysis & Policy 1 (1), 1-16 (2005).

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Income Taxation, Endogenous Factor Prices, and Production Efficiency. Scandinavian Journal of Economics 107, 335-352 (2005).

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Discussion Papers

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Optimum Taxation of Each Year's Income, mimeo, Max Planck Institute for Research on Collective Goods, 2004.

A Note on the Link Between Public Expenditures and Distortionary Taxation, mimeo, Max Planck Institute for Research on Collective Goods, 2005.

Hendrik Hakenes

Summary Report

I am mainly interested in financial economics, especially in risk management and the economics of banking. Furthermore, reputation is a research issue. Most of my work is theoretical, but I am also planning to do empirical projects in the near future.

Risk Management in Banks

"Banks as Delegated Risk Managers" (forthcoming in Journal of Banking and Finance)
Risk management, although of major importance in the banking industry in practice, plays only a minor role in the theory of banking. I reduce this gap by putting forward a model in which risk managers – specialists who can find out correlations between risky assets – endogenously take over typical functions of banks. They grant loans; they consult on financial questions with firms that are threatened by bankruptcy; and they sign tailor-made hedge transactions with these firms. Delegation costs are innately low if banks assume the function of risk managers in an economy. Risk management can be seen as a core competence of banks.

"Risk Management, Financial Contagion and Banking Regulation"
As shown in the above paper, to create incentive compatibility, banks must assume some of the entrepreneurial risks, e. g. by underwriting OTC hedging contracts or granting loans. The arising bankruptcy risk causes potential contagion. A conflict of interest emerges because banks prefer a diversified customer portfolio, whereas customers attach more importance to getting adequate contracts from the bank. I show that this conflict cannot be overcome by contractual arrangements between customers and banks. Therefore, banking regulation is desirable to reduce welfare losses. I identify three fundamental instruments for regulation.

"From Poverty Measurement to the Measurement of Downside Risk" (with Carsten Breitmeyer and Andreas Pfingsten, in Mathematical Social Sciences)
Risk measurement plays a crucial role in bank controlling. It is well-known that a close relation between the measurement of inequality and the measurement of risk exists. We demonstrate a similar relation between measures of poverty and downside risk, respectively. Based on properties of poverty measures, a number of axioms for reasonable downside risk measures are suggested and applied to the class of decomposable indices, which includes the lower partial moments as special cases. More generally, the paper enables those interested in measuring the downside risk of distributions to build upon the wealth of literature on poverty measurement when looking for suitable indices.

Risk-Taking

"Competitive Effects of Government Bail-out Policies"
The paper "Banks without Parachutes – Competitive Effects of Government Bail-out Guarantees" (with Isabel Schnabel, Max Planck Institute for Research on Collective Goods, Bonn), deals with the explicit or implicit protection of banks through government guarantees. These guarantees come in two forms: Public banks directly enjoy the backing by the government, while very large banks are often subject to implicit guarantees because they are "too big to fail". Both the political and academic discussions focus on the detrimental effects of such guarantees on the risk-taking behavior of the protected banks. In contrast, the reactions of the remaining banks in the banking system are not dealt with in the literature. We close this gap by analyzing the competitive effects of government bail-out policies on those banks that do not enjoy a public guarantee in two models with different degrees of transparency in the banking sector. Our main result is that the bail-out policy unambiguously leads to higher risk-taking at those banks that do not enjoy a bail-out guarantee. The reason is that the prospect of a bail-out induces the protected bank to expand, thereby intensifying competition in the deposit market and depressing other banks' margins. In contrast, the effects on the protected bank's risk-taking and on welfare depend on the transparency of the banking sector.

The question how the performance of the remaining banking sector is affected by government guarantees to certain banks is also interesting from an empirical perspective. Therefore, in an ongoing project ("Competition, Risk-Shifting, and Bail-out Policies", with Reint Gropp, European Central Bank, and Isabel Schnabel, Max Planck Institute for Research on Collective Goods, Bonn), we complement our theoretical work with an empirical analysis to test for the effects described in the theoretical paper. While there exists an extensive empirical literature examining the effect of bail-out policies on the risk-taking of protected banks, the effect of bail-out policies on banks outside the safety net has not – to our knowledge – been systematically examined. To fill this gap, this paper empirically investigates the relationship between banks' risk-taking behavior and the market share of protected banks in the banking system. It is important to note that such competitive distortions would not only be expected in the presence of explicit guarantees, but in much the same way in the presence of implicit guarantees. Such implicit guarantees are inherently difficult to measure. However, some of the big rating agencies explicitly distinguish between a bank's financial strength rating and an overall rating, which additionally considers the possibility of public support. These ratings are going to be used in our empirical analysis to judge the extent of implicit and explicit guarantees.

"Bank size and risk-taking under Basel II"
In the paper "Bank size and risk-taking under Basel II" (with Isabel Schnabel, Max Planck Institute for Research on Collective Goods, Bonn) we analyze the relationship between bank size and risk-taking under the New Basel Capital Accord. Using a model with imperfect competition and moral hazard, we show that the introduction of an inter-

nal ratings based (IRB) approach improves upon flat capital requirements if the approach is applied uniformly across banks and if the costs of implementation are not too high. However, the banks' right to choose between the standardized and the IRB approaches under Basel II gives larger banks a competitive advantage and pushes smaller banks towards higher risk-taking due to fiercer competition. This may even lead to higher aggregate risk-taking.

"The role of public banks"
The paper "The Threat of Capital Drain: A Rationale for Public Banks?" (with Isabel Schnabel, Max Planck Institute for Research on Collective Goods, Bonn) yields a rationale explaining why public banks may be desirable from a regional perspective. We present a model with credit rationing and heterogeneous regions in which public banks may prevent a capital drain from poorer to richer regions by subsidizing local depositors, for example, through a public guarantee. We show, however, that cooperative banks may serve the same function as public banks in our basic setup. We then describe the conditions under which either public or cooperative banks are superior. Whether public banks emerge in a political-economy setting depends on the structure of the political system, on the heterogeneity of the population, and on interregional mobility.

"Creditor Conflicts, Coalitions, and Inverse Risk-Shifting" (with Jochen Bigus)
With limited liability, debt financing may induce the entrepreneur to choose overly risky projects. We show that a long-lived creditor (the bank) can use tacit agreements to overcome this problem. However, tacit agreements may become disadvantageous if multiple creditors provide finance. If the bank holds a senior claim, a tacit coalition between the entrepreneur and the bank may have an incentive to choose overly safe projects. We derive conditions for this kind of inverse risk shifting and discuss the role of collateral. Among other things, our model sheds new light on the debate about relationship banking and bank power.

Reputation

"Selling Reputation When Going out of Business" (with Martin Peitz)
Is the reputation of a firm tradeable when the previous owner has to retire even though ownership change is observable? We consider a competitive market in which a share of owners must retire in each period. New owners, observing only recent profits, bid for the firms that are for sale. Customers are concerned with the owners' type, which reflects the quality of the good or service provided. When a customer observes an ownership change, he may have an incentive to switch to a different firm, even if his past experience was good. However, we show that, in equilibrium, customers believe that the new owner is also good. Hence reputation is tradeable, although ownership change is observable. In our model, reputation is an intangible asset, embodied in an attractive customer base. Firms with 'good' owners sell at a premium.

"Understanding Car Banks – Vendor Finance for Experience Goods"
What is the advantage of vendor finance in comparison to bank finance? I argue that in the case of experience goods, a link between the product market and the loan market exists: The vendor may use vendor finance to signal product quality. The mechanism is based on mutual learning about the credit-worthiness of the buyer and the quality of the product, respectively. As a special case, the model may help to understand the success of subsidiary banks that provide vendor finance, especially car banks. I show that cars of producers that offer finance are of a higher quality. Interest rates for car loans are comparatively low.

Publications

Published work (refereed)

Banks as Delegated Risk Managers. Journal of Banking and Finance 28 (10), 2399-2426 (2004).

with A. Irmen: The Long-Run Evolution of Technological Knowledge. Economic Theory (forthcoming).

with C. Breitmeyer and A. Pfingsten: From Poverty Measurement to the Measurement of Downside Risk. Mathematical Social Sciences 47 (3), 327-348 (2004).

with I. Schnabel: Braucht Deutschland eine 'private starke deutsche Bank'? Über die Notwendigkeit nationaler Champions im Bankwesen. Kredit und Kapital (forthcoming).

with S. Wilkens: Der Value-at-Risk auf Basis der Extremwerttheorie. Finanz-Betrieb December 2003, 821-829.

Published work (unrefereed)

Die Vorteilhaftigkeit von Autobanken. Tochterbanken als Signal für Produktqualität. Finanzierung Leasing Factoring March 2004

Books

Banken als delegierte Risikomanager. Dissertation. Knapp, Frankfurt a.M. 2002.

Working Papers

with J. Bigus: Creditor Conflicts. Coalitions, and Inverse Risk Shifting.

with F. Feecht: Mony Market Derivatives and the Allocation of Liquidity Risk in the Banking Sector.

with A. Irmen: Neoclassical Growth and the 'Trivial' Steady State. CEPR Discussion Paper DP4943.

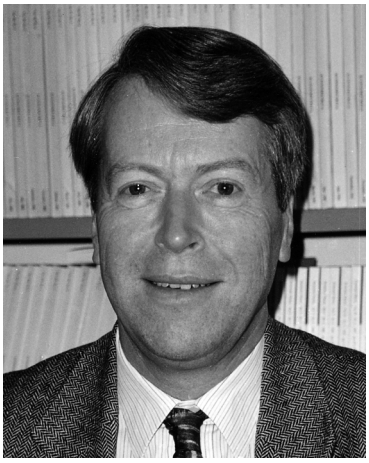
with A. Irmen: Airy Growth – Was the Take-Off Inevitable? (Version May 2004).

with M. Peitz: Selling Reputation When Going out of Business. CESifo Working Paper 1213.

with M. Peitz: Umbrella Branding and the Provision of Quality. CESifo Working Paper 1373.

with I. Schnabel: Banks without Parachutes? Competitive Effects of Government Bail-out Policies. Preprints of the Max Planck Institute for Research on Collective Goods Bonn 2004/12.

with I. Schnabel: Bank Size and Risk-Taking under Basel II. Preprints of the Max Planck Institute for Research on Collective Goods Bonn 2005/06.



Martin Hellwig

Summary Report

Although I only came to the institute in April 2004, this report covers all of 2003 and 2004 because much of the work I did in this period is relevant for research at the institute. Three sets of contributions can be distinguished. One set of contributions involves purely theoretical papers; a second set involves policy-related papers, largely in the context of my activities at the German Monopolies Commission; a third set of papers involves "issue assessment papers", somewhere in between theory and policy assessments.

New theoretical research over the past few years has focused on issues of normative public economics. The main contributions to date are summarized in Sections C.I.4 and C.I.5, so I will not go into them again here. The motivation for this research came from correspondence over the paper "Public Good Provision with Many Participants" in the 2003 *Review of Economic Studies*. This correspondence gave rise to the questions of the role of participation constraints in public goods provision and the implications of inequality aversion. The papers summarized in Sections C.I.4 and C.I.5 try to answer these questions and, in the process, provide a conceptual framework for integrating the three subdisciplines of normative public economics.

Thinking about the role of income taxation in public goods provision also induced me to take a new look at the existing literature on optimal income taxation. Because I couldn't understand the economics of the available proofs, I developed a new one, which is presented in the forthcoming preprint, "A contribution to the theory of optimal utilitarian income taxation". This is also discussed in Section C.I.5, as is the specialization to the case of the nonincreasing aversion to (multidimensional) risk, which provides for more structured results, including a refutation of the notion that randomization in income taxation is desirable.

As I was studying the optimal income tax problem, I came to appreciate that available analyses of this problem (or of any other incentive problem) with a continuum of types do not provide a fully general treatment of the monotonicity constraints which typically emerge from the second-order conditions for incentive compatibility. Extending an argument that I had used for an earlier paper (Economic Theory 2001), I developed a version of Pontryagin's maximum principle that allows for monotonicity constraints on controls and can be applied to such incentive problems. A final offshoot of this work is an extension to the case of mixed type distributions, allowing for mass points as well as a continuum of types. The extension shows that, in contrast to received wisdom, which has positive marginal taxes between the top and the bottom of the distribution, the

model generates optimal marginal tax rates that are zero at all income levels, corresponding to mass points that are not bunched.

The Monopolies Commission occupied much of my time until the middle of 2004, when I stepped down as chairman. In 2003 and during the first half of 2004, the Commission wrote an unusually large number of reports, mainly because the government was so active in competition policy, introducing an unusual number of bills for legislation. As discussed in Section C.III.1, some of this material may be considered research in its own right, and it certainly is relevant for the institute's work. While most of the texts are prepared by the Commission staff, some require the intervention of those Commission members who have the requisite comparative advantage. The main instances are:

- the proper treatment of risk premia and capital income taxes (at the corporate and at the individual level) in assessing capital costs as part of the long-run incremental costs that form the basis of access price regulation in telecommunications (Special Report 39 on the development of competition and regulation in the telecommunications sector);
- an assessment of termination fees in mobile telecommunications from the perspective of the Ramsey-Boiteux theory of second-best pricing (Special Report 39 on the development of competition and regulation in the telecommunications sector);
- market definition, market analysis, and the relation between competition policy and sector-specific regulation under the European telecommunications regulations of 2002 (Special Report 40 on the reform of the telecommunications law);
- a critique of industrial policy in favour of national "champions" (Biennial Report XV, 2002/2003 July 2004);
- a critique of the proposed new law on sector-specific regulation in the electricity and gas industries (Statement to Bundestag hearing November 2004).
- Some of this material has also found its way into separate publications such as "Netzwettbewerb durch Regulierung" (Regulation and Competition in Network Industries) in 2004 or "Competition Policy and Sector-Specific Regulation for Network Industries", which was prepared for the EARIE conference in August 2004 and is due to be published by the ifo Institute.

Research Agenda

In the immediate future, I expect to be busy revising, finishing, and polishing the material on normative public economics that I currently have. In addition, I hope to make further progress on the project that is outlined in Section C.I.6.1, i.e., the development of a new framework for studying the allocation problem of how much of a public good to provide in a large economy with correlated values.

Following that, I hope to tackle one or several of the larger questions posed in Sections C.I.6.2 and C.III: namely (i) What is a good framework for incorporating both the concerns of the Ramsey-Boiteux theory and the negative incentive effects of cross-subsidization schemes? (ii) Can we develop a model for studying the interdependence of markets and vertically structured institutions as providers of "security"? and (iii) What can we say about the implications of this interdependence for the governance of institutions, considering, in particular, the role of "voice"? Each of these questions is difficult and deep, so it will require thinking and some luck to really make headway on them.

Honours

2003	Foreign Honorary Member, American Academy of Arts and Sciences
2005	Doctor rerum politicarum honoris causa, Humboldt-University Berlin

Publications (since 2003)

Books

with A. Sapir, P. Aghion, G. Bertola, J. Pisani-Ferry, D. Rosati, J. Vinals und H. Wallace (Eds.): An Agenda for a Growing Europe: The Sapir Report, Oxford University Press, Oxford 2004.

Articles in Journals and Edited Volumes

Discussion of 'Banks and Markets: The Changing Character of European Finance' by R. Rajan and L. Zingales. In: Second ECB Central Banking Conference: The transformation of the European Financial System. (Eds.) V. Gaspar, P. Hartmann and O. Sleijpen. European Central Bank, Frankfurt 2003, 173-180.

Public-Good Provision with Many Participants. Review of Economic Studies 70, 589-614 (2003).

The Relation between Real Wage Rates and Employment. An Intertemporal General Equilibrium Approach. German Economic Review 5, 263-295 (2004).

Netzwettbewerb durch Regulierung. In: Strommarktliberalisierung durch Netzregulierung, Vol. 4. (Eds.) U. Leprich, H. Georgi and E. Evers. Berliner Wissenschaftsverlag, Berlin 2004, 29-43.

Nonlinear Incentive Provision in Walrasian Markets. A Cournot Convergence Approach. Journal of Economic Theory 120, 1-38 (2005).

Elitemodell Wartburg? In: Stifterverband für die Deutsche Wissenschaft, Eine (un)endliche Geschichte? Beiträge zur Föderalismusdiskussion, Villa-Hügel-Gespräch 2004. Stifterverband, Essen 2005, 16-23.

A Utilitarian Approach to the Provision and Pricing of Excludable Public Goods, Journal of Public Economics 89 (2005), 1981–2003.

Market Discipline, Information Processing and Corporate Governance. Preprints of the Max Planck Institute for Research on Collective Goods Bonn 2005/19. (forthcoming in: K.J. Hopt, E. Wymeersch, H. Kanada and H. Baum (Eds.): Corporations, States, Markets and Intermediaries: Changes of Governance in Europe, Japan, and the USA. Oxford University Press, Oxford).

Working Papers and Preprints

The Provision and Pricing of Excludable Public Goods: Ramsey-Boiteux Pricing versus Bundling. Discussion Paper 04-02, Sonderforschungsbereich 504, University of Mannheim, 2004.

Risk Aversion in the Small and in the Large When Outcomes Are Multidimensional. Preprints of the Max Planck Institute for Research on Collective Goods Bonn 2004/6.

Optimal Income Taxation, Public-Goods Provision and Public-Sector Pricing: A Contribution to the Foundations of Public Economics. Preprints of the Max Planck Institute for Research on Collective Goods Bonn 2004/14.

A Contribution to the Theory of Optimal Utilitarian Income Taxation. Preprints of the Max Planck Institute for Research on Collective Goods Bonn 2005/23.

The Undesirability of Randomized Income Taxation under Weakly Decreasing Risk Aversion. Preprints of the Max Planck Institute for Research on Collective Goods Bonn 2005/27.

Policy Reports

Reports of the Monopolies Commission since 2003:

Zusammenschlussvorhaben der Georg von Holtzbrinck GmbH & Co. KG mit der Berliner Verlag GmbH & Co. KG, Sondergutachten 36, 2003 (Special Report on the Proposed Merger of Georg von Holtzbrinck GmbH & Co. KG and Berliner Verlag GmbH & Co. KG)

Wettbewerbsfragen der Kreislauf- und Abfallwirtschaft, Sondergutachten 37, 2003 (Special Report on Issues of Competition Policy in Markets for the Disposal and Treatment of Waste)

Zusammenschlussvorhaben der Georg von Holtzbrinck GmbH & Co. KG mit der Berliner Verlag GmbH & Co. KG, Ergänzendes Sondergutachten 38, 2003 (Supplementary Special Report on the Proposed Merger of Georg von Holtzbrinck GmbH & Co. KG and Berliner Verlag GmbH & Co. KG)

Telekommunikation und Post 2003: Wettbewerbsintensivierung in der Telekommunikation – Zementierung des Postmonopols, Sondergutachten 39, 2003 (Special Report on Competition in Telecommunications and the Postal Sector)

Zur Reform des Telekommunikationsgesetzes, Sondergutachten 40, 2004 (Special Report on the Reform of the Telecommunications Law)

Das Allgemeine Wettbewerbsrecht in der Siebten GWB – Novelle, Sondergutachten 41 (On Proposed Changes of General Antitrust Law in the Seventh Law to Amend the Law against Restraint of Competition)

Die Pressefusionskontrolle in der Siebten GWB-Novelle, Sondergutachten 42 (On Proposed Changes of Merger Control Regulations for Newspaper Publishers in the Seventh Law to Amend the Law against Restraint of Competition)

Wettbewerbspolitik im Schatten Nationaler Champions", XV. Hauptgutachten 2002/ 2003 (Competition Policy under the Shadow of National Champions", 15th Biennial Report), 2004

All reports are published with Nomos Verlag Baden-Baden. Special Reports (in German) and short versions of the Biennial Report (in German and English) are also available at http://www.monopolkommission.de

Written Statements for Hearings of the Bundestag Committee on Economic Affairs:

Hearing on the Reform of the Law against Restraint of Competition, September 20, 2004
(http://www.bundestag.de/gremien15/a09/eAnhoerungen/jGWB/bmaterialien.pdf)

Hearing on the Reform of the Law on the Regulation of the Energy Sector, November 29, 2004 (http://www.bundestag.de/gremien15/a09/eAnhoerungen/EnWR/d1539.pdf)

Other Policy Reports

Keine Aufweichung der Pressefusionskontrolle (No Relaxing of Merger Control for Newspaper Publishers), Report of the Scientific Advisory Committee, Federal Ministry of Economic Affairs, May 2004.

Report An Agenda for a Growing Europe" July 2003 of the High Level Study Group on Growth, Stability and Cohesion" for the President of the European Commission, 2002 – 2003. This report was published in 2004 by Oxford University Press under the title An Agenda for a Growing Europe: The Sapir Report

Report An Economic Approach to Article 82" July 2004 (http://europa.eu.int/comm/competition/publications/publications/#UDIES) of the European Advisory Group on Competition Policy (with P. Rey (chair), J. Gual, A. Perrot, M. Polo, K. M. Schmidt, R. Stenbacka)

Felix Höffler

Summary Report

My work is focused on research on network industries. A clear definition of "network industries" is missing in the literature. For the purpose of my research, defining elements of a network industry are:

Sunk Cost: Large importance of sunk and common cost and therefore natural monopoly problems;

Privatization and Regulation: Network industries typically have a history of state ownership or strong state intervention, which gives rise to (de)regulation issues;

Network Access: A key issue of the regulation of network industries is the regulation of access to bottlenecks (essential facilities) in the value chain;

System Service: Finally, technologically, product differentiation is often impossible since services (like network stability) can only be supplied collectively and not for an individual customer.

Typical examples for network industries in this sense are telecommunications, energy (electricity and gas markets), and railways. My interest is tackling issues in these sorts of industries with theoretical as well as empirical methods of industrial organization. This requires a thorough understanding of real world institutions: technology, existing industry structure, and legal framework. A considerable part of the research is devoted to the economic analysis of the impact of regulatory law and regulatory practice on industry performance.

Past Research

The past and current research focuses on the first and the third characteristics of network industries. I have tackled the issue of sunk cost in two rather theoretical papers. One paper addresses a classical issue in the research on natural monopolies, namely the comparison of monopoly prices and prices a benevolent social planner would set in the presence of economies of scale (or more generally: subadditive cost functions).

Monopoly Prices versus Ramsey-Boiteux Prices: Are they "similar", and Does it matter?

Ramsey-Boiteux prices and monopoly prices are frequently regarded as being similar. This might suggest that sometimes monopoly pricing is close to the Ramsey-Boiteux second best and welfare superior to imperfectly regulated prices. This paper tries to

specify what is meant by "being similar". Both sets of prices are similar in a theoretical sense but different with respect to price levels and can even lead to reversed order of prices. The paper discusses the impact of competition and stresses the difference between market and residual-demand issues of importance for the Ramsey-Boiteux and the monopoly problem, respectively. We conclude that for most regulatory issues the theoretical similarity does not matter.

A second paper tackles the question of sunk cost from a different angle. Since sunk costs play a dominant role in network industries, the question arises how people actually behave towards problems in which sunk costs are involved. It is a robust result from psychological experiments showing that humans do not behave in the way predicted by standard economic theory, which recommends that "sunk costs don't matter". In a paper making use of techniques from evolutionary game theory, I show that caring about sunk cost can be the outcome of an adaptive (payoff monotonic) learning process for subjects who care about the maximization of expected utility and who are risk averse.

Why humans care about sunk costs while animals don't. An evolutionary explanation

While humans often care about sunk investment, animals are not subject to this sort of sunk-cost behavior or "Concorde fallacy". This paper investigates a simple two-stage decision problem under uncertainty. At the second stage, subjects can commit the Concorde fallacy by sticking to the first-stage decision, independent of the state of nature revealed in the meantime. For stage one, any payoff monotonic process will converge to the correct decision. Committing the Concorde fallacy reduces the payoff but accelerates the evolutionary process since it acts like a "self-punishment". In the long run, it will, however, reduce the population growth rate and the population size at any point in time. In this sense, animals can never benefit from the Concorde fallacy. By contrast, risk-averse humans can. Risk aversion gives an extra benefit to a behavior that more rapidly assimilates knowledge needed to avoid bad outcomes. If the wrong initial decision leads very infrequently to a very low payoff, then risk-averse humans will be better off by committing the Concorde fallacy.

A third paper addresses a core problem faced by regulation in network industries: Should the regulator rely on "service competition", i.e., force the incumbent network owner to open its network at low cost for competitors, or should the regulator rely on the build-up of an alternative infrastructure? This paper is mainly empirical.

