Homo Oeconomicus

The Economic Model of Behaviour and Its Applications in Economics and Other Social Sciences

Gebhard Kirchgässner

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The European Heritage in Economics and the Social Sciences

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To Maria

Preface

Fifty years ago, in 1958, RALF DAHRENDORF published his 'homo sociologicus'. Together with the 'homo politicus' he saw these as two new scientific homines to accompany the two existing ones, 'homo oeconomicus' as well as 'psychological man'. At that time, some social scientists demanded that economics should incorporate more sociological aspects. Thus, one might have assumed that homo sociologicus would be progressing in the future and rolling back homo oeconomicus. However, just the opposite happened: homo oeconomicus started off his triumphal advance through the social sciences, including sociology. Today, there exist economic (or 'rational choice') approaches in all social sciences. They are, of course, not undisputed, but they cover a considerable part of the traditional territories of these sciences.

On the other hand, it is often stated today, even by economists, that homo oeconomicus is outdated. Many results from psychological research and – more recently – from the new emerging field of Neuroeconomics show that the simple model of homo oeconomicus as it is used, for example, in many introductory microeconomic textbooks, has severe limitations. Hence, it might seem strange to publish a book about homo oeconomicus today. But, on the other hand, this whole new research is still – almost always – founded on the basic model of homo oeconomicus, the economic model of behaviour. While for many situations the conventional assumptions usually employed in economic analyses as, for example, strong rationality in the sense of JOHN VON NEUMANN and OSKAR MORGENSTERN (1948), are not appropriate or even rejected, the basic structure of the model remains the same.

Thus, it still makes sense to ask what this structure is, what the additional assumptions are being employed when this model is applied to problems in specific areas of the social sciences, and how successful these applications are. This is what this book intends, even if it is necessarily eclectic in the selection of specific areas of application. In doing so, special weight is given to the rationality and the motivational assumptions. Moreover, the anomalies, which surround the economic model of behaviour (like any other theoretical approach in the sciences), are also taken seriously.

This English version corresponds to the third, updated and extended edition of the German version, the first edition of which was published in 1991. Since then, there has been considerable development in Economics, in the application of the economic model in other social sciences, and, in particular, with respect to the basic behavioural assumptions of this model. These developments are taken into account in this edition at least to a large extent.

Parts of this English version were written during stays as visiting researcher at the Center for Study of Public Choice, George Mason University, Fairfax, VA, and the Social Science Research School at the Australian National University, Canberra. I thank these institutions, in particular JAMES M. BUCHANAN and GEOFFREY BRENNAN, for their kind support and hospitality.

Finally, I thank those who helped me in producing this book. Without listing them by name, I thank all those who critically read earlier versions and helped me to improve the current one. These friends and colleagues are, of course, not responsible for any remaining errors and deficiencies. Special thanks go to PAMELA GASSER and GABRIELA SCHMID who helped to improve the English. THORSTEN UEHLEIN assisted me in preparing the indices. Moreover, I am indebted to JÜRGEN BACKHAUS, the editor of this series, and to BARBARA FESS from Springer, for the fruitful collaboration. Last, but not least, I thank my wife MARIA who did not have the smallest burden when I was working on this book.

St. Gallen, January 2008 GEBHARD KIRCHGÄSSNER

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1 Introduction: Economics as a Positive Science

If the famous 'man in the street' were asked about the meaning of 'Economics', he would probably say that it has something to do with 'economy'. Consequently, the 'Homo Oeconomicus' would be someone who is active in economy. Behind this widely spread attitude lies a conception according to which the various sciences can be differentiated by subject. In this perspective, in the social sciences Sociology deals with social processes, Political Science with political processes, Law with legal regulations and, finally, Economics with economic activities. The latter can be split up into Political Economy (in the general sense) and Business Administration, depending on whether a single firm or the economy as a whole is regarded as the object of investigation. The traditional division between these subjects at the universities is based on this scheme. Originally, nearly all of them were included in (political) philosophy, but in time became sooner or later independent. Thus, the unity of the (social) sciences has been broken up, at least from an organisational point of view. As on the other hand most processes in human life do not have just social, but also political, legal and economic aspects, and as according to the prevailing attitude these interdependencies have increased during the last decades, 'interdisciplinarity' or, more recently, 'transdisciplinarity', is often called for, which means co-operation between two or more social sciences in order to cover certain areas or problems. Respectively, scientists of different disciplines are brought together in groups or commissions.[1] In many cases this kind of interdisciplinarity, however, works poorly which, among other factors, is because scientists of the various disciplines argue according to their own frame of thinking. This can create great difficulties for communication. The establishment of interdisciplinary institutes and studies has turned out to be of little help in this respect.

The concept of 'Economics' as presented and employed here is radically different. Economics is an attempt to explain human behaviour, employing the assumption that individuals behave 'rationally'. Individuals *act* by

[1] For a philosophical foundation of this demand within the framework of political planning see, for example, O. HÖFFE (1975, p. 274 ff.). For a criticism see G. FLEISCHMANN (1966).