Cost and Benefits from Infrastructure Competition. Estimating Welfare Effects from Broadband Access Competition

Competition between parallel infrastructures incorporates opposing welfare effects. The gain from reduced deadweight loss might be outweighed by the inefficient duplication of an existing infrastructure. Using data from broadband Internet access for Western Europe 2000-2004, this paper investigates which effect prevails empirically. Infrastructure competition between DSL and cable TV had a significant and positive impact on the broadband penetration. Comparing the additional social surplus attributable to cable competition with the cable investments, we conclude that infrastructure competition has not been welfare enhancing. A theoretical model is provided, formalizing why the effect of competition on penetration might be limited.

Research in the industrial organization of network industries requires close contact to the industry and regulators to be able to identify relevant issues. I therefore try to interact closely with practitioners, both from the regulatory authority and from the market. This includes, for example, discussions and workshops with the German regulator REGTP. In addition, since regulation is minted into laws, I try to transfer some of the basic economic insights into the legal debate. This includes publications in law journals and in commentaries of the German Telecommunications Act:

Ramsey-Boiteux-Preise und Monopolpreise. Zu einigen verbreiteten Missverständnissen [Ramsey-Boiteux price. On some common misperceptions]. Netzwirtschaften & Recht 2, 46-50 (2005).

Konsistenzgebot im neuen TKG: Anforderungen und Zielkonflikte [Consistency obligations in the new German telecommunications act: Requirements and trade-offs]. Multimedia und Recht, 8 (6), Beilage, 6-8 (2005).

with M. Hellwig: Commentary on §§ 27-35, 38-39 TKG (Entgeltregulierung) [Telecommunications Act, Regulation of Fees]. In: Telekommunikationsgesetz. (Ed.) H-W. Arndt. C. F. Müller, Heidelberg (forthcoming 2005).

Research Agenda

Near-term research projects again focus on issues of sunk cost but also on access regulation. The first project is inspired mainly by the question of access to existing energy networks, but the basic theoretical problem of market entry extends to many different markets.

Share auctions for market entry and downstream competition

In many markets there exists an exogenously given capacity constraint. This capacity might be politically determined (e.g., the amount of central bank money in a tender, or the amount of import quotas or emission permits) or just technologically given within a given time frame (like entry capacities into electricity or gas networks, or radio spectrum

for telecommunications services). How should this capacity be allocated? Typical requirements are: non-discrimination, transparency, and efficiency. While the first two are standard requirements in most laws, the third is a genuine economic category. In reality, entry capacities are often allocated in auctions. This fulfills the first two of the requirements. Whether it also fulfills the efficiency goal is far less clear since the impact on downstream competition has to be taken into account. I want to analyze this sort of "share auction with externalities" theoretically, building on existing work of Wilson (QJE 1979) and Kremer and Nyborg (RAND 2004), but also confront this reasoning with the actual outcomes of auctions for capacity into the German electricity and gas market.

Another field for research is the analysis of the effect of long-term supply contracts on market entry in the energy industry. There have been continuous discussions between the German cartel office and market participants, both in the market for natural gas and for electricity, concerning long-term supply contracts. The cartel office sees these contracts as a barrier to entry for new suppliers, while market participants refer to the freedom of contract. This provides an interesting and empirically highly relevant area for a "law-and-economics" analysis of such contracts, in particular in the advent of market opening. The German gas and electricity markets serve as a natural experiment for this research. Comparisons to the UK market can provide additional insights since in the UK there is ownership unbundling, while in Germany many downstream firms (local utilities) are owned by the four large national energy producers.

Long-term supply contracts and competition

Consider an industry consisting of an upstream sector and a downstream sector serving final customers. In the absence of final market competition, prices might be regulated ex ante or ex post on a cost-plus basis; the regulator is imperfectly informed about the cost. One could think of this as gas importers, local utilities, and industrial and residential gas customers. We want to analyze the strategic pricing behavior for different institutional setups: The upstream firm might or might not own the downstream firm; there might or might not be upstream competition; and there might or might not be downstream competition. The conjecture is that (i) in case of vertical integration, introduction of upstream competition will not lower final marker prices, and (ii) even for vertical separation, upstream competition will effect downstream prices, only if the regulator can observe downstream costs, finally (iii) only simultaneous introduction of up- and downstream competition yield the desired welfare improvements from liberalization.

A further research topic is at the core of regulatory practice, at least in all telecommunications regulations, and it addresses the issues of access fees and their impact on market outcomes. It analyses the telecommunications regulation, which is common practice all over the world, and asks the simple question whether the standard approach properly reflects the fact that most cost of telecommunication network operators are actually fixed cost. It also aims to get additional insights from a cross-industry comparison with the electricity market.

Making fixed cost variable: Drawbacks of and alternatives to interconnection regulation

All telecommunications regulators have adopted an interconnection regime which provides access to the incumbent's network. Fees are on a per minute basis. This contradicts the technological cost function of supplying infrastructure services where virtually none of the cost vary with the minutes of use or even the use of access lines. However, the "material cost" of a typical fixed line operator amounts to almost 30 percent of its total cost on the P & L. These "material costs" are almost exclusively interconnection charges paid to other network operators (mainly mobile termination fees). Thus, regulation transforms the technological cost structure which exhibits no variable cost into one which has 30 percent variable cost. This research wants to analyze the welfare effects of this and discuss alternative payment structures like capacity-based pricing. Analysis of capacity-based pricing has been pioneered by Oren, Smith, Wilson (Econometrica 1985). Capacity-based pricing is far more common in energy-market regulation, which can serve as a useful comparison.

Publications (since 2002)

2003

with D. Sliwka : Do New Brooms Sweep Clean? Why and when dismissing managers can increase firm performance? European Economic Review, 47 (5), 877-890 (2003).

2005

Ramsey-Boiteux-Preise und Monopolpreise – zu einigen verbreiteten Missverständnissen. Netzwirtschaften & Recht , 2 (2), 46-50 (2005).

Konsistenzgebot im neuen TKG: Anforderungen und Zielkonflikte. Multimedia und Recht, 8 (6), Beilage, 6-8 (2005).

Ramsey-Boiteux prices and monopoly prices: Are they „similar"? And: Does it matter? Journal of Industry, Competition and Trade (forthcoming).

with M. Hellwig: Commentary on §§ 27-35, 38-39 TKG (Entgeltregulierung) [Telecommunications Act, Regulation of Fees]. In: Telekommunikationsgesetz. (Ed.) H-W. Arndt. C.F. Müller, Heidelberg (forthcoming 2005).

Jörn Lüdemann

Summary Report

In the past few years, my research has especially focused on constitutional law, public economic law, and legal theory.

The centerpiece of my dissertation, on the state-initiated education of the citizenry (entitled *Edukatorisches Staatshandeln*), is constitutional research: The state has increasingly attempted to govern its citizenry by advancing social morality. One example of this is the separation of waste in private households. People ought not only separate their waste because there is an ordinance for them to do so, but because they themselves view it to be a good thing. This form of governance, which can be labeled state-initiated education, is not merely of interest from the perspective of governance theory for instance, regarding whether morality does the job that the state expects of it. In addition, it throws up a whole array of fundamental legal questions, which have hardly been dealt with in the discussion of the state's communication activities thus far. This applies especially to the targeted change in perspectives. Does this entail an encroachment upon basic rights? Is the state to be allowed to influence the formation of public opinion? Does it have a mandate to educate its citizenry? After investigating the steering practice from a behavioral perspective, this work demarcates the constitutional parameters of the state advancement of socio-moral standards and develops constitutional law specifications for the application of this steering instrument. It makes it especially clear that, in the final analysis, state-initiated education is just another name for standard setting, and that it ought to be handled in constitutional law as standard setting.

A second research emphasis lies in public economic law. Three works are especially to be mentioned here: the monograph, "Die Öffentliche Hand als Leasingnehmer" (The Public Hand as a Leaser), the article "Internationales Kommunikationsrecht" (International Communications Law) for a textbook on international economic law, and the paper "Dezentralisierung und Kohärenzsicherung im europäischen Regulierungsverbund für die Telekommunikation" (Decentralization and Coherence in the Regulatory Network in European Telecommunications Law) [together with Stefan Bechtold].

In legal theory, my research interest has focused especially on questions of the methodological foundations of the legal reception of economic theories. This was treated in the article, "Die Grenzen des homo oeconomicus und die Rechtswissenschaft" (The Limits of the Homo oeconomicus and the Law).

Research Agenda

The center of my present as well as future research agenda is the habilitation project "Modern economic administration in the constitutional state". This thesis deals with current developments in German and European economic administration and examines the challenges that observable change sets for central categories of the public law: Have functional limits of the rule of law become evident? How can a flexible system of economic administration be democratically legitimized? How has the line between the making and the application of the law shifted? The study examines these and other issues with a special focus on the governemental supervision of banks and telecommunication law.

In an essay dealing with environmental law, legal, and behavioral theory, which is still in progress, I will take on the "presumptive outdatedness of regulative environmental law". In this paper, I shall essentially tackle the question of whether environmental law is as bad as its reputation. A smaller study on media law is devoted to house advertising of public broadcasting agencies in Germany. It analyses the legal permissibility of such advertising as well as its limits.

I have already started preparatory work for an extensive study labeled, "The science of administrative law as an applied behavioral science". It focuses on the self-conception of administrative law, its relationship with neighbouring sciences, and the inferences to be drawn by legal and scientific theory concerning the method of such a governance-oriented science.

Publications (since 2002)

Books

Die öffentliche Hand als Leasingnehmer. Heymanns, Köln 2003.

Edukatorisches Staatshandeln. Steuerungstheorie und Verfassungsrecht am Beispiel der staatlichen Förderung von Abfallmoral. Nomos, Baden-Baden 2004.

Recht und Verhalten. Beiträge zu Behavioral Law and Economics. (Eds.) J. Lüdemann with C. Engel, M. Englerth and I. Spiecker gen. Döhmann (forthcoming).

Articles

Die verfassungskonforme Auslegung von Gesetzen. Juristische Schulung, 27-30 (2004).

Eigentümer als Gebührenschuldner nach dem Autobahnmautgesetz. Neue Zeitschrift für Verkehrsrecht, 381-387 (2004).

Beihilfe- und Vergeberecht als Rahmenbedingung der Umweltpolitik. Deutsches Verwaltungsblatt, 488-490 (2005).

Die Grenzen des homo oeconomicus und die Rechtswissenschaft. In: Recht und Verhalten. (Eds.) C. Engel, M. Englerth, J. Lüdemann and I. Spiecker gen. Döhmann (forthcoming).

Internationales Kommunikationsrecht. In: Internationales Wirtschaftsrecht. (Ed.) C. Tietje. Berlin 2006, § 7 (forthcoming).

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A. van Aaken: „Rational Choice" in der Rechtswissenschaft. Zum Stellenwert der ökonomischen Analyse im Recht. Baden-Baden 2003. In: Rabels Zeitschrift für ausländisches und internationales Privatrecht 69, 408-411 (2005).

M. Ruffert: Die Globalisierung als Herausforderung an das Öffentliche Recht. Stuttgart 2004. In: Deutsches Verwaltungsblatt, (2005) (forthcoming).

with G. Kordel: G. Janson, Ökonomische Theorie im Recht. Berlin 2004. In: Rabels Zeitschrift für ausländisches und internationales Privatrecht (forthcoming).

Alkuin Kölliker

(Guest Researcher)

Summary Report

General subject of research

At the most general level, much of my research aims to contribute to a better understanding of the provision of collective goods by various forms of associations among human beings. The attempt to account for human associations, including states, by reference to the goods they produce can be traced back to Aristotle. My research focus is on the provision of "international" collective goods by means of international cooperation. International collective goods are goods which have the character of collective goods from the perspective of nations as a whole (rather than just from the perspective of sub-national actors, such as individuals, firms, or interest groups). This approach is ultimately rooted in the Westphalian doctrine of sovereign, unconstrained and territorially separate states. But a variety of forces called into question this doctrine, even before its worldwide breakthrough as a result of the establishment of nation-states on the territory of Europe's former colonial empires. Theories of collective goods, adapted for application in the international arena, can produce significant insights about some of these forces. This is particularly true for the web of interdependence and voluntary cooperation, which increasingly is transforming the previously fragmented, state-centered world polity.

Research approach

Based on conceptual and theoretical building blocks provided by theories of collective action (in particular public goods theory), several of my projects try to elaborate middle-ranged theories on important issues of international cooperation, ranging from the European to the global level. The general approach is thus to promote our understanding of key issues of international cooperation by analysing them with the tools of public goods theory. This also includes the collection of empirical data and the critical reappraisal of the theoretical models presented. The gap between theory and empirics is still rather large with regard to public goods theory and international cooperation. The attempt to bridge this gap should be fruitful, both for promoting our understanding of current problems of international cooperation and integration, and for refining our analytical tools for addressing future challenges. While my research is rooted in political science, it has strong links to both economics and law. It takes interdisciplinary seriously by strongly relating to elements of economic theory (e.g., public goods theory) and by taking seriously the important details of the legal framework in which international

cooperation takes place. It is from this broad perspective that I have planned my main past, present, and future research projects.

Projects already completed

The largest research project already concluded is my Ph.D. thesis, which was the consumation of my doctoral studies at the European University Institute in Florence. The project was partly conducted and finalized at the Max Planck Project Group on Common Goods. It presented a "theory of differentiated integration", which was subsequently applied to multi-speed integration within the European Union. The key issue was to explain the apparent centripetal and centrifugal effects of differentiated arrangements (such as EMU or Schengen), which initially do not include all EU member states. Differentiated integration theory explains these effects by reference to the different categories of goods involved in various policies (Kölliker 2001a). The theory ranks all categories of goods – as defined by public goods theory – according to their centripetal or centrifugal effects. It argues that centripetal effects are strongest in the case of excludable network goods, while centrifugal effects prevail in the case of common pool resources. The other types of goods (club goods, private goods, public goods and non-excludable network goods) are classed between these two extremes. Hypotheses on the establishment of differentiated arrangements, as well as on the eventual participation of initially unwilling countries in different policy areas, were then tested in the framework of fifteen comparative case studies. The latter covered all principal pillars of EU activities: trade and monetary integration; justice and home affairs; foreign, security, and defence policy; and social, environmental, and tax policies. The empirical results broadly support the theoretical conclusions (Kölliker 2002a, 2003a, forthcoming). The application of differentiated integration theory is by no means limited to European integration. Rather, the theory can be understood as a specification and further development of public goods theory regarding the incentives and disincentives of initially unwilling outsiders to participate in the provision of collective goods.

Smaller (and partly related) research projects already completed investigated issues such as national incentives for protecting environmental goods (Kölliker 2004a), burden sharing, and burden shifting among nations (Kölliker 2002b), as well as the unusual gap between voter decisions and interest group recommendations with regard to foreign policy-making in the Swiss direct democracy (Kölliker 1999). Research conducted in cooperation with European Commission officials addressed topics such as differentiated integration (Milner and Kölliker 2000), public aid to research and development in the United States (Kölliker 2001b), and economic governance in the euroarea (Fosdal, Kölliker and Pench 2001).

Research Agenda

Four main projects are currently in the phase of realization or preparation; the first two are partly overlapping. The first project aims to investigate different ways in which countries appropriate goods through international interaction. Different "modes of appropriating goods" include: autonomous (i.e., "national") production; mutual exchange; collective (i.e., international) production; free-riding; and competition. The application of different modes of appropriation is explained with reference to both the type of good and the type of country involved. The project ultimately aims at a modified conception of the term "international political economy". Cross-border political interactions could hence be explained as a result of the desire of countries (respectively their citizens) to maximize the utility they derive from publicly provided goods, given countries' limited initial endowments with specific resources.

The second (and related) project addresses the issue of regulatory competition from a public goods perspective (Kölliker 2003c). It analyses regulatory competition as a specific mode of appropriating goods, specifically by which countries attract goods from beyond their borders. The departure point is the discovery that the goods (international) regulatory competitors compete for are inevitably (international) common pool resources. Common pool resources are defined by non-excludability and rivalry in consumption, both of which are preconditions for competition in the first place. Against the background of this conceptual link between regulatory competition and common pool resources, the project intends to analyse – both theoretically and empirically – potential national responses to regulatory competition.

The third project investigates instruments to overcome decision-making deadlock within the Council of the EU and among its member states more generally (Kölliker 2004b). The project tries to explain the choice of various instruments such as issue linkage, side payments, transitory periods, or differentiation. According to the preliminary theoretical argument put forward, this choice depends on characteristics of the reluctant countries (relative wealth, general attitude towards further integration, discount rate for future benefits), as well as of the proposed policy (potential for regulatory competition).

The fourth project, which is currently only at a preliminary stage of development, will address the issue of relations among international organizations. While the study of international relations and international organizations has established itself as a major subfield of political science, the systematic and theory-based study of "inter-organizational relations" remains practically non-existent, despite the steady growth of interactions among international organizations, and notwithstanding a certain number of empirically oriented case studies (e.g., on EU-Mercosur relations). The project aims to elaborate a conceptual and theoretical framework for analysing inter-organizational relations, which includes – but is not necessarily limited to – public goods theory. The starting point is that, as forms of political associations, international organizations are fundamentally different from nations in a variety of respects. This also influences the character of their mutual relations. To give an example, the theory of externalities and public

goods leads to different conclusions, depending on whether we consider the relations among entities which are always territorially separate and typically exercise a comprehensive set of functions (= nation-states), or whether we investigate the relations among entities which may be territorially overlapping but are often functionally distinct (= international organizations). A smaller project on governance arrangements and public goods theory, which is already at a more advanced stage (Kölliker, under review), partly overlaps with, and can be seen as, a preliminary study on aspects of the larger project on inter-organizational relations.

Beyond the substance of the research already outlined, the projects currently planned or being executed should ideally also respond to at least some of the following concerns: (1) they should represent separate but interrelated projects, the common objectives of which should be visible; (2) they should include a balanced mix of theoretical and empirical research, which would make them particularly fruitful and relevant; (3) they should eventually try to include a micro-foundation of the macro-behavior of states, linking the logic of collective action among states and international organizations with the logic of collective action among (both intra- and transnational) organized interests; (4) they should try to tap into already existing insights of more developed models of human behavior than the simple rational choice model (e.g., as provided by behavioral economics).

Work Referred to in the Summary and Research Agenda

Articles in Journals

Die variable Geometrie der Europäischen Union: Möglichkeiten für die Schweiz, Aktuelle Juristische Praxis 5 (9), 1183-1193 (1996).

Public Aid to R&D in Business Enterprises: The Case of the United States from an EU Perspective. Revue d'Economie Industrielle 94 (1), 21-48 (2001).

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Books

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Governance Arrangements and Public Goods Theory: Explaining Aspects of Publicness, Inclusiveness and Delegation. In: New Modes of Governance in the Global System. (Eds.) M. König-Archibugi and M. Zürn. Palgrave, Houndmills 2005 (under review).

Other Publications

with F. Milner: How to Make Use of Closer Cooperation? The Amsterdam Clauses and the Dynamics of European Integration. Forward Studies Unit Working Paper. European Commission, Brussels 2000.
http://www.europa.eu.int/comm/cdp/working-paper/cooperation.pdf.

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Project Outlines and Conference Papers

The Integration Policy Gap. Votes and Interest Group Recommendations in the Swiss Direct Democracy. Unpublished paper. European University Institute, Florence 1999.

Burden-Sharing and Legal Differentiation: Insights from Public Goods Theory. Paper presented at the UACES Workshop on Internal and External Dimensions of EU Burden-Sharing. London School of Economics and Political Sciences, London, 26-27 April 2002.

The Impact of Flexibility on the Dynamics of European Unification: Towards a Theory of Differentiated Integration. Dissertation. European University Institute, Florence 2002.

The Political Economy of International Collective Goods: Towards a Theory of Political Globalisation, unpublished project outline. Max Planck Institute for Research on Collective Goods, Bonn 2003.

Competing for International Economic Commons: Towards a Public Goods Theory of Regulatory Competition, Paper presented at the European Forum Workshop Europe after Globalisation: Regulatory Cooperation and Regulatory Competition in an Integrating World Economy. Robert Schuman Centre (European University Institute), Florence, 4 June 2003.

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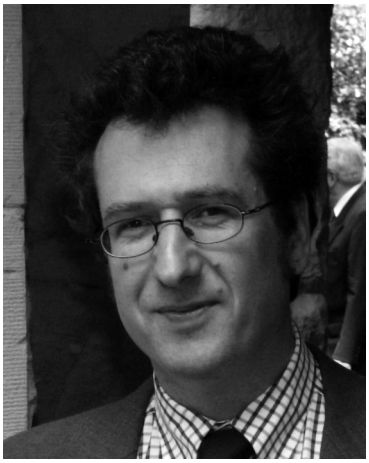

Stefan Magen

Summary Report

My past research has focused mainly on three areas. One is the field of law and religion, an area in which I also have acquired practical experience. I became convinced that the traditional German *Staatskirchenrecht* (church and state law) provides an astonishingly modern institutional basis for tackling the problems of religious pluralism in modern societies, but this is impeded by a narrow historical attitude in jurisprudence and legal scholarship. I therefore have tried to reformulate the historical legal understanding of institutions prevailing in German *Staatskirchenrecht* in terms of modern legal doctrine and to draw on the social sciences, rather than on tacit background assumptions, to account for the effects of religious change on society. By drawing on religious studies and organizational theory, my dissertation thesis – finished in February of 2003 – argues that religious communities have particular problems in keeping their organizational structure in accordance with their religious identity. It therefore can be shown that the status of a public law corporation, which has been constitutionally guaranteed for religious communities in Germany since 1918, is in fact a means to further the freedom of religion. In work on the symbolic dimensions of the law on church and state, I continued to apply social scientific insights to law and religion. Here I argued that, because of the symbolic nature of religion, state and church law also has an inherent symbolic dimension, and I showed how this symbolic dimension could be integrated into legal doctrine.

I also continued my work on constitutional law and on the constitutional court procedure. As part of a joint project with current and former law clerks of the FCC, I wrote commentaries on two major provisions of the court's procedural code (BVerfGG). The first deals with the obligation of a complainant to give reasons for his complaint (§ 92 BVerfGG). Although of tremendous practical importance – many of the complaints filed to the court fail to meet it – neither the literature nor the court have paid much attention to the underlying rationale and the guiding principles of this obligation. I try to provide both in order to structure and to assess the overflowing case-law. The second article mentioned falls within a further area of my interest, namely the constitutional right of local municipalities to self-government (Art. 28 Abs. 2 GG). The provision of the procedural code deals with the opportunity for municipalities to defend this right to self-government with constitutional complaint (§ 91 BVerfGG). Here I show that the procedure of constitutional complaint – although primarily designed to give citizens a means to defend individual human rights – is not at odds with the "institutional" character of the right to self-government, which derives from the fact that German constitutional law still regards municipalities as part of the state. A forthcoming article offers an more thorough account of the dogmatic structure of this "institutional guarantee".

Research Agenda

My present work continues previous research on doctrinal legal questions, while shifting the focus from constitutional law to administrative law and European law. The emphasis of my ongoing work however lies on questions of legal design. Behavioral law and economics and – more generally – a cognitive approach to legal institutions are the main theoretical approaches.

My habilitation thesis is to deal with justice as a common good. Unlike most theories of justice, the project does not primarily ask what the law should look like from a normative point of view. Instead, it takes an instrumental approach and asks how the law should be designed in order to achieve given ends. To this end, I draw on empirical theories of justice, taken from different disciplines, to provide a less speculative and more scientific account of the interaction between legal institutions and fairness judgments. My hypothesis is that it is still a major task of the law – on empirical grounds – to react to motives of fairness and justice held by its addressees, even or especially for pluralistic and diversified modern societies. But instead of expecting a bottom-down relationship between morality and law, one should rather expect a non-trivial, mutual interaction between legal institutions, individual perceptions of justice, and the behavior of the law's addressees. Thus legal doctrine seems to be ill-advised to try to address this demand by relying primarily on moral philosophy or on the intuition of lawyers. To gain an theoretical understanding based on empirical research of the interactions between legal institutions and fairness motives, I draw on ongoing debates on fairness preferences in experimental economics, anthropology, and evolutionary psychology, on the social cognition of justice judgments in social psychology, and on social norms in anthropology, sociology, and the economic analysis of law.

A further project is concerned with the role of precedents in legal decision-making. Precedents play de facto an important role in all modern legal cultures, despite huge differences in the role legal doctrine assigns for them. A cognitive approach to legal decision-making, based on the concept of heuristics, should be able shed some light on this phenomenon.

Honours

Walter Kolb Gedächtnispreis der Stadt Frankfurt am Main [Walter Kolb Memorial Prize for Best Dissertation in Law], City of Frankfurt am Main, upon the recommendation of the University of Frankfurt

Publications (since 2002)

Der Rechtsschutz in Kirchensachen nach dem materiell-rechtlichen Ansatz. Neue Zeitschrift für Verwaltungsrecht, 897-903 (2002).

Rechts- und Amtshilfe – Katastrophenhilfe. Artikel 35. In: Grundgesetz. Mitarbeiterkommentar und Handbuch [Basic Law, The Law Clerks Commentary and Handbook]. (Eds.) D. C. Umbach and T. Clemens. Müller, Heidelberg 2002, 1850-1869.

Weimarer Religions- und Kirchenartikel. Artikel 140. In: Grundgesetz. Mitarbeiterkommentar und Handbuch [Basic Law, The Law Clerks Commentary and Handbook].(Eds.) D. C. Umbach and T. Clemens. Müller, Heidelberg 2002, 1613-1680.

Körperschaftsstatus und Religionsfreiheit. [The Quasi-Public Status of Religious Communities and the Freedom of Religion]. Mohr-Siebeck, Tübingen 2004.

Staatskirchenrecht als symbolisches Recht? [Law on Church and State as Expressive Law?]. In: Koexistenz und Konflikt von Religionen im vereinten Europa. (Ed.) H. Lehmann. Wallstein, Göttingen 2004, 30-53.

§ 91 BVerfGG. In: BVerfGG. Mitarbeiterkommentar und Handbuch [Federal Constitutional Court Act, The Law Clerks Commentary and Handbook]. (Eds.) D. C. Umbach and T. F.-W. Dollinger. Müller, Heidelberg 2005, 1165-1182.

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Neuerwerb des Körperschaftsstatus. In: Fälle und Lösungen zum Staatskirchenrecht. (Ed.) H. M. Heinig. Boorberg, Stuttgart 2005, 129-150 (forthcoming).

Die Garantie kommunaler Selbstverwaltung. Juristische Schulung 2005 (forthcoming).

Book review: H. M. Heinig: Öffentlich-rechtliche Religionsgesellschaften. Studien zur Rechtsstellung der nach Art. 137 Abs. 5 WRV korporierten Religionsgesellschaften in Deutschland und in der Europäischen Union. Berlin 2003. Zeitschrift für evangelisches Kirchenrecht 50 (2005) (forthcoming).

with D. Kysar, P. Ayton, R.H. Frank, B.S. Frey, G. Gigerenzer, P.W. Glimcher, R. Korobkin and D.C. Langevoort: Are Heuristics a Problem or a Solution? In: Heuristics and the Law. (Eds.) C. Engel and G. Gigerenzer. MIT Press, Cambridge, MA 2006 (forthcoming).

Eigennutz, Fairness und die Rolle des Rechts. In: Verhaltenswissenschaften im Recht. (Eds.) C. Engel, J. Lüdemann and I. Spiecker gen. Döhmann. 2006 (forthcoming).

Frank P. Maier-Rigaud

(Guest Researcher)

Summary Report

My main research interests are in public economics and industrial organization. I am particularly interested in the application of theories developed in industrial organization to problems of public goods and common pool resources (CPR) and the application of theory and experimental methods to competition policy. My main analytical approaches involve tools such as game theory, simulation techniques, and experiments.

Current research spans from individual experimental papers, for example, with respect to *framing effects*, *ostracism*, *trans-boundary resource problems*, *individual versus corporate decision-making* or *effects of rebate schemes,* to more theoretic research focusing on *learning theories*, *failure of collective action as commitment device*, or *the role of time in Article 82 rebate schemes*. One leg of my research is based on the conviction that the public-good literature can profitably draw on insights from existing theoretical research in industrial organization because the similarity in the mathematical structures can be exploited to cross-fertilize both fields. The other leg is more applied in the sense that I am trying to use theoretical industrial organization and experimental methods for informing competition policy. Given that I started working for the European Commission at DG Competition in January 2004, my most recent research efforts have been more applied.

Publications (since 2003)

with J. Apesteguia: The Role of Choice in Social Dilemma Experiments. Preprints of the Max Planck Institute for Research on Collective Goods Bonn 2003/07.

with J. Apesteguia: The Role of Rivalry: Public Goods versus Common-Pool Resources. Preprints of the Max Planck Institute for Research on Collective Goods Bonn 2004/02.

Switching Costs in Retroactive Rebates – What's time got to do with it? European Competition Law Review 26 (5), 272 – 276 (2005).

with M. Beckenkamp: An Experimental Analysis of Rebate Schemes. Working Paper series of the Competition Law Scholars Forum (CLaSF), 2005.

with P. Martinsson, G. Staffiero: Ostracism and the Provision of a Public Good – Experimental Evidence. Preprints of the Max Planck Institute for Research on Collective Goods Bonn 2004/24.

with M. Beckenkamp: Trans-boundary Common-Pool Resource Problems. An Experimental Analysis of individual and corporate decision-making (forthcoming).

Embedded Common-Pool Resources: Overexploitation may be Collectively Rational (forthcoming).

with L. Gonzales and V. Levati: Cooperators as Efficiency Lovers? – Evidence from a Public Good Experiment (forthcoming).

with B. Schipper: Learning and Knightian Uncertainty in Common-Pool Resource Games: Lessons from Cournot Oligopoly (forthcoming).

with M. Beckenkamp, L. Gonzales and V. Levati: Tracking Motivations: Social Value Scale versus Strategy Method (forthcoming).

with M. Beckenkamp and H. Hennig-Schmidt: Coordination in Asymmetric PD Games – Experimental Evidence (forthcoming).

with M. Beckenkamp and H. Hennig-Schmidt: Framing Effects in Asymmetric PD Games – Experimental Evidence (forthcoming).

Remi Maier-Rigaud

(Guest Researcher)

Research Agenda

My main research interest is in social policy, especially retirement economics and aging. More specifically, I focus on the role of international organizations in the generation and diffusion of social policy ideas. The basic question is: What paradigms or basic values drive the different pension models of World Bank and ILO? This project is drawing on interdisciplinary literature on social security and pensions. The general framework combines political economy considerations with theories of international relations. Concerning the methodology semi-standardized expert interviews are conducted.

Besides this main project, two further lines of research are followed. First, in a joint contribution with Alkuin Kölliker, we focus on the theoretical conceptualization of international organizations as corporate actors. Based on the emergence of international organizations as corporate actors in their own right, the interaction between international organizations is analysed. In a second paper, I challenge the idea of incorporating demographic goals into retirement schemes.

Publications (since 2003)

with H. Flassbeck: Auf der schiefen Bahn. Die deutsche Lohnpolitik verschärft die Krise. Wirtschaftsdienst 83 (3), 170-177 (2003).

with F. Schulz-Nieswandt: Dienstleistungen von allgemeinem Interesse, die Offene Methode der Koordinierung und die EU-Verfassung. Sozialer Fortschritt 54 (5-6), 136-142 (2005).

Book Review: Cédric Guinand, Die Internationale Arbeitsorganisation (ILO) und die soziale Sicherheit in Europa (1942-1969). In: Vierteljahrschrift für Sozial- und Wirtschaftsgeschichte 92 (1), 77-78 (2005).

with F. Schulz-Nieswandt, M. Jochimsen and C. Kurscheid: Care Regimes for the Elderly in South Eastern Europe in a European Comparative Perspective (forthcoming).

Zur demographischen Instrumentalisierung von Rentensystemen. Sozialer Fortschritt 54 (12), 296-303 (2005).

with F. Schulz-Nieswandt, C. Kurscheid, S. Lee, J. Näthke and S. Wölbert: Zur Genese des europäischen Sozialbürgers im Lichte der neueren EU-Rechtsentwicklung. Lit-Verlag (forthcoming).

Andreas Nicklisch

Knowledge, ignorance, and adaptive learning: The use of information for interactive decisions

Summary Report

I joined the Max Planck Institute for Research on Collective Goods on June 1, 2005. Before that, I was Ph.D. candidate at the Max Planck Institute for Research into Economic Systems, Strategic Interaction Group, Jena, Germany and the Friedrich Schiller University, Jena (since June, 2002). My Ph.D. thesis was supervized by Prof. Dr. Werner Güth, Director of the Max Planck Institute, Jena.

Most of my work within the last three years was focused on the issue of decision-making of firms engaged in R&D competition. The thesis attempts to provide a starting point for the behavioral analysis of research activities by experimental methods. Of course, laboratory experiments cannot provide a framework in which actual invention processes are observed. Nevertheless, experimental studies reveal important aspects of this problem as they focus on the strategic interaction between firms and advance the understanding of factors that control search activities. More specifically, I explore relevant factors that promote (or hamper) R&D investments when the environment is too complex for analytically deriving an optimal investment strategy. Hence, the work illustrates which kind of information agents consider as reference points in dynamic decision-making. The experimental data indicate that the relative economic performance exercises a stimulating effect on the implementation of innovation and imitation strategies. As a key element for intensified competition – which is indicated by a small gap between the subjects' accumulated capital – subjects exhibit a significantly higher propensity to invest in innovations, as opposed to situations in which competitors feature an unequal capitalization. The main results of my thesis are summarized in the working papers Cantner, Güth, Nicklisch and Weiland (2004) and Cantner, Nicklisch and Weiland (2005).

Research Agenda

In my recent research, I apply and intensify the earlier findings in the area of adaptive learning in industrial organizations. Here, game theory offers the approach of best response functions which base on optimal reactions to adjustments of competitors. However, this concept is hardly supported by empirical observations. Instead, experimental research offers alternative approaches to identify actual adaptation processes. Prominent learning algorithms like imitation learning, belief learning, or directional learning attempt to describe actual adjustment patterns in market interactions. Yet,

those theories do not pay any attention to the fact that there are interactions with competitors on the market. Commonly, they rely almost exclusively on ex-post rationality in the sense that previous experience guides current behavior not considering adjustments of competitors. Therefore, it seems necessary to develop a theory that incorporates some degree of anticipation of competitors' activities. As a consequence, an approach of that kind advances our understanding of social learning. In fact, a very simple model of interactive learning that considers the importance of relative performance for decision-making in complex environments successfully organizes individual adjustment patterns of two-person oligopoly experiments. Results will be summarized in two upcoming working papers. Nonetheless, this approach of interactive learning stands in need of further investigation (i.e., applications to multi-person environments) and advanced game-theoretical foundations (i.e., a full-fledged learning model).

Furthermore, this research adds to some of my previous work on the use and value of information for market interaction. Unlike the standard economic approach, which maintains that additional information provided to all market participants increases the efficiency of interactions, in a series of laboratory experiments (Nicklisch, 2004, McDaniel and Nicklisch, 2004) I was able to show inefficient results of better informed players in a two-stage auction. This idea is further developed in a joint research project with Eyal Ert from the Max Wertheimer Minerva Center for Cognitive Research, Israeli Institute of Technology, Haifa, Israel. In a simple game-theoretical model, we show that, for some scenarios, ignorance increases the market power in bargaining processes. This project – which is funded by the German-Israeli Minerva Foundation – is a work in progress and, along with laboratory experiments, will be intensified in the next year.

Finally, I hope that the new position as a member of the Max Planck Institute for Research on Collective Goods enables me to apply the results of my previous studies to the context of public economics in order to develop by means of game theory and laboratory experiments a more general approach for the use of information in interactive decisions.

Publications

with U. Cantner, W. Güth, and T. Weiland: Competition in innovation and imitation. A theoretical and experimental study. Discussion Papers on Strategic Interaction 2. Jena 2004.

Perceiving strategic environments. An experimental study of strategy formation and transfer. Discussion Papers on Strategic Interaction 26. Jena 2004.

with T. McDaniel: Prices as indicators of scarcity. An experimental study of a multistage auction. Discussion Papers on Strategic Interaction, 30. Jena 2004.

Express Yourself. The price of fairness in a simple distribution game. Discussion Papers on Strategic Interaction 36. Jena 2004.

with U. Cantner and T. Weiland: Innovation shocks. An experimental study on strategic research activities. Discussion Papers on Strategic Interaction 14. Jena 2005.

with L. Zucchini: Implications of emission trading mechanisms. A laboratory experiment. Discussion Papers on Strategic Interaction 7. Jena 2005.

Dorothee Schmidt

(Guest Researcher)

Summary Report

My main research interest can be divided into two broad categories: theories of bounded rationality and theories of conflict/contests. More specifically, I am interested in the effects education has on the choice of individuals' decision variables.

My first project, "Bounded Rationality in the Demand for Health", is driven by a puzzle: it has been repeatedly found, empirically, that an individual's level of education is one of the most important determinants for the individual's level of health. The standard neoclassical models of the demand for health explain part of the effect, namely, that more educated individuals invest more into their health capital, because the opportunity costs of illness in terms of forgone earnings are higher for them. Nevertheless, this empirical relation holds, even though wage effects have been controlled for. My hypothesis is that this effect is due to the bounded rationality of the decision-makers. Especially in the context of health investment, where costs are immediate, but rewards mostly accrue in the far future, myopic behavior, self-control problems and the limited cognitive abilities of human subjects become a major limitation for optimal investment into human capital. As a consequence, if education mitigates these limitations and leads to "better" decisions, this would explain why better educated individuals are healthier as well, and this explanation surpasses that of standard human capital literature.

My second project, "Property Rights and Values" is motivated by the finding that individuals obey property rights even when no institutions to enforce them are present. Famous examples are the leaving of tips on a restaurant table or the obeying of contracts or transactions of little value, but high enforcement cost. Theories of repeated interaction are only partially able to explain such behavior. New institutional economics presents norms and values as a "soft" means to enforce property rights. Nevertheless, while the question of why one would expect the investment of resources into the creation of a common morality is answered, the puzzle remains about contexts in which one would primarily expect education in the sense of "value creation", as such, and as opposed to "human capital creation".

My framework of analysis is an economy in which each individual's property rights are contested by other individuals. This framework implies that a property right over a good or resource only has substance if an individual is able to defend it against appropriative activities of other individuals. Still, as has been noted, more moral individuals will be less prone to such behavior than less moral ones. Therefore, by investing into "morality", they make the opposite individual less likely to commit appropriative activities. In this

context, the question arises how much subjects should rationally invest into value creation if they are given the opportunity to invest. First hypotheses are that one will expect investment into values if a) the defense technology, is relatively inefficient compared to the appropriation technology and defense and education are substitutes, b) the opportunity cost of conflict in terms of forgone production, trade, etc. are high. A question closely connected to this problem is whether and when individuals should chose investment into morals rather than investment into human capital if they have the choice between the two options.

Honours

Knut-Wicksell Prize at the EPCS Conference, 2005 in Durham, UK

Publications

Morality and Conflict. Preprints of the Max Planck Institute for Research on Collective Goods 2005/12. Submitted to Public Choice.

Work in progress

Mitigating the Shadow of Conflict – The Role of Human and Social Capital.

Institutions, Fairness Norms and the Anchoring Heuristic in the Power-to-take gam – joint work with Ernesto Reuben, CREED, University of Amerstdam.

A Normative Foundation for Property Rights – joint work with Johannes Münster, WZB, Berlin.

Christian Schmies

Summary Report

A Dissertation in Law on Hedge Fund Regulation

Since the end of the 1990s hedge funds and hedge fund regulation have received a great deal of attention in the world's most important finance centers and at the international level. Though the origins of these largely unregulated investment vehicles reach back to the middle of the past century, they increased drastically in significance because of the rapid growth, especially in the 1990s. The growing interest in hedge funds is based, for one, on their comparably favorable risk-return ratio, and, for another, on the typically low correlation to other classes of investment, which suits hedge funds well for portfolio diversification. Hedge fund investment policy is not subject to regulatory limitations comparable to those applying to traditional investment funds. Among the special features that differentiate hedge funds from traditional investment funds are especially the encompassing use of derivative finance instruments, the short selling of securities, which must first be obtained from third parties, and the use of debt capital in order to leverage the investment. As a consequence of this, hedge funds are still considered an especially risky capital investment product.

At least since the spectacular 1998 crisis of Long Term Capital Management – a hedge fund managed from the US, but legally seated in the Cayman Islands – hedge funds have been discussed and have come under purview of national and international supervisory agencies as a potential source of danger for the stability of the finance system. Careless risk management on the part of many bankers at the time made it possible to set up hedge funds with little equity capital, both comprehensively financed with outside capital and at the same time intransparent: The threat of the insolvency of these funds after failed investment decisions was feared not only for the high losses to which it would subject the direct contract partners, but also for the repercussions on the finance system as a whole. However, subsequent thoughts about strengthening the direct regulation of hedge funds at the international level have largely fizzled out, not least of all, because many hedge funds are based in offshore jurisdictions.

Even just a few years after the LTCM crisis, regulatory focus regarding hedge funds shifted: no longer is the concern so much to prevent systematic risks as to ensure investor protection. Given that hedge funds were previously the focus of institutional investors and high net worth individuals, the importance of public regulation to protect investors of the capital funds appeared marginal; but for the past few years, less wealthy and less experienced investors have turned to hedge fund investment. For them, access to hedge funds in many jurisdictions, including Germany, has long been barred, or in any case exacerbated, by regulatory limitations of investment law. This has led, especially in Germany, to

the development of capital investment products, with returns which are tied to those of – nearly exclusively foreign – hedge funds, but which are not subject to the strict provisions of investment fund regulation for investor protection.

In accord with the model of numerous other states, especially Switzerland, Luxemburg, and Ireland, the German legislature now also allows for domestic hedge funds within the framework of new investment law: This is based on the Investment Modernization Law, which went into effect on 1 January 2004. Here, the legislature must walk a fine line. A legal framework was to create domestic hedge funds that allow the scope needed to make the establishment of the funds in an offshore jurisdiction superfluous, but at the same time guarantee a suitable degree of investor protection. The later goal is primarily to occur not through investment restrictions, but, in accord with the nature of hedge funds, through providing information to investors. As earlier in derivatives legislation, the access limitations thus loose their importance as an instrument for investor protection.

The question of the dangers of hedge funds for other financial market actors or for the stability of the finance system, which were so intensively discussed at the end of the 1990s, have now, by contrast, hardly been taken into consideration, even in the German hedge fund legislation. Obviously, the legislature trusts that the personal responsibility of the market players, as well as the indirect supervision of hedge funds – at least through the banks, which, as lenders, are liable to public regulation, and the contract partners in transactions with hedge funds – precludes the recurrence of an LTCM-like crisis in Germany.

Publications (since 2002)

Codes of Conduct in der Bankwirtschaft. Britisches Beispiel und europäische Weiterungen. Zeitschrift für Bankrecht und Bankwirtschaft 15, 277-291 (2003).

with A. Pütz: Die Umsetzung der neuen rechtlichen Rahmenbedingungen für Hedgefonds in der Praxis. Zeitschrift für Bank- und Kapitalmarktrecht 4, 51-60 (2004).

with A. Pütz: Prime Brokerage und deutsche Hedge Fonds. Absolut-Report Nr. 18, 2, 48-53 (2004).

with J. Köndgen: Die Neuordnung des deutschen Investmentrechts. Wertpapiermitteilungen Sonderbeilage 1, 1-26 (2004).

with A. Pütz: Hedge Fund Regulation in Germany. Journal of International Banking Law and Regulation 5, 177-183 (2004).

with A. Pütz: Die Investmentaktiengesellschaft als Rechtsform deutscher Hedgefonds. Teil I, Absolut-Report Nr. 19, 4, 50-54 (2004). Teil II, Absolut-Report Nr. 22, 10, 46-51 (2004).

with A. Pütz: Der neue Rechtsrahmen für Hedge-Fonds-Investitionen durch Versicherungsunternehmen. Absolut-Report Nr. 22, 10, 38-45 (2004).

The Implementation of the EU Prospectus Directive in Germany, Journal of International Banking Law and Regulation, Nr. 11/2005, S. 585 – 589.

Isabel Schnabel

Summary Report and Research Agenda: Stability of Financial Systems and Institutions

The main focus of my research is on the stability of financial systems and institutions. In my dissertation, I worked on the simultaneous occurrence of banking and currency crises (known as "twin crises"), the role of macroeconomic risks in financial crises, the role of the central bank as a lender of last resort, and the moral hazard induced by international crisis lending. More recently, my research has focused on issues related to the organization and regulation of the banking sector, such as the effects of public guarantees and of the new Basel Capital Accord on banks' risk-taking, and the role of public banks.

My work is both empirical and theoretical. In my earlier empirical papers, I analyzed historical episodes because these constitute interesting case studies containing many elements of more recent crises. My recent empirical work has been based on contemporary data sets. Most of my theoretical work has been inspired by empirical observations.

Twin Crises – The Crisis of 1931

In two recent papers, I analyze the German crisis of 1931. This crisis can best be described as a "twin crisis" because it involved the simultaneous collapse of the banking sector and the currency.

In "The German Twin Crisis of 1931" (2004), I analyze the causal links between the banking and the currency problems in the German crisis. The currency problems were triggered by political shocks, which shattered investors' confidence in Germany's ability and willingness to service its foreign debt and in its commitment to the gold standard. The subsequent run on the Reichsmark translated into withdrawals at German banks. However, the external drain cannot fully explain the problems in the banking sector. I show that the banking sector exhibited a large degree of heterogeneity with the great branch banks standing out due to their particularly poor performance, both before and during the crisis. In fact, the great branch banks appear to have pursued particularly risky business policies, which I explain by an implicit guarantee to banks that were "too big to fail". Especially, the great branch banks seem to have counted on the Reichsbank providing liquidity in times of crisis. However, the hands of the Reichsbank were tied due to its commitment to the gold standard. Only if it could itself obtain support from abroad would it be able to support the great banks in times of crisis. When political shocks made this support unlikely, the German financial system became inherently unstable. Over the course of the crisis, the banking and currency problems became increasingly intertwined, as the run on the currency and the withdrawals at German

banks were reinforcing each other. By generously providing liquidity to basically insolvent banks, the Reichsbank exhausted its reserves. In July 1931, the Reichsbank had to abandon both the banking system and the currency because it was not able to obtain international support.

The paper "The Role of Liquidity and Implicit Guarantees" presents some econometric evidence on the interpretations proposed in the other paper. The analysis is based on three hypotheses: The first hypothesis, named the currency-crisis hypothesis, states that the German crisis was a pure currency crisis and that deposit withdrawals were merely the consequence of a run on the German currency. The second hypothesis, the branching hypothesis, states that branch banks are more stable than unit banks due to a better diversification on both the assets and the liabilities sides of their balance sheets. The third hypothesis, the too-big-to-fail hypothesis, states that larger banks had a lower probability of failure than smaller banks because they had a higher probability of being saved by the public authorities in case of a crisis.

My results can be summarized as follows: First, I find strong evidence against the currency-crisis hypothesis. Indicators of banks' liquidity and solvency show a significant, independent impact on both deposit growth and bank failures. Second, there is only weak evidence that branch banks were more stable than unit banks. Third, there is strong evidence for large banks having had a higher probability of survival than smaller banks and somewhat weaker evidence that this also translated into lower deposit withdrawals, controlling for the riskiness of banks' portfolios. I further show that large banks were more likely to be supported in the crisis and that they received preferential access to the Reichsbank's discount window. I therefore conclude that large banks were indeed "too big to fail". Overall, the results from this paper are supportive of the interpretations proposed in the other paper.

Liquidity and Contagion – The Crisis of 1763

The paper "Liquidity and Contagion – The Crisis of 1763" (2004), which is a joint work with Hyun Song Shin, from the London School of Economics, describes a financial crisis that erupted just after the end of the Seven Years War in 1763. The war had given rise to an economic boom, which was accompanied by a strong expansion of credit through bills of exchange. In the eighteenth century, a new type of loan, the acceptance loan, had emerged. This type of loan made it possible to channel funds from Amsterdam, where capital was affluent, to Prussia, where capital was scarce, using Hamburg bankers as intermediaries. However, these loans also led to a massive increase in the leverage of bankers' balance sheets. Due to the offsetting nature of the claims and liabilities, the increased size of balance sheets and the attendant increase in leverage were not viewed with alarm in 1763.

The crisis was triggered by the collapse of certain commodity prices at the end of the war, such as the price of sugar, which put enormous strain on speculators, who were

heavily invested in these goods. When the first speculators broke down, the whole chain of claims in the tight web of bills of exchange unraveled, triggering fire sales of assets to meet liabilities and forcing further banks into bankruptcy. Hence, the crisis is an early instance of contagion on the asset side of the balance sheet. We highlight the salient features of the 1763 crisis and propose a stylized model of the events. Although the financial institutions have changed fundamentally since then, the crisis of 1763 shares many features with more recent episodes of financial market turbulence, such as the events of autumn 1998 when mature financial markets were caught in a severe liquidity crisis, culminating in the near collapse of Long-Term Capital Management. The lessons from the crisis appear to be universal.

Moral hazard and international crisis lending

In the paper "How Do Official Bailouts Affect the Risk of Investing in Emerging Markets?" (with Giovanni dell'Ariccia and Jeromin Zettelmeyer, both at the International Monetary Fund, forthcoming), we test for the existence of a moral hazard effect attributable to official crisis lending by analyzing the evolution of sovereign bond spreads in emerging markets before and after the Russian crisis of 1998. The non-bailout of Russia in August 1998 is interpreted as an event that decreased the perceived probability of future crisis lending to emerging markets. In the presence of moral hazard, such an event should raise not only the level of spreads, but also the sensitivity with which spreads reflect fundamentals, as well as their cross-country dispersion. We find evidence for all three effects.

Competitive effects of government bail-out policies

The paper "Banks without Parachutes – Competitive Effects of Government Bail-out Guarantees" (with Hendrik Hakenes, Max Planck Institute for Research on Collective Goods, Bonn) deals with the explicit or implicit protection of banks through government guarantees. These guarantees come in two forms: Public banks directly enjoy the backing by the government, while very large banks are often subject to implicit guarantees because they are "too big to fail". Both the political and academic discussion focus on the detrimental effects of such guarantees on the risk-taking behavior of the protected banks. In contrast, the reactions of the remaining banks in the banking system are not dealt with in the literature. We close this gap by analyzing the competitive effects of government bail-out policies on those banks that do not enjoy a public guarantee in two models with different degrees of transparency in the banking sector. Our main result is that the bail-out policy unambiguously leads to higher risk-taking at those banks that do not enjoy a bail-out guarantee. The reason is that the prospect of a bail-out induces the protected bank to expand, thereby intensifying competition in the deposit market and depressing other banks' margins. In contrast, the effects on the pro-

tected bank's risk-taking and on welfare depend on the transparency of the banking sector.

The question how the performance of the remaining banking sector is affected by government guarantees to certain banks is also interesting from an empirical perspective. Therefore, in an ongoing project ("Competition, Risk-Shifting, and Bail-out Policies", with Reint Gropp, European Central Bank, and Hendrik Hakenes, Max Planck Institute for Research on Collective Goods, Bonn) we complement our theoretical work with an empirical analysis to test for the effects described in the theoretical paper.

While there exists an extensive empirical literature examining the effect of bail-out policies on the risk-taking of protected banks, the effect of bail-out policies on banks outside the safety net has not – to our knowledge – been systematically examined. To fill this gap, this paper empirically investigates the relationship between banks' risk-taking behavior and the market share of protected banks in the banking system. It is important to note that such competitive distortions would not only be expected in the presence of explicit guarantees, but in much the same way in the presence of implicit guarantees. Such implicit guarantees are inherently difficult to measure. However, some of the big rating agencies explicitly distinguish between a bank's financial strength rating and an overall rating, which additionally considers the possibility of public support. These ratings are going to be used in our empirical analysis to judge the extent of implicit and explicit guarantees.

Bank size and risk-taking under Basel II

In the paper "Bank size and risk-taking under Basel II" (with Hendrik Hakenes, Max Planck Institute for Research on Collective Goods, Bonn), we analyze the relationship between bank size and risk-taking under the New Basel Capital Accord. Using a model with imperfect competition and moral hazard, we show that the introduction of an internal ratings based (IRB) approach improves upon flat capital requirements if the approach is applied uniformly across banks and if the costs of implementation are not too high. However, the banks' right to choose between the standardized and the IRB approaches under Basel II gives larger banks a competitive advantage and pushes smaller banks towards higher risk-taking due to fiercer competition. This may even lead to higher aggregate risk-taking.

The role of public banks

The paper "The Threat of Capital Drain: A Rationale for Public Banks?" (with Hendrik Hakenes, Max Planck Institute for Research on Collective Goods, Bonn) yields a rationale why public banks may be desirable from a regional perspective. We present a model with credit rationing and heterogeneous regions in which public banks may prevent a capital drain from poorer to richer regions by subsidizing local depositors, for

example, through a public guarantee. We show, however, that cooperative banks may serve the same function as public banks in our basic setup. We then describe the conditions under which either public or cooperative banks are superior. Whether public banks emerge in a political economy setting depends on the structure of the political system, on the heterogeneity of the population, and on interregional mobility.

Publications

Publications in refereed journals

The German Twin Crisis of 1931. Journal of Economic History 64 (3), 822-871 (2004).

with H. S. Shin: Liquidity and Contagion: The Crisis of 1763. [Formerly entitled "Foreshadowing LTCM: The Crisis of 1763"]. Journal of the European Economic Association 2 (6), 929-968 (2004).

Reply to Thomas Ferguson and Peter Temin's Comment on 'The German Twin Crisis of 1931'. Journal of Economic History 64 (3), 877-878 (2004).

with E. Carletti and H. Hakenes: The Privatization of Italian Savings Banks – A Role Model for Germany? DIW Vierteljahrshefte zur Wirtschaftsforschung 4/2005 (forthcoming).

with G. dell'Ariccia (IMF) and J. Zettelmeyer (IMF): How Do Official Bailouts Affect the Risk of Investing in Emerging Markets? [formerly entitled "Moral Hazard and International Crisis Lending: A Test"]. Journal of Money, Credit, and Banking (forthcoming).

with H. Hakenes: Braucht Deutschland eine 'private starke deutsche Bank'? Über die Notwendigkeit nationaler Champions im Bankwesen. [Does Germany Need a 'Strong Private German Bank'? On the Necessity of National Champions in Banking.] Kredit und Kapital (forthcoming).

Publications in edited volumes

The divorce between macro financial stability and micro supervisory responsibility: are we now in for a more stable life? – Comment. In: Monetary Policy and Financial Stability. Proceedings of the 33rd Economics Conference, Oesterreichische Nationalbank, Vienna (2005).

Books

Macroeconomic Risks and Financial Crises – A Historical Perspective. Dissertation. University of Mannheim, 2003.

Other publications

Lessons from the Seven Years War. CentrePiece, Centre for Economic Performance, London School of Economics 8 (3), 20-29 (2003).

Unpublished research papers

with H. Hakenes: The Threat of Capital Drain: A Rationale for Public Banks? First version July 2005, revised October 2005.

with R. Schnabel: Family and Gender Still Matter: The Heterogeneity of Returns to Education in Germany. First version: May 1998, revised September 2005. ZEW Discussion Paper, Mannheim 02-67.

with H. Hakenes: Banks without Parachutes – Competitive Effects of Government Bail-out Policies. [Formerly entitled "Too Small to be Saved – Competitive Effects of an Asymmetric Bailout Policy"]. First version January 2004, revised February 2005. Preprints of the Max Planck Institute for Research in Collective Goods 2004/12.

The Role of Liquidity and Implicit Guarantees in the German Twin Crisis of 1931. [Formerly entitled "The Great Banks' Depression – Deposit Withdrawals in the German Crisis of 1931]. First version December 2002, revised March 2005. Preprints of the Max Planck Institute for Research in Collective Goods 2005/05.

with H. Hakenes: Bank Size and Risk-Taking under Basel II. First version October 2004, revised March 2005. Preprints of the Max Planck Institute for Research in Collective Goods 2005/06.

Work in progress

Competition, Risk-Shifting, and Bail-out Policies, with Reint Gropp (European Central Bank) and Hendrik Hakenes (MPI Bonn).

Ingolf Schwarz

Summary Report

My research in the past mainly focused on money in general equilibrium theory. I will explain two papers of mine, including some of the related doctrinal history.

A monetary general equilibrium is a general equilibrium in which the real value of money is positive. In 1965, Frank Hahn published a negative finding: namely, that existence of competitive equilibria in Patinkin's (finite horizon) general equilibrium model with money was not enough to infer the existence of monetary general equilibria. Under the presumption that fiat money can only be used in exchange for something else, Hahn proved that there are always equilibria in Patinkin's model in which the value of fiat money is zero. This problem has become known as the *Hahn problem*. One way to overcome this problem is to model an economy with an underlying need for a store of value and to make money the asset which provides that store of value. However, in the papers taking up this issue, money is in fact the only store of value which exists in the economy. But if there exists an asset besides money, which has a higher rate of return than money but the same marketability properties, then the value of money must be zero in every rational expectations environment. This problem is called the *modified Hahn problem*. It can be solved by giving money some advantage in its marketability properties over the other assets. This corresponds to the assumption that money serves as a medium of exchange. A structure which involves this feature can also be used to resolve the Hahn problem itself without modeling an infinite horizon.

In the paper "Monetary Equilibria in a Baumol-Tobin Economy", I show the existence of monetary competitive equilibria in an economy where money competes against real capital as a store of value. I achieve this by giving fiat money an advantage in its marketability as compared to capital. This is done by introducing fixed transactions costs in the spirit of the Baumol-Tobin model for the transactions demand for money. I build on the insights of Gale and Hellwig (*A General Equilibrium Model of the Transactions Demand for Money*, CARESS Working Paper 85/07), which is the seminal contribution on this topic, and extend their model. The framework is as follows. Time is discrete; the horizon is unbounded; and the economy is populated by households and firms. In every period, there is a labor market, a market for capital, a money market, and a market for a physical output good. The latter can be consumed or invested. Households accumulate the claims on capital to earn a return from renting it to firms, and they supply labor to earn wage income. A transactions demand for money is generated by the assumption that households have two physically separated accounts: a "cash account" and a "checking account". On the latter account, they save by accumulating capital, and they earn their labor income and capital rents. On the cash account, households may

choose to inventory money and to finance consumption. If the households want to transfer wealth between their two accounts, they have to sacrifice some fixed costs, because it is assumed that the two accounts are physically separated. These fixed costs prevent the households from transferring wealth in every period, and encourage them to hold money as a store of value on the cash account between two transfer periods. We derive sufficient conditions for the existence of monetary competitive equilibria in this economy. Importantly, the number of periods over which households choose to hold money is determined by optimization. It can even be zero for a positive measure of households. Because goods must be bought with money, but the time period over which money is held is not exogenously fixed, one can say that this model has a "flexible cash-in-advance constraint". In a typical cash-in-advance economy, the number of periods over which an agent holds money is, by construction, exogenously fixed to one: Households receive their income on a given evening and need to hold it over night to use it for whatever they would like the next day. A cash-in-advance model can hence be seen as a special case of the model presented here.

We explained before that advantages in the marketability of money can resolve the modified Hahn problem. A very direct way to do so is to impose a cash-in-advance constraint on (a part of the) consumption expenditures. In the paper *Monetary Equilibria in a Cash-in-Advance Economy with Incomplete Financial Markets*, which is written together with Jinhui H. Bai, we use the cash-in-advance technology in a two-period stochastic exchange economy with incomplete financial markets and a government. The latter consists of a central bank and a fiscal authority. The central bank either pegs the nominal interest rates or it fixes the money supply. The policy of the fiscal authority is either Ricardian or non-Ricardian. Due to the cash-in-advance structure, we have to allow households in every state in the future period to take out new loans at the central bank, which can be paid back in the evening of the respective state by using the income from selling endowments. Under a Ricardian fiscal policy, we prove the existence of monetary competitive equilibria under assumptions similar to those in the standard general equilibrium model with incomplete asset markets and nominal assets. We show that the equilibrium set is not determinate. This result is true for both interest-rate peg and money-supply policy of the central bank. The basic reason for the indeterminacy is the specification of the fiscal policy. Indeed, we will argue that the Ricardian fiscal policy implies that the number of macro-variables exceeds the number of independent equations in this economy exactly by the number of terminal states. We model the non-Ricardian fiscal policy such that the process of positive nominal transfers is fixed exogenously. If the fiscal authority follows this rule, the existence of monetary equilibria requires a richer set of assumptions than in the Ricardian case. The intuition is that if the fiscal authority fixes nominal transfers to households at some predetermined and positive level, the government must earn seignorage or tax returns to be able to balance its budget. In particular, if taxes are zero, then the gains to trade in the economy must be large enough to induce some positive seigniorage income for the government. We prove existence for both interest-rate peg and money-supply policy even if taxes are zero. If one interprets the nominal transfer of the government as outside money, then

this result resolves the Hahn problem. Since, in the equilibrium, the money is held as a store of value between the evening of one day and the morning of the next day, money serves as a trivial store of value even though an interest bearing bond co-exists. Hence the modified Hahn problem is also resolved. In contrast to the Ricardian economy, every obvious degree of indeterminacy is lost. Intuitively, where the Ricardian fiscal policy implies a number of redundancies in the terminal date, the non-Ricardian fiscal policy simply does not imply these redundancies.

Research Agenda

My future research will advance my existing results on both topics mentioned above. In the first place, the analysis of the economy in which money competes as a store of value against real capital, as given in the paper "Monetary Equilibria in a Baumol-Tobin Economy", should be generalized in several directions. For one, the model should be extended to allow for a broader notion of the monetary aggregate. In fact, the present model only focuses on cash. But cash is quite a small subset of the monetary aggregates that are relevant for central banks, say M1. As a further extension, one can imagine a more general setting with several goods. Generalizing the framework of the neoclassical model with one physical object, however, drastically complicates the analysis. Finally, the model should be extended to allow for staggered wage payments. That is, one can assume that the wages are paid not in every period but only from time to time. In the first place, it can be analyzed how the interest-rate process reacts to such a payment structure. If firms have to incur some debt to pay wages in advance, say, for a whole month, then they will have to compete for the funds from the household sector at this date. One can suspect that the interest rates will tend to be higher at such points in time. As a consequence, optimal behavior should then imply that firms voluntarily choose heterogeneous wage-payment dates throughout the month. Hence, the date of wage payments should then be included into the analysis.

I further plan to extend my results on the existence and indeterminacy of monetary equiliria in cash-in-advance economies. In particular, I am currently working on an extension of the standard neoclassical, real business-cylce model, in which I incorporate money and a fiscal and monetary authority as modeled in the paper "Monetary Equilibria in a Cash-in-Advance Economy with Incomplete Financial Markets". The literature has not yet delivered a tractable monetary model in which production is subject to random aggregate shocks, individuals may trade financial assets and capital among each other and bonds with the central bank, and, in particular, in which the government is not reduced to an unrealistic entity. The latter aspect is important since I want to allow for open-market operations of the central bank to induce money into the economy. The literature, however, has always focused on lump-sum transfers of money to the households, which is just "helicopter money". The questions that I want to address concern the existence of a macroeconomic equilibrium with a recursive structure. I plan to address

the indeterminacy of the equilibrium under interest-rate peg and the money-supply policy of the central bank with both a Ricaridan and a non-Ricardian fiscal policy.

Indra Spiecker gen. Döhmann

Report Summary

My personal research agenda has concentrated on three major fields: While the project "State Decisions Under Conditions of Uncertainty" remains the main focus of my interest at all the different areas of research levels (regarding content, legal implications, methodology, and the interdisciplinary approach), two other fields of my particular interest have developed that can best be described from their methodological approach, rather than their content area, within the legal community: On the one hand, law and economics as an analytical "toolbox" of interest, expanded to integrate behavioral law and economics, and, on the other hand, the field of comparative and international law as a content-oriented field of interest.

1. State Decisions under Conditions of Uncertainty

This area of research interest is embedded in a large project, soon to be completed in a habilitation: Law has traditionally been based on the assumption of certainty. However, in the past few years, modern legal theory has recognized that there has been increasing societal and theoretical awareness of situations in which knowledge is lacking. Those with an innovative understanding of law as a tool of governance have especially stressed the importance of knowledge and the problems associated with the lack of knowledge: Governance needs knowledge. Nevertheless, legal theory has concentrated on the importance of risk management, i.e., to avoid the negative effects of legal decisions rather than to explore the field of decision-making itself. A better understanding of which values, interests, and frameworks govern the decision-making regarding whether to take a risk or not, and regarding the acceptable extent of risk, is still lacking in legal theory. My habilitation aims at filling this void and giving the first guidelines to better decision-making under conditions of uncertainty.

Since other disciplines are much better equipped to deal with this and have a much longer tradition of research in the field of uncertainty, some work has concentrated on establishing the foundations of an interdisciplinary approach in the legal workplace. This is true especially for the discussion report of the conference on knowledge, ignorance, and uncertain knowledge (2002) and for a initial exploitation of the possibilities of including economic research of risk and uncertainty into the legal framework, exemplified in genetic engineering law (2001). Legal implications of other disciplines have also been tested in the field of toxic and chemical substances (2003) and very recently in the field of health regulation (2005). A co-authored article on the use of heuristics in making law explores further how mental tools, such as heuristics, that have been identified in psychology can be used in legal decision-making (2005, forthcoming).

A number of guiding results have been presented in three recent articles: One concentrates on the possibilities of the state on information gathering as a first step in the decision-making process (2005). The second one looks at the interdependence of information gathering and material regulatory tools (2005, forthcoming). The third one identifies legal and economic decision rules and compares their effects and analytical strengths (2004).

2. International and Comparative Law

A second field of interest has focused on a variety of subjects in the wide field of international and comparative law. Especially the different Anglo-American approaches to legal questions can, in general and in particular, provide a very fruitful area of research. One prominent example from my work can be found in the comparative article on toxic and chemical substance law, demonstrating that the newly proposed European information and control system (REACH) has to deal with some of the same criticism the long established American system already faces from the standpoint of the production and provision of information (2003). Also, additional published research has proven to show valuable insights for the German legal understanding of these matters, e.g., on the question of recognition of judgments and legal decisions (2002), or the variation of interpretations of international standards in continental and U.S.-American law (e.g., in the commentaries on the court decisions on *Sei Fujii v. State of California* and *U.S. v. Curtiss-Wright Export Corp.*, 2005). My interest on decision-making, on the one hand, and comparative legal studies, on the other hand, was fruitfully combined in an analysis of heuristics in American, Roman and European/German law (2005, forthcoming).

3. Law and Economics, Behavioral Law and Economics

Finally, based on the general approach of analysing the law with economic tools, a third major area of research has been productive: The fruitfulness for the interpretation of legal problems of several analytical models from economic theory, most prominently the public goods approach, has been tested, e.g., as shown in the development of a new party financing system (forthcoming), in the information-gathering processes of legislative and administrative powers in general (2004), in reorganizing the German Health system (2005), or, in particular, in toxic and chemical substance law (2003), as well as in statistical data processing (2005, forthcoming). More recently, this research approach has been extended to include a more behaviorally informed analysis, introducing psychological insights, e.g., in a critical view of market-oriented reform approaches in the health system (2005) and especially in the representation of statistical data processing (article and book 2005, forthcoming). In this work, my co-author from the field of psychology, and I claim that the German Infectionary Disease Act (BinfSchG) does not provide sufficient informationary tools to reach its acclaimed goal of more and better information to the constituents – a result not yet sustained by legal analysis, but

which seems quite apparent if looking at the established means of information from an economic and psychological viewpoint. Also, an intense look at heuristics in law is part of this research program (2005, forthcoming). More passive acknowledgements of the status-quo of the German law and economics movement, as evident in two reviews of current books (2004 and 2005, forthcoming), round off this research agenda.

Research Agenda

1. State Decisions Under Conditions of Uncertainty (Project)

My main research agenda for the near future will lie in the final composition of the habilitation project, "State Decisions under Conditions of Uncertainty". This project is based on previous work performed during my stay at the MPI, especially several articles on information gathering (2003; 2005; forthcoming) and decisions under uncertainty in neighbouring sciences, preferably economics (2001; 2004; forthcoming). A major focus of this work will lie on the identification of several different kinds, reasons and types of uncertainty on which all following parts of the work will consequently build (previously discussed, 2001). Several preceding steps to the decision itself will be presented, such as information gathering (2003; 2004; forthcoming), avoidance of decision, application of heuristics (forthcoming) or the construction of certainty. In a final step, legal decision modes under conditions of uncertainty will be analysed and, afterwards, integrated into the existing systematic approach to state decision-making and its control.

2. Information Gathering and Information Processing (Project)

Another area of future research will lie in the analysis of several aspects of state organized information gathering and processing, employing – aside from economic theory – especially psychological insights, not only from the research into the use of biases and heuristics by the human mind, but also from the broader viewpoint of ecological rationality. A traditional, widespread belief within the legal community, that more information is better information and that it thus provides for better decisions, will be contested in my future work broadly. Also, I will further examine factual and normative restraints on the gathering of information and the use of existing information within the government. This area of research builds on previous work that makes use of economic and psychological theory in legal information gathering (2005; forthcoming) and decision-making (2004; forthcoming).

Publications (since 2002)

Books and Co-Authored Books

Die Anerkennung von Rechtskraftwirkungen ausländischer Urteile. Eine Untersuchung zur Fortgeltung des ne-bis-in-idem. Nomos, Baden-Baden 2002.

with C. Engel, M. Englerth and J. Lüdemann (Eds.): Recht und Verhalten. Beiträge zu Behavioral Law and Economics. (forthcoming).

Articles in Edited Volumes

Wissen, Nicht-Wissen, Unsicheres Wissen. Ein systematisierender Überblick über die Diskussionsbeiträge der Konferenz. In: Wissen – Nichtwissen – Unsicheres Wissen. (Eds.) C. Engel, J. Halfmann and M. Schulte. Nomos, Baden-Baden 2002, 371-404.

US-amerikanisches Chemikalienrecht im Vergleich. In: Umgestaltung des deutschen Chemikalienrechts durch europäische Chemikalienpolitik. 9. Osnabrücker Gespräche zum deutschen und europäischen Umweltrecht. (Ed.) H.-W. Rengeling. Carl Heymanns, Köln 2003, 151-198.

Staatliche Entscheidung unter Unsicherheit. Eine Analyse ökonomischer Entscheidungsmodule im öffentlichen Recht. In: 44. Assistententagung Öffentliches Recht. (Eds.) M. Bungenberg, S. Danz, H. Heinrich, O. Hünemörder, C. Schmidt, R. Schroeder, A. Sickert and F. Unkroth. Boorberg, Stuttgart 2004, 61-89.

Informationsgewinnung im dezentralen Mehrebenensystem. In: Nicht-Normative Steuerung in dezentralen Systemen. (Ed.) J.-B. Oebbecke. Franz Steiner, Stuttgart 2005, 253-284.

Politische Institutionen als öffentliche Güter am Beispiel der Parteien und ihrer Finanzierung. In: Die Zukunft der Parteienfinanzierung. (Ed.) M. Morlok (forthcoming).

with S. Kurzenhäuser: Das juristische Darstellungsgebot: Zum Umgang mit Risikoinformation am Beispiel statistischer Datenerhebung am Beispiel des BInfSchG. In: Recht und Verhalten. Beiträge zu Behavioral Law and Economics. (Eds.) with C. Engel, M. Englerth and J. Lüdemann. (forthcoming).

with J. Haidt, S. Baer, L. Cosmides, R. A. Epstein, W. Fikentscher, E. Johnson, J. J. Rachlinski and C. Sattler: What is the role of heuristics in making law? In: Heuristics and the Law. (Eds.) C. Engel and G. Gigerenzer. MIT Press, Cambridge, MA (forthcoming 2005).

Zur Wettbewerbsfähigkeit der Gesundheitsgüter. Ökonomische Analyse des rechtlichen Ordnungsrahmens, in dem der Wettbewerb gelingen kann. In: Wettbewerb als Steuerungsinstrument im Recht des Gesundheitswesens, (Eds.) A. SChmehl and A. Wallrabenstein. Mohr, Tübingen 2005, 1-35.

Commentaries on decisions

a) Vogt ./. Deutschland, EGMR v. 26.09.1993
b) Wille ./. Liechtenstein, EGMR (Gr. Kammer) v. 28.10.1999
c) Süßmann ./. Deutschland, EGMR v. 16.09.1996
d) Rotaru ./. Rumänien, EGMR v. 4.05.2000
e) Refah Partisi ./. Türkei, EGMR v. 13.02.2003
f) Lopez-Ostra ./. Spanien, EGMR v. 9.12.1994
g) Handyside ./. Vereinigtes Königreich, EGMR v. 7.12.1976
h) Sei Fujii v. State of California, 38 Cal. 2nd 718
j) United States v. Curtiss-Wright Export Corporation, 299 U.S. 304

In: Völkerrechtssprechung. (Eds.) J. Menzel, T. Pierlings and J. Hoffmann. Mohr Siebeck, Tübingen 2005.

Articles in Journals and Newspapers

Rethinking Judicial Review: The Latest Decision of the Plenum of the Federal Constitutional Court. German Law Journal 4 (2003), 10.

Verletzung rechtlichen Gehörs in der Rechtsmittelinstanz – gleichzeitig eine Anmerkung zu BVerfG NJW 2003, 1924. Neue Zeitschrift für Verwaltungsrecht 22, 1464-1466 (2003).

Grenzen kommunalrechtlicher Weisungsbefugnis in Finanz- und Steuersachen. Zugleich eine Urteilsanmerkung zur Entscheidung des VG Köln vom 19.3.2004. Neue Zeitschrift für Verwaltungsrecht, 1276-1279 (2005).

Informationsgewinnung im Umweltrecht durch materielles Recht. Deutsches Verwaltungsblatt (forthcoming 2005).

Book Reviews

Benjamin Böhler, Die Ökonomie der Umweltgüter. In: Deutsches Verwaltungsblatt 6, 362-363 (2004).

Thorsten Vehslage, Stefanie Bergmann, Svenia Purbs, Mathias Zabel, JuS-Referendarführer. In: Juristische Arbeitsblätter 36, 4/2004, X (2004).

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Michael P. Guthke, Ökonomische Gesichtspunkte im Rahmen der Herstellung der Verhältnismäßigkeit staatlichen Handelns im multipolaren Verhältnis. In: Deutsches Verwaltungsblatt (forthcoming 2005).

Cass R. Sunstein, Laws of Fear. Beyond the Precautionary Principle. (forthcoming in 2006). In: RabelsZ.

Stephan Tontrup

Summary Report

I briefly want to give an overview of three of my main research projects. They are concerned with legal methodology (treated in Section I below), comparative law (treated in Section II), and legal philosophy (treated in Section III).

I. Legal Methodology

In my dissertation, I present and analyse different strategies for integrating positive and normative social sciences into judicial methodology. In the following, in a first step, the need for integration is demonstrated; in a second, positive and normative complications that one has to overcome are shown. From its Roman tradition, law has invented a very successful method for treating the corpus of law as if it were a rational, coherent entirety. The legal system counterfactually imposes this methodological imperative on policy output that is in reality highly fragmentized. This makes it possible to evaluate a given rule not only by referring to its hypothetical consequences or by speculating about the historical motives for introducing it, but also by linking up structures and making well-tested legal differentiations available throughout the entire law corpus. The drawback of this method, which is characterized by looking inside the corpus, is that it has no inbuilt technique with which to analyse reality. In a small society organized mainly by personal contacts, one could understand the causal links between actors intuitively. As a result, traditional law has mainly consisted of command-and-control regulation, built on moral values and the social controls of the face to face society. To govern today's complex society, law has to compensate for the lack of social controls: It therefore sets out to design broader legal frameworks within which people act. To handle this indirect mode of regulation, judicial methodology is forced to integrate social sciences, prominently law and economics (LE).

Integration faces normative and functional complications, which differ depending on whether normative or positive approaches are used. Different positive theories will suggest different results. Because every norm includes assumptions about reality, the way theory shapes these assumptions will change the content of the norm. Regularly there are competing approaches, and the scientific community has not made up its mind (and might even never do so) about which one deserves the most credit. Therefore the criterion that internally drives the research of the social sciences cannot help the lawyer: All theories claim to be well-tested. Therefore normative criteria are needed for externally choosing from among the theories. We must thus ask, for example, what the normative consequences are of deciding, in accord with the Chicago School, to interpret the antitrust rules in a rather restrictive way, should it turn out in the end that the theory was wrong. The lawyer has to exploit the normative implications of applying the different

theories if he cannot claim that the theory he chooses is the only valid one out there. There is a choice to be made and argued for.

Normative approaches such as LE claim to have legal status, so they can be openly used and not only secretively in the diffuse light of inspiration in doctrinal reasoning. Within a legal system, which is methodologically built upon the idea of a closed corpus, this means the normative approach has to be a part of the corpus.

This should not imply, like judicial methodology often does, that meeting these criteria is the task for one lawyer alone, making his decisions from scratch. A central function of doctrinal law is to provide decision programs for other legal actors within the system. The actors have different roles: They are judges, public officials or scholars, for example. This allows for specialization. For those working with social sciences, reflecting on all possible normative implications that applying different theories might have is as much a regulative idea as producing a coherent body of law. Structurally these are demands for a collective not an individual: A single lawyer could not even theoretically meet the coherence task, since he cannot know what all the other actors are doing at the precise time he makes his decision. Instead, this is a task for the system as a whole. Establishing separate discourses within the legal system provides one example of how methodological tasks are institutionalized. One is concerned with exploring the regulatory models underpinning hypothetical laws and the hypothetical interpretations of given laws. Here, different theories can be tested, new normative contact points can be found or created. The legal doctrine is formed to precisely tailor the information the practicing lawyer needs. Since this can be a construction which works blind, the lawyer need not reconstruct the whole discourse. So applying the rule is the task of secondary discourse: When doing this, a lawyer largely can work with his hermeneutical, case-comparing method. He can use doctrinal theory as a decision-making program, which functions like a normative heuristic. The theory remains in the background. Everyone stands on the shoulders of others.

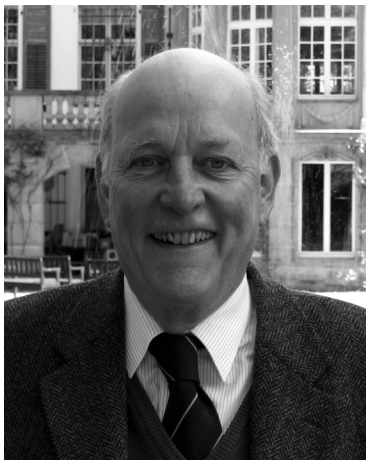
II. Comparative Law

There is a tension in the normative American law-and-economics approach (LE) between explanatory and predictive power, on the one hand, and the normative demands of legal theory, on the other. This tension can be resolved by integrating LE into an institutionalized methodology, i.e., a methodology that functions because of being embedded in institutional practices. Judicial methodology places the lawyer under the authority of the law. He treats the law as if it were a consistent and closed corpus, which he is bound to. This allows for judge-made law, even if it, in rare cases, produces results differing explicitly from the rationale of the historical legislation. In any case, the judge always has to argue within the value system of the corpus. In other words, he has discretion, but, at least in theory, he is not a source of the law. LE has to break this principle since it is an external theory. Therefore, using LE, the lawyer or the theory itself becomes a source of law. Consequently, Posner demands that LE fulfil criteria charac-

teristic of legal theory, such as coherence and clarity. Because he does not believe that allowing for deviations from a narrow rational choice model can lead to a manageable and clear theory, he rejects any approaches that attempt to empirically validate the behavioral assumptions of LE. Given that imposing normative criteria on theory formation limits the explanatory power of LE, in my article on this issue, I attempt to disentangle the social science framework and the normative demands of legal theory, both conceptually and institutionally.

III. Philosophy of Law

A typical view in legal philosophy is that the legal system should be a bulwark of the good. Carl Schmitt's work makes the limits of positivism apparent. Law requires the acceptance of its addressees and executers. It is thus the task of the judicial enterprise to continually adapt the doctrine in a fashion convincing to its addressees. The independent professionals function as seismographs for present currents of mind. New positions are possible since no judge has the power to bind another to any interpretation. But in practice, judges rely on the positions of the higher courts to provide for the predictability of decisions and to prevent their decisions from being reversed. Such independence therefore creates an opportunity, both for change and stability. But this comes at a price: Appeals to noble-mindedness are senseless. The legal system cannot guard society against itself.



Carl Christian von Weizsäcker

Summary Report

April 2004 – September 2005

I have been active in a number of research areas.

1. Welfare Economics, when the Measure of Economic Performance is Itself Dependent on the Area to be Measured. In the conventional theory of welfare economics, the performance of an economic space (city, nation, continent, or the entire globe) is measured by the degree to which the needs of the members of this economic space are fulfilled. It has only been possible to consistently apply this theory by presupposing that the preferences of the members who define these needs are established, that is, exogenously given. This presupposition, however, does not correspond to reality. My contribution to overcoming this dilemma consists in showing that even when the preferences of individuals react to the state of society, it is possible to measure performance so long as the preferences follow a certain "law of motion" characteristic of what I call "adaptive preferences" and so long as what I refer to as the "improvement axiom" is accepted as the evaluative principle.

In an inter-temporal model with Euclidian consumption space, I can then prove that this space can be completely structured if the following quasi-preference order is deployed: B is preferred to A if there is an improvement path of A, along with the preferences that were originally adapted to it, ending in B. This is also true for the interpersonal influences on individuals' preferences.

I believe that recent results of experimental economics confirm the hypothesis of adaptive preferences.

I have been able to present this work at diverse academic conferences: in Madrid at the Econometic Society Conference in August 2004, and, in an improved form, in Toulouse at the Laffont Memorial Conference in June 2005, in Amsterdam at the annual conference of the European Economic's Association in August 2005, in Bonn at the *Verein für Socialpolitik* in September 2005, and in guest lectures at the Universities of Cologne and Kassel.

2. The Principle of Symmetry in the Prevention of Abuses of Dominant Undertakings. Current competition policy has difficulties formulating general principles for differentiating between the legitimate and the abusive behavior of dominant undertakings. My approach concentrates on a general principle, which I call the principle of symmetry. It starts from the observation that in the end-user's compensating demand function, the cross-price effect of the price of good 1 on the quantity of good 2 is equivalent to the cross-price effect of the price of good 2 on the quantity of good 1. This symmetry of the cross-price effect implies that the market-share effect on goods 1 and 2 brought about

by a price reduction of good 1 can be compensated by an equivalent price reduction of good 2. I call this the symmetric character of markets. It is now – demonstrated in reference to the example of rebate strategies – possible that this symmetric character can be circumvented by dominant undertakings, to the disadvantage of their competitors. My suggestion is to speak of an abuse by the dominant undertaking if the behavior annuls the symmetric character of the market.

Building on earlier work, I can show that the symmetric character of a large number of markets with derivative demand can be deduced from the symmetric character of the final demand. This is especially clear if, in the form of monopolistic competition, the customers compete as suppliers in a downstream market.

I presented the initial findings of this research in Porto (Portugal) at the annual conference of the European Association for Research in Industrial Economics (EARIE) in September 2005.

3. Synthesis of Hayek and Keynes. I have long been irritated by the misunderstanding between the guardians of von Hayek's legacy – among which I count myself – and the guardians of Keynes' legacy – among which I also count myself. In a lecture at the Walter Eucken Institute in Freiburg in April 2005, I ventured to create a synthesis between Hayekian competition theory and Keynesian macroeconomics. This work, which builds upon earlier research, is non-axiomatic in character, but it challenges young academics to take some steps towards axiomatization. It is crucial here to think through the Hayekian approach, which anticipated much of the later theory of the market under incomplete information, although this is largely unacknowledged in the field.

4. Energy Policy and the Continuation of Kyoto. My interest in the ecological aspects of energy policy is based on my earlier position as director of the Institute for Energy Economics at the University of Cologne. The stabilization of the world climate is a "world common good" par excellence. In this context, I am involved in work to prepare the "Post-Kyoto" Protocol. Besides the practical issues, I am here especially interested in the theoretical problem of the tension between the values of "sustainability" and "democracy". The latter is based on the revisability of political decisions; the former, precisely on their non-revisability. I have dealt with this issue in public lectures in Berlin and Zurich.

5. Theory of the "Social Market Economy". I work on a major project with this title. It is engaged in an attempt to connect the German tradition of the "social market economy" with the methodic tradition of axiomatization. The cornerstones of this attempt are (1) the theories of justice of Rawls, Sen, and others; (2) welfare economics, given adaptive preferences (see point 1 above); (3) the transfer of utopian thought (in the tradition of Thomas Moore) as a guiding idea to the conceptions of Eucken, Müller-Armack, Hayek, Catholic social teaching, the modern "green" movement, the modern idea of "economic democracy", etc.; (4) the idea of "general compensation", earlier formulated by me (which awaits axiomatization, by me or someone else) as a justification for the competitive market economy; (5) the "status-quo orientation" of all societal activity oriented

toward the “responsibility for the whole”, especially that of the state – in contrast to that of the economy, and science capable of change, which achieve “progress” precisely because they assume no responsibility for the whole (or: “freedom” as a prerequisite for “progress”).

Preliminary results of this project were presented in a lecture course in the SS 2005 at the University of Cologne, under the title "Theorie der Sozialen Marktwirtschaft". Materials on this were made available to the course participants. There is also an earlier manuscript, "Einführung in die Wirtschaftspolitik", which served as the groundwork for a lecture for first-year students of law at the Bucerius Law School in Hamburg, which is a non-mathematical introduction to the topic.

Select Publications

Comment on: Ulrich Witt, Beharrung und Wandel – ist wirtschaftliche Evolution theoriefähig? Erwägen Wissen Ethik 15, 128-130 (2004).

Einführung in die Thematik. In: Wettbewerb in der Versorgungswirtschaft. (Ed.) P. Oberender. Duncker and Humblot, Berlin 2004, 9-22.

Über den optimalen Umfang der Staatstätigkeit. Leo-Brandt-Vortrag, held on 9 October 2002 in Düsseldorf. Schöningh, Paderborn 2004.

Ist der Begriff des Fortschritts kompatibel mit einer evolutorischen Sicht von Wirtschaft und Gesellschaft? In: Studien zur evolutorischen Ökonomik IX. (Ed.) W. Kerber. Duncker and Humblot, Berlin 2004, 15-28.

Einkommensteuer II oder Einwohnerversicherung. Das deutsche Gesundheitssystem ist an der Wegscheide angelangt. Frankfurter Allgemeine Zeitung, 29.05.2004, Nr. 124, 13.

with W. Elberfeld: Ist der Subtraktionstest ein geeignetes Verfahren zur Ermittlung missbräuchlich überhöhter Netznutzungsentgelte? Netzwirtschaften und Recht 1, 93-98 (2004).

Ökonomische Probleme der Strommarktliberalisierung. In: Energie – Vorträge anlässlich der Jahresversammlung der Deutschen Akademie der Naturforscher Leopoldina vom 17. bis 20. Oktober 2003 zu Halle (Saale). (Ed.) H. zur Hausen. Wissenschaftliche Verlagsgesellschaft, Stuttgart 2004, 179-192.

Ist Eucken noch aktuell? Anmerkungen zu "Walter Euckens Ordnungspolitik”. (Eds.) I. Pies and M. Leschke. In: Ordo Jahrbuch für die Ordnung von Wirtschaft und Gesellschaft 55, 345-352 (2004).

Bookreview: Gerechtigkeit als Voraussetzung für effizientes Wirtschaften, (Eds.) M. Held, G. Kubon-Gilke and R. Sturn. In: Ordo Jahrbuch für die Ordnung von Wirtschaft und Gesellschaft 55, 364-368 (2004).

Was Kommt nach "Kyoto"? Konturen eines künftigen "echten" Klima-Abkommens. Energiewirtschaftliche Tagesfragen 54, 782-785 (2004).

Zur Gemeinwohlorientierung des Wettbewerbsrechts. In: Gemeinwohl und Wettbewerb. (Ed.) P. Kirchhof. Müller, Heidelberg 2005, 85-99.

Marktzutrittsschranken. In: Effizienz und Wettbewerb. (Ed.) P. Oberender. Duncker and Humblot, Berlin 2005, 43-61.

Gerechtigkeit, Freiheit und Wohlstand. Die Auflösung einer vermeintlichen Antinomie. Neue Zürcher Zeitung, 14.05.2005, Nr. 111, 29.

Discussion Papers

The Welfare Economics of Adaptive Preferences. Preprints of the Max Planck Institute for Research on Collective Goods, 2005/11.
http://www.coll.mpg.de/pdf_dat/2005_11online.de

Hayek und Keynes: eine Synthese. Freiburger Diskussionspapiere zur Ordnungsökonomik 05/4.

D.II.2 Former Members of the Institute

Thomas Baehr

Summary Report

Governing Behavior through Command and Control Regulation

Command and control regulation has fallen into disrepute. It is regarded as "antiquated." Especially with regard to environmental law, its scanty enforcement has been criticized. Regulatory law is said to be in a crisis. Yet in spite of the sustained criticism, command-and-control regulation remains an important instrument of governance. In particular, imperative forms of regulation still play a significant role in the provision of common goods.

The claimed inefficacy of command-and-control regulation has predominantly been an issue of legal policy. But taken seriously, this poses normative concerns, too: Command and control regulation inevitably interferes with fundamental rights. If the widespread criticism is valid, there will be problems concerning the constitutional justification of this interference.

In order to adequately evaluate whether the use of regulatory law meets constitutional standards, a better understanding of its mode of operation is necessary. For such an understanding it is not sufficient to determine failures in specific situations. Rather, it is important to examine the particular conditions under which it functions. This issue can only be adequately addressed in cooperation with other disciplines that specifically deal with the explanation of human behavior.

Existing concepts in the law and economics literature and in the field of sociology offer valuable insights. However, on their own they are not sufficient to explain the process of behavioral modification through regulatory law. In an attempt to be broader in scope, as part of my project, I thus studied the impact of command-and-control regulation on the addressee: How does regulatory law influence individual behavior? Which factors promote the success of regulatory policy? After a brief review of the literature on the issue, I developed a behavioral-theoretical explanation that takes insights from social psychology into account. In doing so I suggested potential restraints and negative effects.

Subsequently I addressed the constitutional implications of this model. Most relevant in this respect are the proportionality principle and the principle of equality. Besides that, concepts of objective law, such as the principle of austerity and cost effectiveness, come into play.

The research project was completed in January 2004. My Ph.D. thesis on the issue was accepted by the University of Osnabrück in 2004.

Publications (since 2002)

Verhaltenssteuerung durch Ordnungsrecht. Das Vollzugsdefizit als Verfassungsproblem. Nomos, Baden-Baden 2005.

Florian Becker

Summary Report

Trends in Governance: cooperation, economization, globalization

Governance in modern societies is shaped by several distinctive developments, the analysis of which has been at the core of my research during the past few years. The following issues have received particular attention in my work during this time:

I. Governance across multiple arenas: Contracted legislation and legislation through contract

Governance in modern societies is influenced by actors across multiple arenas. The term "governance" refers to the process whereby elements in society wield influence, power, and authority, and enact policies and decisions concerning public life, and economic and social development. Governance is a broader notion than government, the principal elements of the latter term including the constitution, the legislature, the executive, and the judiciary. Governance involves interaction between these formal institutions and the institutions of civil society. From a constitutional point of view, this inevitably requires a concise analysis of the state's role in bargaining processes. The state is no longer the single actor (if it ever has been) governing the fate of the society by hierarchical means. The lack of knowledge necessary for centralized control and the possible existence of repulsing individual actors suggest that if governance aims to be successful, it will have to integrate the addressees of governance into this very process of governance. In my habilitation project, I elucidate the theoretical framework within which this interaction between public and private actors occurs. From that starting point, I analyze the flexibility and the options the constitutional framework offers for such bargaining. Hereby, I focus my research on the legislative process. In this context, private parties also participate in legislation. They do so, for example, by taking part in parliamentary reviews of experts and interest groups, but also by concluding legislative contracts with the state. In contrast to the generally held view, such contracts are not invalid on the face of it, and, against the background of the constitutionally guaranteed principle of the protection of confidence, such contracts can also bind the parliamentary legislator.

II. Governance: economization and globalization

Constructing a – or better, *the* – market has been the prime concern of the EC. Therefore it does not come as a surprise that economization – to be understood as the use of the allocating functions of the market mechanism to substitute for political decisions – has been an important instrument for pursuing policy goals in the EU. "Economization" describes the use of market processes to achieve regulative common goods targets.

There are numerous theoretical concepts to be found under that heading. They all share the principle of utility maximization – sometimes with expressly negative connotations. Of special interest here is what is known as procedural economization. This is characterized by the opening of a formal market in an area in which other coordination mechanisms were previously dominant. The deregulation of network industries – such as energy, telecommunication, and rail – has been a core EU policy during the last decade, while the marginalization of state intervention, by integrating it into the economic process, has been the main goal of the EC. While it may never be possible to fully achieve the latter goal, with regard to the former one, we will have to fine-tune the balance between state responsibility and the market approach in this decade. I devoted a serious amount of my research to the economization of governance, e.g., – on the national level – by the distribution of telecommunication licenses in auctioning processes.

The problems arising from the globalization and economization of European law for the Community legal order also show amazing parallels to the developments that have influenced the administrative law systems of the member states over the past years and decades: namely, their Europeanization and economization. Quite similarly to how member state's administrative law systems, by joining in supranational structures, were forced to open themselves to system-external elements – e.g., by the introduction of certificate trading for CO_2 emissions – challenging adjustments are now once again demanded from European law. From the outset, it is highly questionable whether the idea of economising governance is compatible with the Community's traditional environmental law approach to regulation. The ECT recognises the global dimension of the problem and the solution. The treaty reformulates this as a Community mandate for international cooperation. This treaty-based mandate makes the deficits of a mixed system systematically and constitutionally bearable.

Honours

1 October1996 – 31 June 1997	DAAD Fellowship for graduate studies at Cambridge University
28 June 1997	Clive Parry Prize (Overseas) for International Law at Cambridge University
July 2004	DFG funding for printing costs

Publications (since 2002)

Book

Kooperative und konsensuale Strukturen in der Normsetzung. Mohr Siebeck, Tübingen 2005.

Articles

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e) Eichmann, Supreme Court (Israel), ILR 36 (1961), 277 (781-787);
f) Barcelona Traction, 5.2.1970, ICJR 1970, 3 (467-472);
g) Advisory Opinion on the Legality of the Threat or Use of Nuclear Weapons, ICJR 1996, 66, 226 (847-853);

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Book Review: Stefan Korte: Das staatliche Glücksspielwesen. In: Archiv des Öffentlichen Rechts (forthcoming).

Dirk De Bièvre

Summary report

As researcher at the Bonn Max Planck Institute from March 2002 until May 2003, I mainly worked on the preparation of a post-doctoral research project, which in the future might lead me to a habilitation in the political sciences. My previous Ph.D. research, at the European University Institute in Fiesole, on the impact of the GATT/WTO on domestic coalition formation in the EU, shaped my interest in the role of judicialization in the international trading system. Moreover, it occured to me that the strengthened WTO dispute settlement might be related to the move to bring ever more non-trade public policy fields under the jurisdiction of the organization. This lead me to explore the interrelationship between strengthened WTO enforcement and member states' negotiation behavior to try and achieve positive integration in the WTO, especially with regard to the protection of intellectual property rights. Towards the end of 2002, I therefore formulated a post-doctoral research project, "Governance in International Trade: Judicialisation and Positive Integration in the WTO", and submitted it for funding with the Volkswagen Foundation in its research program, "Globale Strukturen und deren Steuerung". Funding was awarded in the course of 2003, at a time it had increasingly become clear that the political sciences would no longer be represented with a department of their own within the institute. In June 2003, I became an EU-funded post-doctoral researcher at the Mannheim Centre for European Social Research (MZES) at the University of Mannheim, conducting research on the political institutions of EU trade policy and its relationship to judicialization and positive integration in the WTO. From October 2005 till March 2008, I will be pursuing the research project funded by the Volkswagen Foundation for which I was able to lay the groundwork during my time at the institute in Bonn.

Publications

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The WTO and Domestic Coalitions. The Effects of Negotiations and Enforcement in the EU, Ph.D. Dissertation, Department of Social and Political Sciences, European University Institute (EUI), San Domenico di Fiesole (I), 2002, Abstract: http://www.mzes.uni-mannheim.de/users/ debievre/debabstr.html, data available on same site.

Re-designing the virtuous circle: two proposals for WTO reform. An essay on resolving and preventing US-EU, and other trade disputes. In: Journal of World Trade, 36, 5 (Oct

2002), 1005-1013 (prize winning essay in the EUI-RSCAS Transatlantic Essay Competition 2001).

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Dominik Böllhoff

Summary Report

My central research focus during the past few years has been on comparative administrative research, European integration, and utility regulation.

The core result of my research, my dissertation, entitled "The Regulatory Capacity of Agencies", offers a theory-led, comparative administrative study of regulatory agencies. Regulatory agencies are innovative public institutions, which are increasingly being set up all over the world to steer privatized utility sectors (especially in telecoms, energy, and rail). The central task of these institutions is to transform sectors from monopoly to competition. The main task of my study is to analyse regulatory agencies on the basis of the concept of regulatory capacity, which is utilized to explore the decision-making power of agencies within their administrative environment. Using inter-organization and resource-dependency theory, an analytical framework is developed in which the regulatory capacity of regulators is analysed. The study refers to the internal organization of regulators (intra-organizational level), as well as the administrative environment, along with the inter-organizational relations between the regulator and external organizations. To analyse the intra- and inter-organization level, actual decision-making procedures are explored: this includes an analysis of the formal institutional structures, but also of informal decision-making procedures.

The analysis of the actual institutional form of regulators is then utilized to reveal the restrictive effects of the institutional form of the regulators. Evaluating these restrictive effects, the overall regulatory capacity can be assessed. The aim of the analysis is to show, for each regulator, whether the regulatory capacity is high, medium, or low. Exploring the regulatory capacity of two regulatory agencies, the British Office of Telecommunications Regulation (OFTEL) and the German Regulatory Authority for Telecommunications and Posts (RegTP), a core empirical finding is that OFTEL has a stronger regulatory capacity than the RegTP.

Research Agenda

Having started to work for the Federal Ministry of the Interior, in Berlin, I am still involved in research on aspects of regulatory and administrative reform.

First, I am engaged is ongoing research on regulatory agencies in the telecoms sector, the main interest here being on the role of ministries in steering subordinated regulatory agencies. How do ministries and their political leadership define the goals for interacting with agencies? Which steering instruments are utilized to influence agency decision-making, and how do agencies respond to this influence?

Second, in close connection to research on regulatory agencies and the "regulatory state", my research interest is on issues of "better regulation". All debates on new modes of governance and alternative forms of regulation to the side, the law is still the central formal steering instrument of states. That is why there is an increasing attempt to improve the quality and to reduce the number of regulations. The EU and most of the member states have started initiatives to simplify laws, reduce red tape, deregulate rules and regulations, and to install mechanisms to assess the impact of new regulations.

My research interest is on the methods and tools used, the procedures at the political and administrative level and the mechanisms installed to ensure that initiatives on better regulation have effect for states, administrations, citizens, and companies.

Publications

The New Regulatory Regime – The Institutional Design of Telecommunications Regulation at the National Level. In: Common Goods. Reinventing European and International Governance. (Ed.) A. Héritier. Rowman and Littlefield, Lanham 2002, 227-254.

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Developments in Regulatory Regimes – An Anglo-German Comparison on Telecommunications, Energy and Rail. In: Refining Regulatory Regimes. Utilities in Europe. (Eds.) D. Coen and A. Héritier. Elgar, Cheltenham (forthcoming).

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Bessere Rechtsetzung bei der Europäischen Union – Stand der Umsetzung und Ausblick zu Initiativen der Europäischen Kommission zur Rechtsvereinfachung und Gesetzesfolgenabschätzung. In: Bürokratieabbau. Verwaltungsreform oder Reformsymbolik? (Ed.) E. Bohne. Duncker and Humblot, Berlin (forthcoming).

Tanja A. Börzel

Summary Report

During my three years as a senior researcher at the Max Planck Project Group (1999-2002), I worked on the problem of non-compliance for the provision of common goods by international institutions. In particular, I was interested in the role of private actors. (Transnational) private actors are important for the provision of common goods. But their influence varies significantly, both across time and issues. The major challenge for theorizing about non-state actors and the compliance with international institutions for the provision of common goods is not only to demonstrate that they matter, but also to explain where, when, and how they matter. I developed a theoretical framework that specifies different causal mechanisms through which state actors, international institutions, and private actors, respectively, make an impact on compliance (Börzel 2002, published as an MPP Preprint). In order to explore the explanatory power of the various hypotheses, I used the European Union as a test case. In my book on (non-)compliance with European environmental law, I systematically traced the ways in which private actors have facilitated and impaired the effective implementation of EU environmental policy (Börzel 2003). Comparing the results with studies on compliance with international human rights allowed me to demonstrate the generalizability of the theoretical claims (Börzel and Risse 2002, published as an MPP Preprint).

The next project sought to broaden the analysis of the sources of non-compliant behavior of states. Focusing again on the European Union, I wanted to find out why some member states comply less with European law than others, and why some European norms and rules are more frequently violated than others. During my last six months at the project group, I wrote a grant proposal for a "DFG Nachwuchsgruppe", in which I developed a set of hypotheses to account for variations in non-compliance, both across member states and policies. In order to test the hypotheses empirically, I compiled a database on member state infringements of European law. The quantitative analysis of the data makes it possible to reduce the number of explanatory variables so as to systematically control them in comparative case studies. The proposal was accepted and in March 2002 I started with my research team at the Humboldt University in Berlin. One year later, I was appointed professor of political science at the University of Heidelberg. The project has just been renewed for another two years. (The grant proposal, as well as the interim report summarizing the most important findings of the first two years of the project, can be found on my website: www.boerzel.uni-hd.de.)

Publications (since 2002)

Non-State Actors and the Provision of Common Goods: Compliance with International Institutions. In: Common Goods: Reinventing European and International Governance. (Ed.) A. Héritier. Rowman and Littlefield, Lanham, MD 2002,155-178.

with Thomas Risse: Die Wirkung internationaler Institutionen. Von der Normanerkennung zur Normeinhaltung. In: Regieren in internationalen Institutionen. (Eds.) M. Jachtenfuchs and M. Knodt. Leske + Budrich, Opladen 2002, 141-182.

Environmental Leaders and Laggards in the European Union: Why There is (Not) a Southern Problem. Ashgate, London 2003.

Pieter Bouwen

Summary Report

After finishing my doctoral dissertation at the Max Planck Institute for the Study of Societies in June 2002, I worked from July 2002 until September 2003 as post-doctoral fellow at the Max Planck Project Group in Bonn. Before discussing my work at the institute, I would like to point out that I took the opportunity during this period to participate in several conferences and workshops abroad. In addition to conferences in Belgium (Brussels) and the Netherlands (Dordrecht), I presented my work at "Sciences Po" in Paris and at the Mannheimer Zentrum für Sozialforschung (details of the conferences, see below). My activities in Bonn during that period can be summarized under two headings. Firstly, it was my aim to submit a number of international publications in the field of European interest representation based on my Ph.D. research conducted at the European University Institute in Florence and the Max Planck Institute in Cologne. In addition to articles in international renowned journals, I prepared a number of chapters for edited volumes and submitted a preprint for the project group's working papers series. Meanwhile, most of these publications have been accepted for publication (for the list of publications, see below).

Secondly, I developed a new research agenda in the area of European governance. This has resulted in two international research projects (for a short description, see below). The first project, "Competing for Consultation – Root of Conflict between the European Commission and the European Parliament", has become part of a larger two-year project entitled "The Battle for Competencies in the European Union". It is being conducted in cooperation with Adrienne Héritier (European University Institute / Robert Schuman Centre for Advanced Studies, Florence), Henry Farrell (University of Toronto), and Carl-Fredrik Bergström (Swedish Institute for European Policy Studies). Meanwhile, it has become clear that this project will result in a book and a special issue of West European Politics. The second project, "New Modes of Governance in Europe – The Impact of the Lamfalussy Committee on European Governance", is embedded in a very large interdisciplinary research program on "New Modes of Governance in Europe". The research program was proposed by the Robert Schuman Centre for Advanced Studies in Florence (A. Héritier and H. Wallance) and five strategic partners: the Max Planck Institute, Cologne (F. Scharpf and W. Streeck); ARENA, Oslo (A. Follesdal); Fondation National des Sciences Politiques, Paris (R. Dehousse); Institute of Public Policy, Warsaw (L. Kolarska-Bobinska); University College, Dublin (B. Laffan). Recently, this program has been accepted as an Integrated Program in the context of the Sixth Framework Program managed by the European Commission.

These projects were further elaborated and extended during my post-doctoral fellowship at the Université Catholique de Louvain (UCL) from October 2003 until June 2004. The "Association universitaire pour l'action publique" (AURAP) appeared to be an ideal place within the university's political science department to start implementing these projects.

However, the responsibility for these research projects has now been partially transferred to my AURAP colleagues in Louvain-la-Neuve, as I have recently taken up my duties at Directorate General Enterprise of the European Commission in Brussels.

Research Agenda

I. New Projects on European Governance

Project 1: Competing for Consultation – Root of Conflict between the European Commission and the European Parliament

The aim of this research project is to investigate the inter-institutional conflict that occurred between the European Commission and the Parliament as a consequence of the publication of the Commission's White Paper on Governance, published as a Commission communication in July 2001. In the White Paper, the Commission defines "governance" as the rules, processes, and behavior that affect the way in which powers are exercized at the European level, particularly as regards openness, participation, accountability, effectiveness, and coherence. Within the framework of the communication, the Commission designed proposals in order to improve the interaction of civil-society organizations with the European Commission. The proposals constitute commitments and obligations for the Commission, but also for the civil-society organizations. Notwithstanding the Commissions' objectives to improve openness, participation, and accountability in its interaction with civil society, the European Parliament reacted surprisingly critically to the Commission's reform proposals. An attempt is undertaken to understand the Parliament's negative reaction, drawing on European interest politics literature, and insights on the inter-institutional power struggle taking place at the European level. The project provides a unique opportunity to investigate the relationship between private interest consultation, information asymmetry and institutional power. It is expected that private interest consultation provides institutions with informational advantages that are crucial for the inter-institutional power struggle at the EU level. An empirical study based on a number of exploratory interviews with members of the Parliament and Commission officials is planned to investigate the root of conflict between the two institutions.

Project 2: New Modes of Governance in Europe – The Impact of the "Lamfalussy Committee" on European Governance

In order to respond rapidly and flexibly to the new requirements of EU policy-making, political decision-makers turn increasingly to what are known as "new modes of governance". These new modes of governance seek to avoid the prevailing "traditional" modes of governance, based on lengthy legislative processes, being only marginally – if at all – based on legislation and/or relying on private actors and the delegation of tasks to new public actors (regulatory committees) in policy formulation. An important development in this regard was the decision taken at the European Council in Lisbon in March 2000 to set up an independent Committee of Wise Men. Its aim was to reduce the backlog in the

EU securities market regulation in order to complete the integrated EU financial market by 2005. The committee became known in the media as the "Lamfalussy Committee", named after Baron Lamfalussy, the respected former president of the European Monetary Institute, who chaired the meetings of the independent committee. The Committee proposed that the EU regulatory process and the institutional framework have to be reformed and adapted to enable the speedy adoption of the required and often very technical legislative proposals in the securities sector. In the future, only the framework principles of legislation should be decided by the normal EU procedure (i.e., proposal by the Commission with the co-decision of the Council of Ministers and the European Parliament). The more detailed technical measures needed to implement the objectives of the framework principles are to be decided by a new comitology committee, the EU Securities Committee (ESC). It will be assisted by a newly established European Securities Regulators Committee (ESRC). Recently, this new regulatory and institutional infrastructure was not only endorsed by the EU institutions. In addition, it has been considered a model for the transformation of governance in other policy areas. This makes a thorough and detailed analysis of the new regulatory infrastructure in the EU securities sector a highly relevant research project.

Publications (since 2002)

Articles

Lobbying in de Europese Unie: Is er nog toekomst voor nationale belangengroepen? Res Publica, The Belgian Journal for Political Science 45 (4), 673-696.

The Democratic Legitimacy of Business Interest Representation in the European Union. Normative Implications of the Logic of Access. Preprint of the Max Planck Institute for Research on Collective Goods, Bonn, 2003/8.

A Theoretical and Empirical Study of Corporate Lobbying in the European Parliament. European Integration online Papers 7 (11), 2003.

Exchanging Access Goods for Access. A Comparative Study of Business Lobbying in the EU Institutions. European Journal of Political Research 43 (3), 337-369 (2004).

The Logic of Access to the European Parliament. Business Lobbying in the Committee on Economic and Monetary Affairs. Journal of Common Market Studies 42 (3), 473-495 (2004).

Book Chapters

Democratic Legitimacy and the Participation of Business Interests in European Governance. In: Civil Society and Legitimate European Governance. (Ed.) S. Smismans. Elgar, Cheltenham (forthcoming).

National Business Associations and European Integration. The Case of the Financial Sector. In: Governing Interests: Business Associations Facing Internationalization. (Eds.) W. Streeck, J. Visser, V. Schneider and J. Grote (forthcoming).

Zugangslogik in der Europäischen Union: der Fall des Europäischen Parlaments. In: Interessenpolitik in Europa. (Eds.) B. Kohler-Koch and R. Eising. Nomos, Baden-Baden (forthcoming).

Henry Farrell

Summary report

My current research focuses on three main topics. First, I am working on the governance of e-commerce and the Internet. Second, I am engaged in a project with Adrienne Héritier that covers relations among legislative actors in the European Union. Finally, I am working on the relationship between institutions and trust.

My work on the governance of e-commerce and the Internet stems from my article published in *International Organization* (2003). It has broadened from the study of relations between states and private actors in the area of privacy to a more general study of the origins and consequences of hybrid institutions. The first product of this next stage of research will be seen in an article commissioned for the *Annual Review of Political Science* next year, which provides an overview of the political science literature on the Internet. Later work will include at least two articles intended for prestigious peer reviewed journals. In addition to this, I am involved in a side project with Daniel Drezner (University of Chicago) on the political consequences of blogs. We have written a paper which has been described by Tyler Cowen (Head of Dept of Economics, George Mason University) as "at the very least … likely to become a mini-classic, maybe more" (http://www.marginalrevolution.com/marginalrevolution/2004/07/how_do_politica.html) and are currently in negotiation with a prestigious university press to prepare an edited volume on the topic.

My project on relations among institutional actors in the EU is being carried out jointly with Adrienne Héritier (EUI) and Carl-Fredrik Bergstrom (SIEPS). It is intended to provide an important new perspective on the development of international institutions that focuses on bargaining power and incomplete contracts as explanatory variables. The first stage of research has culminated in two articles, one in *Governance*, one forthcoming in *Comparative Political Studies*. The second stage will involve a special issue of *West European Politics,* which will, pending review, be edited by Adrienne Héritier and I. We confidently expect that our perspective will have a substantial impact on the field, providing, as it does, a coherent alternative to dominant alternative theories in the field.

My work on institutions and trust has led to articles in *Politics and Society* and *Comparative Political Studies* (forthcoming), as well as chapters in edited volumes. I am currently preparing an article on the general theory of the relationship between institutional compliance and trust together with Jack Knight. Finally, I am working on a book manuscript (projected date of completion, December 2004).

Mikaela Hansel

Summary Report

Swedish Waste Management: Extended Producer Responsibility and Liability for Remediation of Contaminated Land

As part of the institute's research program on waste management, this particular research project concentrates on the Swedish practice of managing solid waste. The report focuses on extended producer responsibility and liability for the remediation of contaminated land *de lege lata* and *de lege ferenda*. These selected aspects are of interest in that they exemplify how legal provisions are made operational.

The legislator has chosen to regulate not only consumers, individual producers, and present site operators, but also branch organizations, groups of producers, past site operators, as well as insurers. These actors have opted for voluntary approaches to implement the regulations. Against this background, the research has primarily been conducted through interviews with producers, producer responsibility organizations (PROs), site operators, and municipal and government officials. Hence, the study is built around actual situations and unique solutions that have evolved within the Swedish business community. This approach makes the thesis accessible not solely for scholars but for various practitioners within the waste-management field.

Extended producer responsibility aims at dealing with waste problems at an early stage in the production process, i.e., when designing a product, selecting materials, and manufacturing the goods. The concept adopts a cradle-to-grave approach in that the focus lies on the pre-consumer production process as well as on the post-consumer waste management in terms of waste treatment and disposal. Thus, the life-cycle stages go beyond the ownership of the product. The principle requires producers to take back free of charge the same kinds and amounts of products previously purchased by consumers. For producers, the most prominent issue is the additional and uncertain cost that this responsibility creates. The uncertainty is mainly attributable to the long period of time between the release of durables, such as cars, and the recovery of them. Rather than focusing on a command-and-control regulation, new incentive-based strategies are needed to ensure the financing of the obligation in it entirety.

Three credible solutions have evolved to implement the existing legislation on extended producer responsibility for packaging waste, paper, cars, electrical appliances and electronics, and batteries, while at the same time securing means for future recovery costs. Firstly, there are jointly owned recovery systems, set up by the Swedish business community and administered through PROs. The PROs organize the recovery operations and the funding thereof and can support both voluntary and mandatory take-back schemes. Secondly, there are producers who have chosen to remain independent of the PROs and manage the entire production process, distribution, and recovery themselves within their firms. Thirdly, a Swedish insurance company provides a recycling insurance, in which

producers pay an amount to a separate and independent fund that bears the financial burden of the recovery. Thus, the insurance replaces producers' individual obligation. The instrument of insurance is used as a steering device in order to enhance environmental protection and as a loss-spreading mechanism.

Similar to the waste management policy regarding extended producer responsibility, the liability regime for contaminated land also aims to allocate the responsibility for site remediation to several actors, not solely to the current operator. The liability system aims at securing means for future clean-up activities by requiring site operators to contribute to the environmental damage and/or clean-up insurance schemes and provide financial securities. The issue arises primarily in connection with permit procedures and in situations where undertakings go into bankruptcy. Securities may take the form of guarantees or blocked bank accounts. In addition to the mandatory insurance schemes included in the Swedish Environmental Code, there is a clean-up cost insurance, which covers costs arising from removal of debris.

The findings regarding both topics are mainly analysed from a legal viewpoint with the aim to provide guidelines and recommendations for the future. The legal discussion is complemented by economic analysis, a method which has proven especially helpful for explaining the insurance model.

Adrienne Héritier

Summary Report

1 Institutional change: This research focuses on the change and development of political institutions in Europe. It investigates intentional negotiated change (Intergovernmental Conferences), but also the emergence of informal institutional rules arising from the everyday application of existing constitutional rules. These informal rules may in turn lead to a transformation of the macroinstitutional constitutional rules. These two perspectives on institutional change have repercussions on the power of the involved formal actors and on the policy outcomes decided under the changing institutional rules. This research is conducted jointly with Henry Farrell, University of Toronto, and Carl Fredrik Bergström, University of Stockholm, and is funded by the Swedish Institute for European Policy Research in Stockholm. It has been submitted for publication as a special volume of *West European Politics*.

2 New Modes of Governance: This research focuses on new modes of governance in Europe (defined as policy formulation with the inclusion of private actors and only a marginal role of legislation). It seeks to conceptualize and theorize their emergence, their operation and their impact in terms of policy outcomes, but also in terms of the impact on existing more traditional forms of government and administrative structures, including patterns of democratic legitimation. This research is conducted in the context of the New Governance Integrated Project of Framework 6, funded by the Commission.

3 Regulation: The research on regulation investigates the processes of the liberalization of the utilities at the European and member state level. What were the underlying political processes and what role did Europe play in bringing them about in different member states? New regulatory structures emerged at the European and member state level, showing similarities and dissimilarities across countries and sectors, which are systematically described and explained in this work. So are the modes in which the new regulatory structures operate and the ways in which regulators cooperate across countries. The regulatory regimes are subject to a continuous process of revision and fine-tuning in view of the results obtained in the light of the defined policy goals, i.e., to introduce competition in sectors formerly dominated by public monopolies, while at the same time securing the broad provision of public services. This research is conducted jointly with David Coen, University College, London. It was funded by the Anglo-German Foundation and the Max Planck Society. It is also linked to the Project of the Deregulation of Transport Systems in the Mediterranean Countries (Euromed-project), financed by the Commission.

4 Corporate social governance in states with weak regulatory capacity: This research project has been jointly developed with Thomas Risse, Freie University, Berlin. It conceptualizes, theorizes, and empirically investigates the condition under which international firms contribute to the development of regulatory provisions and the administrative infrastructure capacity in states with weak regulatory capacity.

Publications 2003

Composite Democracy. The Role of Transparency and Access to Information. Journal of Public Policy 10, 814-833 (2003).

Containing Negative Integration. In: Die Reformierbarkeit der Demokratie. Innovationen und Blockaden. Festschrift für Fritz W. Scharpf. (Eds.) R. Mayntz and W. Streeck. Campus, Frankfurt 2003, 101-121.

with H. Farrell: Formal and Informal Institutions under Codecision. Governance 16, 577-600 (2003).

New Modes of Governance. Increasing Political Capacity and Policy Effectiveness? In: Law, Politics and Society. (Ed.) T. Börzel. Oxford Univ. Press, Oxford 2003, 105-126.

with Engel: Linking Politics and Law. Nomos, Baden-Baden 2003.

Katharina Holzinger

During the period covered by this report, I was primarily involved with two research projects. First, I finished my book on "Transnational common goods: strategic constellations, collective-action problems, and multi-level governance" (see abstract below). Second, I worked on the theoretical parts of an EU financed project, "Environmental Governance in Europe: The Impact of Trade and Institutions" (see project outline below).

From August 2002 to June 2003, I was a Jean Monnet Fellow at the Robert Schuman Centre at the European University Institute in Florence, Italy. During the fall semester 2003/2004, I had a professorship for modern political theory at the University of Duisburg-Essen. Since summer 2004, I have worked as a professor of government at the University of Hamburg.

Summary Report

1. Transnational Common Goods: Strategic Constellations, Collective-Action Problems and Multilevel Governance

The provision of transnational and global common goods has become increasingly important as a consequence of economic globalization and technological developments. This research project analyzed international financial markets and international environmental problems as examples of transnational common goods. The analysis starts by separating the attributes of common goods themselves and attributes which affect the conditions of their provision. All of these attributes influence the strategic constellation, which is thus not necessarily a prisoners' dilemma. The many possible strategic constellations can be subsumed under a small number of types of collective-action problems. For most of the types, political solutions are needed which build on collective decision-making and enforcement. Transnational and global common goods have to be provided within multilevel governance systems. Therefore, in the next step, the conditions under which and the ways in which the multilevel structure affect the strategic constellations are shown, and the chances for finding a solution to common goods problems are assessed.

2. Environmental Governance in Europe: The Impact of International Institutions and Trade on Policy Convergence (ENVIPOLCON)

Problem Context

It is widely acknowledged that policy ideas, concepts, and instruments converge not only within national political systems, but also across national borders. These effects have been observed in particular in the field of environmental policy, where striking similarities in the development of national, European, and global capacities for environmental pro-

tection have been observed. Examples range from the initial development of government institutions for environmental protection, such as environmental ministries or environmental agencies, to the more recent introduction of particular forms of regulation and policy instruments, such as ecological or energy taxes, private self-regulation (eco-audits, eco-labelling) or tradable emission rights.

In contrast to the widespread assumption that policy convergence takes place at the level of the lowest common denominator, the empirical data indicates that convergence patterns in the environmental field have been guided to a considerable extent by the developmental status achieved in environmental front-runner countries. The convergence of ideas, concepts, and instruments, therefore, has a significant impact on the effectiveness of environmental governance in multilevel systems. For example, with regard to the enlargement of the European Union, the impact of general processes of policy convergence on the accession countries' ability to adopt the acquis communautaire can hardly be underestimated.

Notwithstanding these observations, comparative research on policy diffusion and Europeanization has shown that convergence can hardly be considered as a dominant and uniform tendency which can be taken for granted. To explain the apparent variations in environmental-policy convergence, many factors have been identified, including the role of supranational and international organizations, international environmental regimes, regulatory competition between nation-states, the specific characteristics of particular policy instruments, institutions or approaches, and, finally, the capacities of states to adopt a certain policy. However, while important factors affecting policy convergence in the environmental field have been identified, we still have limited knowledge about the distinctive impact of these factors. What, for instance, is the impact of international institutions on environmental-policy convergence compared to the impact of economic interlinkage between countries and across different levels of government?

Only a systematic analysis of the determinants of policy convergence in the environmental field can lay the grounds for a comprehensive understanding of the governance implications of environmental-policy convergence.

Scientific Objectives

The primary objective of this research project is to investigate the degree of environmental-policy convergence across European countries and to identify the underlying driving forces. In this context, the particular emphasis is placed on three aspects:

To what extent and in which direction can we observe a convergence of national environmental policies in Europe over the last thirty years; i.e., since the implementation of an environmental policy at the national and international level?

What is the specific impact of economic and institutional interlinkages between nation-states in this respect? While policy convergence can have a variety of both international

and national causes, the focus of this project is on analysing and singling out the specific impact of the international and supranational context in which national policies are embedded.

Which consequences follow from this comparative assessment of the institutional and economic influences for environmental governance in Europe? In other words: Which means and forms of governance can be considered to be most effective in promoting environmental protection, both within and beyond the borders of the European Union?

In this context, the empirical focus is on the analysis of environmental-policy convergence across 24 European countries, including the member states of the EU, some Central and Eastern European accession countries.

To investigate the degree of policy convergence, in a first step a quantitative analysis will be carried out, investigating 66 different policies for the above-mentioned countries at four points in time (1970, 1980, 1990, 2000). The statistical analysis will be complemented by qualitative case studies with the objective of further elaborating and differentiating the theoretical model.

Funding and Consortium

The project is funded by the EU's Fifth Action Program from 1 January 2003 to 31 December 2005.

The project consortium consists of 14 researchers at Jena University (now Konstanz University), the Max Planck Institute for Research on Collective Goods, Bonn (now Hamburg University), University of Nijmegen, Netherlands, Free University, Berlin, and Salzburg University.

Guido Kordel

Summary Report

I. Labor Market and European Antitrust Law

(Arbeitsmarkt und Europäisches Kartellrecht. Carl Heymanns Verl., Köln 2004)

For decades, the relationship between the conduct of employers and employees on the labor markets in the European Community, on the one hand, and the antitrust provisions of the Treaty of Rome, on the other, received little attention in the legal literature or by the courts. In the cases Albany, Brentjens, and Drijvende Bokken, from 1999, the European Court of Justice for the first time had the opportunity to take a position concerning the relation between European competition law and labor law and the general validity of collective-bargaining agreements. Whether these agreements should actually be subjugated to regular antitrust scrutiny has been an intensely debated topic in the U.S. ever since antitrust emerged a century ago. In most European countries, however, this discussion was largely seen as being irrelevant. In Albany, Brentjens, Drijvende Bokken, and later on in the van der Woude case, the European Court of Justice, expanding substantially the experience gathered in other jurisdictions, recognized social law to be largely exempt from competition law: this represents a substantial limitation to the general scope of competition law.

This book criticises the courts approach as not being in accordance with basic principles of Community law. The analysis shows that the principle of competition is among the basic elements of Community law and that the Treaty makes it the paramount and prior instrument for achieving the goal of a common market. This holds also for the labor market in the European Union. Antitrust policy, which serves the principle of competition, must thus not be totally ignored when social and labor policy goals are at stake. The Court's new labor exemption for the conduct of employers and employees is therefore too broad. From an economic perspective, it is not indispensable for reaching social and labor policy goals, while cutting short from the outset any discussion on the welfare effects of collective bargaining, collective agreements, and other forms of concerted activity on the labor market.

II. Behavioral Law and Economics applied to German Labor Law

Von Äpfeln und Birnen – Ökonomische und verhaltenswissenschaftliche Gründe für eine Neuinterpretation des § 4 Abs. 3 Tarifvertragsgesetz. Working Paper (forthcoming):

In this paper, I apply the behavioral law-and-economics approach to a provision of the German statute regulating collective bargaining and collective-bargaining agreements (§ 4 Abs. 3 *Tarifvertragsgesetz*). The paper shows that the interpretation of this provision by the German courts is neither in accordance with a traditional law-and-economics ap-

proach nor with behavioral law and economics. The principle of propitiousness (*Günstigkeitsprinzip*), which is at the heart of § 4 Abs. 3 *Tarifvertragsgesetz*, implies that an employer and employee can deviate from a collective-bargaining agreement by a bilateral contract only when the deviation is beneficial for the employee. A traditional law and economics analysis sees the significant market power of the employer and the resulting weak bargaining position of the employee on the labor market as the only reason for protecting the employee by applying this principle of propitiousness. According to traditional law and economics, only when there is evidence for such labor market power should the application of § 4 Abs. 3 of the *Tarifvertragsgesetz* forbid bilateral deviations from a collective-bargaining agreement. A behavioral law-and-economics approach, however, shows that § 4 Abs. 3 of the *Tarifvertragsgesetz* also should be applied when findings from the behavioral economics literature imply that employees are in need of protection because they are especially likely to exhibit systematic deviations from rational behavior, which might lead to myopic bilateral contracts with employers.

Publications (since 2002)

Books

Arbeitsmarkt und Europäisches Kartellrecht. Carl Heymanns Verl., Köln 2004.

Articles

Das Günstigkeitsprinzip aus der Sicht der ökonomischen und verhaltenswissenschaftlichen Analyse des Rechts. Zeitschrift für Arbeitsrecht (forthcoming 3/2005).

Missbrauch einer marktbeherrschenden Stellung durch Verwendung zivilrechtswidriger AGB "im Auftrag des Bundes". Die neuen AGB der Toll Collect GmbH aus Sicht des deutschen und europäischen Kartellrechts. Zeitschrift für Wettbewerbsrecht (forthcoming 4/2005).

Book Reviews, Comments, and Miscellaneous

Comment on BGH Urteil vom 30.3.2004, KZR 1/03, "Der Oberhammer". Entscheidungen zum Wirtschaftsrecht 20, 1033-34 (2004).

Chrysostomos Mantzavinos

Summary Report

Learning, Institutions, and Economic Performance. Perspectives on Politics 2, 75-84 (2004) (with D. C. North and S. Shariq)

In this article, we provide a broad overview of the interplay among cognition, belief systems, and institutions, and how they affect economic performance. We argue that a deeper understanding of institutions' emergence, their working properties and their effect on economic and political outcomes should begin from an analysis of cognitive processes. We explore the nature of individual and collective learning, stressing that the issue is not whether agents are perfectly or boundedly rational, but rather how human beings actually reason and choose, individually and in collective settings. We then tie the processes of learning to institutional analysis, providing arguments in favor of what can be characterized as "cognitive institutionalism." Besides, we show that a full treatment of the phenomenon of path dependence should start at the cognitive level proceed at the institutional level, and culminate at the economic level.

"Naturalistic Hermeneutics", Cambridge University Press (2005)

For a few decades, a philosophical position has been continuously increasing in popularity that views action and its by-products as non-susceptible to the usual scientific standards. This philosophical position is based on the fact that human actions are meaningful and thus that texts and other by-products constitute meaningful material; it further maintains that it is problematic or impossible to apprehend meaning with the methods of the natural sciences. In the strong version, the problematic of meaning is over-accentuated; the thesis is even defended that there are only nexuses of meaning in the world, i.e., that the totality of facts in the world are endowed with meaning, which is to be apprehended. This radical thesis normally involves the text metaphor, which is transferred to the world as a whole, and, it is correspondingly maintained that the text model is generally applicable. In the weak version, the existence of causal nexuses is commonly admitted for the realm of nature, but for societal reality only nexuses of meaning are thought to be important. This is, in principle, a variant of the old dualism of man and nature. In both versions, the accentuation of the meaningful components of the facts constituting the world has two significant implications: understanding is propagated as the adequate way to access these meaningful components, and hermeneutics is viewed as the special discipline to deal with this way of accessing reality.

This book proposes a way to deal with the problematic of meaning based on methodological naturalism, in accord with which the occurrences in the societal world can be viewed as natural events, in continuity with other natural events. Therefore, in dealing with such occurrences, there is no need for a different method from that used in the natu-

ral sciences. In all areas in which increasing our knowledge about the real world can be presupposed as an aim, hypotheses can be formulated, consequences can be drawn by deduction, and these can be tested against empirical data. This operation, known as the hypothetico-deductive method, is a methodological procedure, which is in principle applicable to every subject matter, whether it be meaningful or not. Since the analytic philosophy of science has been too stepmotherly in its treatment of the concrete problems that come up when dealing with meaningful material, my attempt is to work out the concrete application of the hypothetico-deductive method for this case. It is shown here that, with the help of the hypothetico-deductive method, the apprehension of the meaning of actions as well as the apprehension of the meaning of texts can take place without any difficulty, whereas the method of understanding propagated by anti-naturalism proves to be of no avail.

The institutional-evolutionary antitrust model (under review)

This article puts forward an antitrust model that builds upon the results of new institutional economics and evolutionary economics. Two things are necessary for this model: foundations in the experimental sciences; and considerations of the treatment of norms. First, the experimental-science foundations are elucidated; here it becomes clear that competition is to be analysed as an evolutionary process, which proceeds within a framework of rules. Then the question of the purposeful treatment of norms is dealt with, along with the weaknesses of the current normative conceptions in the study of political economy, i.e., the welfare economy and the constitutional economy are highlighted, and it is argued that the principle of critical reason is to be applied instead. Building on this, the outlines of the institutional-evolutionary antitrust model are sketched out, and a plead is made for a rule-guided competition policy, primarily supported by per se prohibitions.

Honors

Best Dissertation Prize of the University of Tübingen for the Dissertation of the Faculty of Philosophy and History 2004: "Hermeneutische Irrwege und Auswege"

Publications (since 2002)

Books

Naturalistic Hermeneutics. Cambridge Univ. Press, Cambridge 2005.

Naturalistische Hermeneutik. Mohr Siebeck, Tübingen 2005 (forthcoming).

Articles

Beyond Homo Oeconomicus and Homo Sociologicus. Reprint from chapter 4 of Individuals, Institutions, and Markets. In: The European Tradition in Qualitative Research. (Eds.) R. Boudon, M. Cherkaoui, P. Demeulenaere. IV. SAGE Publications, London 2003, 421-426.

with D. C. North and S. Syed: Learning, Institutions and Economic Performance. Perspectives on Politics 2 (1), 75-84 (2004).

Das institutionenökonomische-evolutionäre Wettbewerbsleitbild. Jahrbücher von Nationalökonomie und Statistik 225, 205-224 (2005).

Comment on Nancy Cartwright's 'Against the System'. In: Is there Value in Inconsistency (Conference Volume). (Eds.) L. Daston and C. Engel. Nomos-Verlagsgesellschaft, Baden-Baden (forthcoming).

Interpreting the Rules of the Game. Law and Public Policy (forthcoming).

Tradition and Evolution as a Problem in the Theory of Institutions (in Greek). In: Nefsis (forthcoming).

What Kind of A Problem Is The Hermeneutic Circle. Paper presented in the Joint Sessions of the Aristotelian Society and the Mind Association. Manchester, UK, 7.-10. July 2005.

The institutional-evolutionary antitrust model (under review).

The role of definitions in institutional analysis (under review).

Markt und Wettbewerb. Working Paper. Department of Economics, University of Freiburg, 1995.

Federalism and Individual Liberty, Working Paper, Department of Economics, University of Freiburg, 1995.

Margaret McCown

General Research Overview

My current and future research plans represent a well-integrated sequence of projects examining my central agenda of "behavioral factors, collective actors and institutional solutions to common goods problems". This report updates the reader on my work accomplished whilst a fellow at the MPI Bonn and outlines my future research plans.

I approach my research agenda from several directions, some of which lay emphasis on the interactions typical of collective actors, whilst others give greater attention to characteristic features of such actors, or examine the institutional environments in which they function. I have concentrated on these questions in the legal setting in good part because of my interest in the relationship between argumentation, institutions and actors' strategic pursuit of preferred outcomes under them. The behavioral foundations of argumentation offer a particularly rich context in which to examine the cognitive factors that influence collective actors' choices, not only internally, but also in their relations with other collective actors. Where argumentation concerns the application and interpretation of institutions, it can endogenize rule change. I have also focused extensively on the European Union as a compelling example of an institutional framework seeking to provide a variety of common goods in a transnational setting.

Summary Report

The ways in which collective actors, in this case EU supranational bodies, compete with each other in both the political and legal setting in order to get their preferred formulation of rules institutionalized was the stimulus for a set of papers on separation-of-powers disputes. One paper, now published in the Journal of European Public Policy, examined the litigation strategies deployed by the European Parliament against other EU supranational actors in its attempts to expand its power. A second, joint paper (with Hae-Won Jun of St. Antony's College, Oxford) presents a spatial model of European Court of Justice decision-making in EU inter-institutional disputes and tests hypotheses drawn from it using a data set I constructed for that project. This paper was presented at the European Union Studies Association Conference in April 2003 and the American Political Science Association Conference in August 2003; we are currently editing the last part of the paper to take into account coding changes we made to the data and plan to submit it to journals before the end of the month. A final paper examines separation-of-powers conflicts between EU organizations and EU member states and is under review with a European politics journal.

A second area of research examines strategies that collective actors deploy in seeking policy change. A first paper examined intellectual property rights – a classic example of

institutional regulation of a common good – at the EU level and the litigation strategies used by firms in order to shape EU rules in their preferred direction. This paper was presented at the EU studies association conference in Nashville. A co-authored book chapter with Alec Stone Sweet (of Nuffield College, Oxford/Yale Law School) examines similar questions and the responsive ECJ decision-making in the context of free-movement-of-goods disputes in the EU.

The relationship between argumentation over the form and application of rules and institutional change is pervasively important in judicial politics. Legal argumentation and the ways in which forcing actors to frame their political claims as rule-based legal assertions makes a difference to the resolution of disputes is a long-standing interest of mine. One product of this line of research is another co-authored chapter with Stone Sweet, on discretion and precedent in European Union law, which also makes use of the data set constructed for my doctoral research. This line of research will be extended in the coming year.

Research Agenda

My plans for future research are already well underway. My focus on collective actors' strategies in both the legal and political settings and how their organizational form influences their strategies will form a prominent part of these research projects. A rather new focus will be the addition of interest groups to the set of collective actors that I study.

In June of 2004, I wrote a paper with Pieter Bouwen (formerly of the MPI Bonn, now with the European Commission) examining the factors underpinning business interests' choices of litigation versus lobbying strategies. We presented the paper at the ECPR European Union Politics Conference in Bologna and aim to have it under review with the ELOP online journal within the next few weeks and with a traditional journal by the end of the summer. Towards the end of the summer, I will be drafting a paper for the institute's working group on corporate actors which is likely to focus on how the organizational form of interest groups influences their choice of litigation strategies aimed at securing institutional change. Continuing the focus on interest groups, I am currently writing a comparative paper examining the influence of amicus curiae briefs to the Supreme Court and European Court of Justice. I am in the process of constructing my third court data set for this project. The paper will be presented at the American Political Science Association Conference.

I also have plans for work that will exploit existing data sets. I have begun adding some extra data to my existing database of precedent citation in ECJ preliminary reference cases in order to develop a quantitative paper studying factors underpinning courts' decisions to make recourse to precedent-based decisions.

The data set on separation-of-powers disputes in the EU is another major research project of from this year that may carry over into future research. Now that it is finally com-

pleted, my co-author and I are exploring the possibility of merging it with part of a second data set on European Parliamentary voting recently made available by the LSE and supplementing it with data on internal decision processes in the Council of Ministers and Commission. This would allow us to support a subsequent project which would examine internal decision processes of EU actors in the context of inter-institutional disputes. Breaking down the unitary actor assumption in EU politics is a major goal of several research agendas and has proven to be quite fruitful but has never been investigated in a way such that internal decision processes of multiple actors are studied simultaneously.

In short, my research continues along very similar trajectories to that defined in my earlier work, but with the focus on judicial decision-making being complemented by studies of interest groups, as another prototypical collective actor. The turn towards studying interest groups allows me to study the choices of private collective actors in highly politicized settings, in contrast to the public ones in my separation-of-powers work. This is theoretically important and also builds interdisciplinary bridges with the corporate actors research group at the institute. My continuing interest in the relationship between argumentation and institutional change provides the most direct link to the behavioral part of the institute's overall research program, and the focus on the EU maintains a connection with multiple common goods issues.

Publications

The European Parliament before the Bench. ECJ Precedent and EP Litigation Strategies. Journal of European Public Policy. 10, 974-95 (2003).

with A. Stone Sweet: Discretion and Precedent in European Law. In: Judicial Discretion in European Perspective. (Ed.) O. Wiklund. Kluwer Ltd., Stockholm 2003, 84-114.

with A. Stone Sweet: Free Movement of Goods in the European Union. In: The Judicial Construction of Europe. (Ed.) A. Stone Sweet. Oxford University Press, Oxford 2004.

Judicial Law-Making and European Integration: The European Court of Justice. (Ed.) J. Richardson. 2nd ed. Routledge, London (forthcoming).

Data sets (not yet publicly available):

Data set on European Court of Justice Citation Practices in Preliminary Reference Rulings, 1961-1998. Nuffield College, University of Oxford (2002; updated 2004).

with H.-W. Jun: Data set on Argumentation in Inter-Institutional Disputes in the EU. Max Planck Institute for Research in Collective Goods and St. Antony's College, Oxford (2003, revised 2004).

Comparative Data set on Amicus Curiae Briefs to the US Supreme Court and ECJ (in progress 2004).

Christian Schubert

Summary Report

Urban Change and the Law – An Enquiry into the Economic Rationale of Land-use Law

Property rights concerning land use are subject to intense regulation almost everywhere in the industrialized world. This holds within densely populated urban agglomerations in particular, where conflicts between incompatible land uses are ubiquitous. In Germany, for instance, over the last 100 years, a complex web of private and public law regulations (*Baurecht*, including both nuisance and zoning law) has developed that constrains land-use decisions of individual urban landowners, regulates land-use conflicts, and influences the development of urban structures. Recently, this *Baurecht* has come under increasing critical scrutiny. It is widely regarded as (i) an imprecise and ineffective tool for influencing land-use decisions and urban development; (ii) a source of inefficient and unfair rent-seeking insofar as it artificially restrains the supply of real property; (iii) a stumbling block for corporate investors' sitting decisions, and finally (iv) as undemocratic in prescribing hierarchical procedures for settling land-use conflicts.

In response to this critique, a far-reaching reform is under way that attempts to make German land-use law more "decentralized", "market-like" and "cooperative". The reform has been inspired mainly by economists relying on insights from law and economics (Schatz 1996). Starting with a seminal paper by Coase (1960), the law and economics school has tried to develop "rational" legal rules for coordinating individual land use (Cooter and Ulen 1999). In contrast, the present thesis takes an evolutionary economics perspective in trying to shed some light on the economic rationale of this body of law. It argues that its function is to adjust the institutional underpinnings of complex system dynamics in a way that is generally agreeable, rather than to provide, in a Coasean sense, for the efficient allocation of a given and closed set of land-use rights.

According to Coase (1960), if transaction costs are sufficiently low, land-use conflicts can be resolved efficiently through decentralized bargaining by the parties involved who hold superior information about the true costs and benefits of alternative real property-rights allocations. However, in contrast to that ideal, in real-world conflict settings, parties have repeatedly been observed either to rely on informal social norms instead of decision-theoretic bargaining concepts or to refuse to bargain at all, even if transaction costs were relatively low (Ellickson 1995). On closer inspection, it turns out that even in Coase´s original model, i.e., at the theoretical level, asymmetrically informed parties involved in a land-use conflict are stuck in a bilateral monopoly. Hence, it would be rational for them to engage in (wasteful) strategic threats and counter-threats that make it unlikely to ever reach a mutually beneficial property rights exchange (Schlicht 1996).

Moreover, in contrast to the law and economics' static concept of the economic system under consideration, urban agglomerations are open social systems that (i) display com-

plex non-linear dynamics and (ii) generate endogenous change and novelty (Boschma and Lambooy 1999, Krugman 1998). Such conditions can better be analysed by means of theoretical tools used in evolutionary economics. Accordingly, political and judicial decisions about the allocation of land-use rights can be regarded as institutional interventions into an ongoing process of economic self-organization. Urban change is an evolutionary phenomenon.

What does this mean? First, the structural change of complex urban systems is *path-dependent*. Firms often prefer to locate where other firms have settled before; private households prefer to buy or rent houses near other households with certain characteristics (and to avoid households with other "undesirable" characteristics), etc. This interdependency causes positive feedback loops, i.e., self-augmenting dynamics.

Second, many individual land-use decisions are interdependent in the sense described above for an *epistemic* reason: Firms and private households attempt to exploit highly specific *knowledge spillovers* by locating near certain other land users. Geographical proximity makes it easier to learn about costs and benefits of alternative locations by observing other agents´ experiences. Hence, the key "social welfare contribution" of urban agglomerations does not consist in maximizing the aggregate land rent of a given geographical area; rather, it consists in the exploration of new (and the exploitation of given) productive knowledge spillovers that are typically observed within densely populated areas (Anas et al. 1998).

Two policy implications flow from these insights. First, the processes of urban change should allow spatial knowledge spillovers to be explored and exploited; thus, individual land users should be given the maximum number of autonomous opportunities that are compatible with their neighbors´ analogous autonomy. They should be free to try out innovative land-use combinations. Second, the spatial macro-patterns resulting from the interplay of individual land-use decisions may however often be assessed to be "undesirable" by the individuals concerned. This negative evaluation should be accounted for in some way. As a rule, individual land users are subjectively "unsatisfied" with the macro-results if the latter imply negative distributional effects. Note that this problem of "spontaneous disorder" (Schelling 1978) can be observed with economic innovations in general (see Witt 1996). Thus, the normative dimension of urban change has an epistemic ("Hayekian") and a distributional aspect – the legal rules governing urban change should be analyzed accordingly.

The two normative ideas just mentioned can be integrated into an overarching conceptual framework if a *contractarian* viewpoint (Vanberg 1999) is adopted. Then, the (legal) rules of the market game are judged as legitimate if they can be rationalized as being part of a social contract that is agreed upon by all individuals from behind a "veil of ignorance".

Yet, the contractarian approach is not compatible *per se* with an evolutionary perspective on economic systems. To elaborate upon an early criticism on the social contract methodology by the social philosopher David Hume, any reasoning about which rules of the

game should be regarded as "generally agreeable" has to start from the given informal institutional background of a given society. Contractarian models and conclusions are, then, unavoidably historically and culturally contingent. Moreover, from an evolutionary viewpoint, the urban system's knowledge-processing capacity ought to be maintained. What is more, collective decision-making procedures should be evaluated according to their capacity to generate and diffuse new (scarce) knowledge about the effects of legal rules.

Within the existing contractarian literature, one approach devised by the political philosopher, John Rawls (1971/1995), is arguably compatible with an evolutionary world view. For Rawls proposes a specific procedure to develop (i) a "veil of ignorance" model and (ii) concrete statements about the (hypothetical) capacity of policy statements to command general assent. He develops (i) and (ii) by *endogenizing* the social contract model (instead of constructing it in an aprioristic way). The agents' moral common sense, after having been channeled through a public deliberation process, serves as the basic substantive instruction for the specification of the social contract. Collective decision-making procedures (such as, e.g., administrative procedures, public hearings, and lawsuits) are then to be evaluated according to their capacity to organize such a public deliberation process. In this light, the economic analysis of law undergoes a fundamental refocusing: Legal rules are "rational" if they (i) establish a decision-making procedure that generates generally agreeable "rules of the game" in the Rawlsian sense, or (ii) if they can be rationalized as the plausible outcome of the application of a Rawlsian veil of ignorance.

How can the very abstract reasoning of the contractarian approach outlined above be applied to concrete legal regulation issues in the context of (German) land-use law?

The key task of (land-use) law is seen here to consist of maintaining an institutional framework that allows for the decentralized exchange of real property rights in a way that is generally agreeable to all parties affected. Put differently, the task is to *organize a market* under difficult conditions, namely, the conditions of an endogenously evolving open system whose future development can only imperfectly be anticipated. To exemplify what this means, the thesis briefly discusses three controversial land-use questions: first, the rationale of legal constraints on the content of contractual agreements between individual land-use developers and local planning boards ("essential nexus doctrine"; *Koppplungsverbot*); second, the problem of how to adequately compensate individual landowners for regulatory encroachments upon their property rights; third, the question of how to decide on the siting of undesired "not-in-my-backyard" facilities (e.g., factories and incinerators).

The gist of the argument is that the economic analysis of law has to be reoriented in light of what we know about the evolutionary "ontology" of those social systems (such as urban systems), which are the object of real-world legal regulation. Within the process of open-ended, endogenous urban change, the institutional underpinning of a market order can only be maintained by continuously adjusting real property rights in a way that ac-

counts for both the perceived "fairness" of distributional effects and the intrinsic weight of individual rights. From an evolutionary point of view, the contractarian methodology has to be modified in order to base the normative evaluation of legal rules on the moral common sense (the "social preferences") of the individuals concerned. Then, the set of collective-decision mechanisms should be assessed according to its capacity to reach this goal.

Publications (since 2002)

Wissensgehalt und Interpretation von Routinen. Comment on M.C. Becker, Wiederkehrende Handlungsmuster, Rekonstitutivität und Heuristiken. In: Perspektiven des Wandels: Evolutorische Ökonomik in der Anwendung. (Ed.) M. Lehmann-Waffenschmidt. Metropolis, Marburg 2002, 489-496.

Hayek and the Evolution of Designed Institutions: A critical assessment. In: Hayek's Theory of Cultural Evolution. (Ed.) J. Backhaus. Elgar, Cheltenham (forthcoming 2006).

with G. v. Wangenheim: Introduction: Institutional Design, Social Norms and Preferences in an Evolving Economy". In: Evolution and Design of Institutions. Routledge, London (forthcoming 2006).

Evaluating designed institutions from an evolutionary perspective. In: Evolution and Design of Institutions. Routledge, London (forthcoming 2006).

with G. v. Wangenheim (eds.): Evolution and Design of Institutions. Routledge, London (forthcoming 2006).

with C. Cordes: Towards a Naturalistic Foundation of the Social Contract. Papers on Economics & Evolution # 05XX (2005), Max Planck Institute for Economics, Jena.

Marco Verweij

Summary Report

In my research, I attempt to make a contribution to the attainment of two goals. First, I try to contribute to what I believe is a very interesting new theoretical synthesis slowly emerging across the social sciences (and beyond). This new synthesis combines the best in social and political science (the "cultural theory" developed by Mary Douglas, Michael Thompson, Aaron Wildavsky, and others, as well as the "relational models theory" developed by Alan Fiske, Nick Haslam, and their colleagues), social neuroscience, human complex systems (i.e., the application of non-linear mathematics in the social sciences), the latest in evolutionary theory and studies of animal social complexity (e.g., the work of Frans de Waal and colleagues), and the latest versions of game theory. I believe that, perhaps for the first time, it is possible to develop social and political theory that is cumulative (i.e., based on the works of the "classical" social theorists such as Weber, Durkheim, Marx, Toennies, Evans-Pritchard, Parsons, etc.), parsimonious, relevant for policy- and decision-making and supportive of human rights, and linked in interesting and novel ways to various fields in the natural sciences.

I have written various articles on this emerging synthesis, including: 'Towards a Theory of Constrained Relativism: Comparing and Combining the Work of Pierre Bourdieu, Mary Douglas and Michael Thompson, and Alan Fiske' (in *Sociological Research Online*); and 'Michael Thompson's Contributions to Making Social Science More Social and Scientific' (in *Innovation*). The book *Clumsy Solutions for a Complex World* is an effort to spell out the implications of this emerging theoretical synthesis for governance and policy-making.

Second, I have been wrestling with the question of how to improve decision-making regarding international, or even global, issues. The topics that I have been studying in depth are: water pollution (of the river Rhine and the North American Great Lakes); climate change; development aid and the Millennium Development Goals; and the US-led invasion in Iraq. For all these cases, I attempt to show that (1) from a wide variety of normative points of view, decision-making has been severely lacking; and (2) this has been caused the exclusion and repression of certain policy perspectives from the processes of decision-making. Some of my publications in this area include: 'Why Is the River Rhine Cleaner than the Great Lakes (Despite Looser Regulation)?' (in *Law & Society Review*); 'Deliberately Democratizing Multilateral Organization' (in *Governance*), and 'Curbing Global Warming the Easy Way: An Alternative to the Kyoto Protocol' (in *Government & Opposition*).

During my time at the Max Planck Institute for Research on Collective Goods (September 1998-September 2003), I had ample opportunity to pursue my two ambitions, and I am very grateful to have been a part of such a pleasant and productive community of researchers.

E. Conferences and Workshops

E. Conferences and Workshops organized by the Max Planck Institute for Research on Collective Goods

2002

Regulation and the State: Process and Impacts
JEPP Special Issue, 14-15 January 2002, Bonn

Adrienne Héritier, Max Planck Project Group Bonn
"After Liberalization: Private Actors Providing Public Services?"

Fabrizio Gilardi, Institut d'Etudes Politiques et Internationales Université de Lausanne
"Policy Credibility, Interdependence and Delegation of Regulatory Competencies to Independant Agencies (Quantitative Analysis Covering Several European Countries)"

Vivian Schmidt, Institut d'Etudes Politique Paris
"Europeanization and the Mechanics of Economic Policy (Overview of Transformation Processes in Belgium, France and Germany)"

Alexandre Serot, European University Institute, San Domenico di Fiesole
"The Unimportance of Institutions: Pricing Policies in Telecommunications"

Mark Thatcher, London School of Economics
"Delegation to Independent Regulators and its Consequences (Britain, France, Germany and Italy)"

Frans van Waarden, Universiteit Utrecht
"Markets, States and Courts: Competition Policy in Europe"

Heuristic Workshop Max Planck Institute for Human Development Berlin
11-12 February 2002, Berlin
Together with the Researchers from the Max Planck Institute for Human Development and Gerd Gigerenzer, Berlin

Christoph Engel, Max Planck Project Group Bonn
"The Bonn Project and How it is Linked to Berlin Work"

Yaniv Hanoch, Max Planck Institute for Human Development Berlin
"Informed Consent and Statistical Representation"
Stephanie Kurzenhäuser, Max Planck Institute for Human Development Berlin
"Informing the Public About Health Risks: Open Questions"

Stefan Magen, Max Planck Project Group Bonn
"Debiasing as a Governmental Task"

Frank Maier-Rigaud, Max Planck Project Group Bonn
"The Role of Choice in the Voluntary Provision of Public Goods: An Experimental Analysis"
Richard McElreath, Max Planck Institute for Human Development Berlin

"Bounded Rationality is Endogenous"
Stefan Okruch, Max Planck Project Group Bonn

"The Adaptive Policy-Maker's Toolbox – Consequences of the Policy-Maker's Adaptive Toolbox"

Indra Spiecker genannt Döhmann, Max Planck Project Group Bonn
"State Action in the Face of Uncertainty"

Herstellung und Darstellung
[Generation and Representation]
16 -17 May 2002, Tutzing
Together with Wolfgang Prinz, Max Planck Institute for Human Cognitive and Brain Sciences, Department of Psychology Munich

Tanja Börzel, Max Planck Projekt Group Bonn
"Discourse Theories as a Conceptual Tool for Assessing the Importance of Representation in Political Process"

Christoph Engel, Max Planck Projekt Group Bonn
"Generating and Representing Judicial Decisions"

Friedrich Försterling, University of Munich
"Perceived Causality"

Horst Hegmann, University of Witten/Herdecke
"The Distinction between Generation and Representation in Economics"

Sabine Maasen, University Basel
"Scripts as Interfaces between the Generation and the Representation of Decisions"

Martin Morlok, FU Hagen
"Generating and Representing Judicial Decisions"

Fritz Strack, University of Würzburg
"The Reflective – Impulsive Model of Human Behaviour"

Linking Political Science and the Law
24-25 May 2002, Bonn

Matthew Adler, University of Pennsylvania Law School
"Agenda Setting and Problem Definition: Can they be Constitutionalised?"

Christoph Engel/Henry Farrell, Max Planck Project Group Bonn
"Productively Organising International Co-Existence. The Prime Challenge for Internet Governance"

Christoph Engel, Max Planck Project Group Bonn
"The Constitutional Court – Applying the Proportionality Principle – As a Subsidiary Authority for the Assessment of Political Outcomes"

Tom Heller, Stanford Law School
"Lawyers and Political Scientists: How Much Common Ground?"

Adrienne Héritier/Leonor Moral Soriano, Max Planck Project Group Bonn
"Court Imposed Political Arenas: Differences in Terms of Policy Outcomes"

Thomas Risse, Freie Universität Berlin
"Ground, Law and Politics Beyond the Nation-State: Areas of Conversation and of Common"

Jens-Peter Schneider, University of Osnabrück
"Solving Conflicts and Securing Democratic Legitimation in the Energy Sector: A Legal Perspective on Associations' Agreements as a Conflict Solving Mechanism"

Henri Tjiong, Max Planck Project Group Bonn
"Policy Formulation in a Corporatist Setting: The Case of the Dutch Covenant on Waste Management"

Causes and Management of Conflicts (for details see C.II.2.5)
20th Seminar on New Institutional Economics
20-22 June 2002, Wörlitz

Rationality Workshop
8-9 October 2002, Lohmar

Christoph Engel, Max Planck Project Group Bonn
"Behavioural Analysis of Common Goods Problems and Their Solutions"

Thomas Baehr, Max Planck Project Group Bonn
"Verhaltenssteuerung durch Ordnungsrecht" [Behavioral Steering through Command-and-Control Legislation]

Martin Beckenkamp, Max Planck Project Group Bonn
"Rational Unreason and Irrational Reason"
Frank Maier-Rigaud, Max Planck Project Group Bonn
"Are Findings in Social Dilemma Experiments too Pessimistic? Assignment Versus Choice in a Prisoners' Dilemma Experiment"

Heike Hennig-Schmidt, University of Bonn
"Neutral vs. Loaded Instructions in a Bribery Experiment"

Dorothee Schmidt, Max Planck Project Group Bonn
"Die Anwendung beschränkter Rationalität in der Gesundheitsnachfrage" [Health Demand and The Application of Bounded Rationality]

Chrysostomos Mantzavinos, Max Planck Project Group Bonn
"Challenging Hermeneutics"

Bounded Rationality
21-22 November 2002, Bonn
Together with Max Planck Institute of Economics Jena

Martin Beckenkamp, Max Planck Project Group Bonn
"The Relevance of Knowledge in Social Dilemmas"

Melanie Bitter, Max Planck Project Group Bonn
"Game Theoretic Mechanisms for Information Revelation – an Admissible Tool for Public Administration?"

Christoph Engel, Max Planck Project Group Bonn
"Behaviourally Informed Design of Institutions for the Provision of Common Goods"

Luis González, Max Planck Institute Jena
"Constitutional Order and Bureaucratic Efficiency"

Werner Güth, Max Planck Institute Jena
"Perfect or Bounded Rationality? Some Facts, Speculations and Proposals"

Vittoria Levati, Max Planck Institute Jena
"Explaining Private Provision of Public Goods by Conditional Cooperation – An Evolutionary Approach"

Frank Maier-Rigaud, Max Planck Project Group Bonn and Vittoria Levati, Max Planck Institute Jena
"Ruling out Conditional Cooperation in Public Goods Experiments"

Axel Ockenfels, Max Planck Institute Jena
"Bridging the Trust Gap in Electronic Markets - A Strategic Framework for Empirical Study"

Katinka Pantz, Max Planck Institute Jena
"An Experimental Study of the Network Formation Game"

2003

Clumsy Solutions for a Complex world
Workshop by the Max Planck Project Group on Common Goods Bonn and the ESRC, Said Business School, University of Oxford
4-6 April 2003

John Adams, University College London
"How Safe are Safety Seat Belts?"

Donald Braman, Yale Law School
"More Statistics, Less Persuasion: A Cultural Theory of Gun Control Perceptions"

Dipak Gyawali, Ministry of Water Resources Kathmandu, Nepal
"Viable and Unviable Hydro Policies: An Example from the Himalaya"

Susanne Lohmann, University of California
"Is it a Wall, Snake, Brush, Tree, Fan or Spear? Buddha's Parable of the Elephant and the Six Blind Men Applied to the American University"

Joanne Linnerooth-Bayer, International Institute for Applied Systems Analysis, Austria and Anna Vari Hungarian Academy of Science, Budapest
"Floods and Loss-Sharing: A Clumsy Solution from Hungary"

Steve Rayner, University of Oxford and Mike Thompson
"What is Clumsiness?"

Tommy Tranvik, University of Bergen and Per Selle University of Bergen
"Is Encryption Making the Internet Virtually Clumsy?"

Marco Verweij, Max Planck Project Group Bonn
"Forget the Kyoto Protocol: Curb Global Warming Instead"

Janine Wedel, George Mason University Arlington
"The Strange Case of Western Aid to Eastern Europe"

Christoph Engel, Max Planck Project Group Bonn, Richard Ellis Willamette University and Christopher Hood, University of Oxford
"Clumsy Conclusions"

The Generation and Distribution of Knowledge
21st Seminar on New Institutional Economics
25-28 June 2003, Wienhausen
Together with Urs Schweizer, University of Bonn

Paul David, Stanford University
"IPR Protections and the Prospective Collapse of the Public Domain Foundations of Modern Science"

Graeme Dinwoodie, Chicago-Kent College of Law
"The Role of Private Lawmaking in Establishing the Norms of International Copyright Law"

Rebecca Eisenberg, University of Michigan
"Reexamining FDA Regulation from an Innovation Policy Perspective"

Thomas Gehrig, University of Freiburg
"Organisational Form and Information Acquisition"

Ulrich Kamecke, Humboldt University Berlin
"On the Dynamic Justification of R&D Joint Ventures"

Roger Noll, Stanford University
"Reconciling Copyright and Antitrust"

Margaret Jane Radin, Stanford University
"The Decline of the Public Dimensions of Property and Contract in the Digital Environment"

Paolo Saviotti, Institut National de la Recherche Agronomique (INRA), Grenoble
"Considerations about the Production and Utilization of Knowledge"

Inconsistency Conference (for Details see C.II.2.4.)
7-9 August 2003, Como

Workshop on Behavioural Analysis
Together with Bruno Frey University Zurich and Dieter Frey University Munich
17-18 December 2003, Munich

Peter Fischer, Institute of Psychology Munich
"Win Frames and Loss Frames"

Tobias Greitemeyer, Institute of Psychology Munich
"Processing Information in a Way that is Consistent with Preferences"

Rudolf Kerschreiter, Institute of Psychology Munich
"Information Held by Groups"

Simon Lüchinger, Institute for Empirical Research in Economics, Zurich
"Quantifying the Welfare Loss Inherent in the Eminence of Terrorism by Way of Happiness Data"

Stefan Magen, Max Planck Institute Bonn
"Die Bedeutung subjektiver Gerechtigkeit für das Recht der Gemeinschaftsgüter"
[The Significance of Subjective Justice for the Law of Collective Goods]

Stefan Meier, Institute for Empirical Research in Economics, Zurich
"Freiwilligenarbeit und Glück" [Voluntary Work and Happiness]

Bernhard Streicher, Institute of Psychology, Munich
"The Impact of Procedural Justice on Innovation"

Alois Stutzer, Institute for Empirical Research in Economics, Zurich
"Economic Consequences of Mispredicting Future Utility"

Stephan Tontrup, Max Planck Institute Bonn
"Funktionelle Methodenlehre - Lehren vom hindsight bias" [Functional Methodology – the Teaching of the Hindsight Bias]

Eva Traut-Mattausch, Institute of Psychology, Munich
"Does the Public Correctly Assess Changes in Prices for Consumer Goods After the Introduction of the Euro?"

2004

Rationality Workshop
8-10 March 2004, Ringberg Castle
Together with Max Planck Institute of Economics Jena and Max Planck Institute for Human Development Berlin

Christoph Engel, Max Planck Institute Bonn
"Behaviourally Informed Institutional Design" / "Social Dilemmas"

Gerlinde Fellner, Max Planck Institute Jena
"The Role of Social (Ecological) Rationality in the Provision of Common Goods"

Vittoria Levati, Max Planck Institute Jena
"How Does Cooperation Without Formal Intervention Occur?"

Machery Edouard, Max Planck Institute Berlin
"Norms and Common Goods"

Stefan Magen, Max Planck Institute Bonn
"Rationality on Earth and Mars"

Chrysostomos Mantzavinos, Max Planck Institute Bonn
"Heuristics and the Enforcement of Institutions"

Margret McCown, Max Planck Institute Bonn
"Are Collective Actors Different in Analytically Important Ways From Individuals?"
Katinka Pantz, Max Planck Institute Jena

"Are Collective Non-State Actors Different in Analytically Important Ways From Individuals – in Common Goods Situations?"

Jörg Rieskamp, Max Planck Institute Berlin
"Cooperation in Public Goods"

Matthias Sutter, Max Planck Institute Jena
"What can a Behaviorally Informed Approach add to the Understanding of Common Goods as a Social Problem?"

Judicial Decisions and Their Representation (for Details see C.II.2.3)
1-3 June 2004, Monastery Seeon

Heuristics and the Law – Dahlem Conference (for Details see C.II.2.2)
6-11 June 2004, Berlin

Game Theory and the Law (for Details see C.II.2.8)
22nd Seminar on New Institutional Economics
17-19 June 2004, Marienbad

Is there Value in Inconsistency? (for Details see C.II.2.4)
15- 17 July 2004, Venice

Corporate Actors Workshop
24 -25 November 2004, Lohmar

Martin Beckenkamp, Max Planck Institute Bonn
"Integrating Ergonomic Knowledge in Institutional Design"

Heike Hennig-Schmidt, University of Bonn
"Groups vs. Individuals. When do their Decision Outcomes Differ? Some Theoretical Considerations"

Guido Kordel, Max Planck Institute Bonn
"Behavioral Corporate Governance from a Regulatory Perspective"

Margaret McCown, Max Planck Institute Bonn
"Lobbying vs. Litigation: Political and Legal Strategies of Interest Representation in the European Union"

Julia Nafziger, University of Bonn
"Peer Group Composition"

Axel Ostmann, University of Saarbrücken:
"City Parks as Commons – Collective Action with Different Types of Actors"

Werner Tack, University of Saarbrücken
A Primer on ACT-R Modelling. Using the Cognitive Architecture Developed by John Anderson and his Team.

2005

Workshop: Behavioural Analysis
Together with Bruno Frey University Zurich and Dieter Frey University Munich
20-22 January 2005, Zurich

Christine Benesch, Institute for Empirical Research in Economics, Zurich
"Macht Fernsehen glücklich?" [Does TV Make You Happy]

Christoph Engel, Max Planck Institute Bonn
"The Impact of Institutions on the Decision How to Decide"

Markus Englerth, Max Planck Institute Bonn
"Paternalismus als Antwort auf beschränkte Rationalität?" [Paternalism as a Response to Bounded Rationality]

Peter Fischer, Institute for Empirical Research in Economics, Zurich
„Der Einfluss der verfügbaren Informationsmenge auf die Selektivität der Informationssuche" [The Influence of the Available Amount of Information on the Selectivity of Information Searches]

Bruno Frey, University Zurich
"Orden und Auszeichnungen" [Medals and Honors]

Thomas Gaube, Max Planck Institute Bonn
"Altruism and Charitable Giving in a Fully Replicated Economy"

Andreas Kastenmüller, Institute of Psychology Munich
"Die Auswirkung von Gewinn-und Verlustframings auf die Selektivität der Informationssuche" [The Effect of Winning and Losing Frames on the Selectivity of Information Searches]

Claudia Peus, Institute of Psychology Munich
"Der Einfluss unterschiedlicher Führungsstile auf Innovationen" [The Influence of Various Management Styles on Innovation]

Bernhard Streicher, Institute of Psychology Munich
"Organisationale Gerechtigkeit: Messinstrument, Innovation, Mediatoren" [Organizational Justice: Measuring Instruments, Innovations and Mediators]

The Interface between Behaviour and Institutions
Joint Workshop Max Planck Institutes for Human Development Berlin and Max Planck Institute for Research on Collective Goods Bonn
24-25 February 2005, Bonn

Jointly Prepared by Bonn student researchers: Institutional Variance

Stefan Bechtold, Sarah Zech, Max Planck Institute Bonn
"Copyright"

Christoph Engel, Max Planck Institute Bonn
"The Grammar of Law"

Christoph Engel, Max Planck Institute Bonn
"The Impact of Institutions on the Decision How to Decide"

Markus Englerth, Max Planck Institute Bonn
"Separation of Waste in Households"

Chrysostomos Mantzavinos, Max Planck Institute Bonn
"Definitions and Analytical Traditions"

Indra Spiecker gen. Döhmann, Max Planck Institute Bonn
"Providing Information for Legal Decision Making"

Stephan Tontrup, Max Planck Institute Bonn
"Judicial Decision Making"

Interacting with a Corporate Actor (for Details see C.II.2.6)
23rd Seminar on New Institutional Economics
1-4 June 2005, Monastery Irsee

Workshop Behavioural Analysis, Munich
Together with Bruno Frey University Zurich and Dieter Frey University Munich
14-15 November 2005 Munich

Arndt Bröder, Max Planck Institute Bonn
"Adaptive Flexibilität und maladaptive Routine bei der Wahl von Entscheidungsstrategien" [Adaptive Flexibility and Maladaptive Routines in the Choice of Decision-Making Strategies]

Bruno Frey, Institute for Empirical Research in Economics Zurich
"The Economics of Decorations"

Tobias Greitemeyer, Institute of Psychology Munich
"Understanding the Effect of Measuring Performance on Behaviour"

Stefan Magen, Max Planck Institute Bonn
"Begrenzte Rationalität, Fairness und Recht" [Bounded Rationality: Fairness and the Law]

Bernhard Streicher, Institute of Psychology Munich
"Dimensions of Organisational Justice"

Alois Stutzer, Institute for Empirical Research in Economics Zurich
"Translating Pro-Social Preferences into Pro-Social Behaviour – The Case of Donating Blood"

F. Publications

F. Publications

F.I Book Series of the Institute

2002

Uda Bastians
Verpackungsregulierung ohne den Grünen Punkt?
Die britische und die deutsche Umsetzung der Europäischen Verpackungsrichtlinie im Vergleich
(Common Goods: Law, Politics and Economics – Gemeinschaftsgüter: Recht, Politik und Ökonomie, Bd. 4), Baden-Baden, Nomos, 2002, 183 p.

Christoph Engel
Abfallrecht und Abfallpolitik
(Common Goods: Law, Politics and Economics – Gemeinschaftsgüter: Recht, Politik und Ökonomie, Bd. 5), Baden-Baden, Nomos, 2002, 358 p.

Lorenz Müller
Elektronisches Geld
(Common Goods: Law, Politics and Economics – Gemeinschaftsgüter: Recht, Politik und Ökonomie, Bd. 6), Baden-Baden, Nomos, 2002, 112 p.

Christoph Engel
Verhandelter Netzzugang
(Common Goods: Law, Politics and Economics – Gemeinschaftsgüter: Recht, Politik und Ökonomie, Bd. 7), Baden-Baden, Nomos, 2002, 101 p.

Christoph Engel/Jost Halfmann/Martin Schulte (eds.)
Wissen – Nichtwissen – Unsicheres Wissen
(Common Goods: Law, Politics and Economics – Gemeinschaftsgüter: Recht, Politik und Ökonomie, Bd. 8), Baden-Baden, Nomos, 2002, 404 p.

2003

Christoph Engel/Adrienne Héritier (eds.)
Linking Politics and Law
(Common Goods: Law, Politics and Economics – Gemeinschaftsgüter: Recht, Politik und Ökonomie, Bd. 9) Baden-Baden, Nomos, 2003, 315 p.

Nicole Christine te Heesen
Abfallverbringung ohne Grenzen
Die europarechtliche Ausgestaltung des abfallwirtschaftlichen Nähe- und Autarkieprinzips
(Common Goods: Law, Politics and Economics – Gemeinschaftsgüter: Recht, Politik und Ökonomie, Bd. 10) Baden-Baden, Nomos, 2003, 124 p.

2004

Jörn Lüdemann
Edukatorisches Staatshandeln
Steuerungstheorie und Verfassungsrecht am Beispiel der staatlichen Förderung von Abfallmoral
(Common Goods: Law, Politics and Economics – Gemeinschaftsgüter: Recht, Politik und Ökonomie, Bd. 11) Baden-Baden, Nomos, 2004, 171 p.

Adrienne Héritier/Michael Stolleis/Fritz W.Scharpf (eds.)
European and international regulation after the nation state
Different scopes and multiple levels
(Common Goods: Law, Politics and Economics – Gemeinschaftsgüter: Recht, Politik und Ökonomie, Bd. 12) Baden-Baden, Nomos, 2004, 296 p.

2005

Melanie Bitter
Spieltheorie und öffentliche Verwaltung
Behördliche Informationsbeschaffung durch spieltheoretische Mechanismen
Eine Untersuchung unter Berücksichtigung verschiedenartiger Rationalitäten
(Common Goods: Law, Politics and Economics – Gemeinschaftsgüter: Recht, Politik und Ökonomie, Bd. 13) Baden-Baden, Nomos, forthcoming, 265 p.

Thomas Baehr
Verhaltenssteuerung durch Ordnungsrecht
Das Vollzugsdefizit als Verfassungsproblem
(Common Goods: Law, Politics and Economics – Gemeinschaftsgüter: Recht, Politik und Ökonomie, Bd. 14) Baden-Baden, Nomos, forthcoming, 139 p.

F.II Preprint Series of the Institute

2002

Henri Tjiong: Institutional Dynamics in Environmental Corporatism. The Impact of Market and Technological Change on the Dutch Polder Model. 2002/1.
published in:
Christoph Engel/Adrienne Héritier (Eds.): Linking Politics and Law (Common Goods: Law, Politics and Economics 9) Baden-Baden, 187-218.

Henry Farrell/Adrienne Héritier: Formal and Informal Institutions under Codecision: Continuous Constitution Building in Europe. 2002/2.
published in:
European Integration Online Papers, Vol. 6 (2002), No. 3.
http://eiop.or.at/eiop/pdf/2002-003.pdf
and
Governance, Vol. 16 (2003), issue 4, 577-600.

Christoph Engel: European Telecommunications Law: Unaffected by Globalisation? 2002/3.
published in:
Jürgen Basedow/Harald Baum/Klaus J. Hopt/Hideki Kanda/Toshiyuki Kono (Eds.): Economic Regulation and Competition. Regulation of Services in the EU, Germany and Japan (European Business Law & Practice Series 18) The Hague 2002, 219-251.

Christoph Engel: Verhandelter Netzzugang. 2002/4.
published as:
Verhandelter Netzzugang (Common Goods: Law, Politics and Economics 7) Baden-Baden 2002, 101 p.

Dominik Böllhoff: Developments in Regulatory Regimes – An Anglo-German Comparison on Telecommunications, Energy and Rail. 2002/5.

Christoph Engel: Das legitime Ziel als Element des Übermaßverbots – Gemeinwohl als Frage der Verfassungsdogmatik. 2002/6.
published in:
Winfried Brugger/Stephan Kirste/Michael Anderheiden (Eds.): Gemeinwohl in Deutschland, Europa und der Welt (Interdisziplinäre Studien zu Recht und Staat 24) Baden-Baden 2002, 103-172.

Christoph Engel: Die soziale Funktion des Eigentums. 2002/7.
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