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making *rational choices* among the alternatives which are at their disposal.[2] This holds independently of the field where a decision is made. Human beings do not behave basically differently when they solve social and political problems compared to when they turn to economic or legal tasks. Subsequently, economics as a method, and the economy as a subject of economics, are two different matters.[3] The fact that they are often not differentiated has above all a historical reason: economics has been developed within the frame of the (classical) science of political economy.[4] It is, however, a general approach of the social sciences which can be applied in various areas. Thus, the application of this approach means a step 'back' in the direction of a (methodological) unity of the social sciences.[5]

It follows that economics is first of all a method of the social sciences whereas the economy is one of its subjects. By combining method and subject, four cases can be differentiated:

(i) The economic analysis of economic relations. This is the field of traditional economics.

(ii) The non-economic, but, for example, sociological or psychological analysis of economic relations. This is among others the field of economic sociology, commercial law, or economic psychology. All these disciplines are well established.

(iii) The economic analysis of non-economic relations. To this field belong, for example, not only environmental or cultural economics, but also the economic theory of politics and the economic analysis of law. These are relatively new fields which have been developed during the last decades, partly in co-operation between economists and other social scientists.

(iv) The non-economic analysis of non-economic relations. This is the traditional area of other social sciences such as sociology, law, or political science.

As this book focuses on economic methodology, cases (ii) and (iv) are not considered here, however great their importance may be in other contexts. We exclusively deal with cases (i) and (iii), with the application of economics to economic, but above all to non-economic relations, i.e. to rela-

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[2] Therefore, the economic approach in the social sciences is often called 'Rational Choice Approach'. See for this, for example, KARL-DIETER OPP (1999) who distinguished two versions of this approach, a 'narrow' and a 'wide' one.

[3] See also G. GÄFGEN (1963, pp. 43ff.).

[4] See H. ALBERT (1977).

[5] See for this H. ALBERT (1978, 1978a).

tions, to which economics as a discipline of the social sciences has – according to traditional understanding – principally nothing to say.

The application of economics in the social sciences has the purpose of *explaining* human behaviour, respectively human action. We try to understand what brings about this behaviour. This does not mean that any judgement is made on whether this behaviour is 'good' or 'bad' in a moral or ethical sense. Economics is a *value-free* science in the sense of MAX WEBER, not a normative, but a positive science, like, for example, the natural sciences.[6] This implies inter alia that the validity of statements of the social sciences has to be independent of the question whether these statements are in accordance with the moral convictions of the scientists who are presenting them or whether they are to the contrary.[7]

The advocates of value-freedom in the social sciences have occasionally been reproached that a science pursued in this way would not be in a position to deal with value judgements. Such a view is obviously erroneous.[8] Of course, questions like those about the actual acceptance or questions about the impact of the acceptance of certain value systems in societies can be tackled, and the answers to these questions should be true (or false) independently of whether or not the application of such a value system is supported by the scientist or by a special group of society.

Finally, there is a statement often raised according to which scientists of the social sciences are not objective and, therefore, are not able to pursue a value-free science, because they – consciously or unconsciously – represent the 'standpoint of their class' (or discipline) in their scientific statements.[9] This assertion mostly leads to the postulate that scientists should

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[6] This does not imply that there are no methodological differences between the natural sciences and the 'economic' approaches in the social sciences. See for this the discussion in *Chapter 8* below.

[7] Apart from this, there is the attempt to make the "model of a moderate homo oeconomicus" (H. KLIEMT (1984, p. 46)) the basis of ethical systems, "which have dedicated themselves to a non-cognitivist foundation of norms exclusively based on factually prevailing individual interests" (ibid., p. 17). This conception of a "normative twin sister" (ibid., p. 17) of positive Economics, which is proposed not only by HARTMUT KLIEMT, but, for example, also by NORBERT HOERSTER (1982, 1983) who is influenced by JOHN L. MACKIE (1973), is not considered here.

[8] For a more detailed consideration of the problem of value-freedom in the (social) sciences see, for example, H. ALBERT (1956, 1963), G. RADNITZKY (1981) and G. KIRCHGÄSSNER (1982, 2006).

[9] This view has been represented especially by Marxists. For this see for example D. WITTICH (1976, pp. 46ff.), D. WITTICH, K. GÖSSLER und K. WAGNER (1980) or the contributions in H. G. SANDKÜHLER (1973). – However, there are also

adopt the view of the 'progressive' class, for example, the workers. This claim can only again and again be countered with Karl R. POPPER's eleventh thesis from his discussion with THEODOR W. ADORNO in Frankfurt in March 1957 which initiated the 'Positivismusstreit' (Positivist Dispute) as it was called later: "It is a mistake to assume that the objectivity of a science depends upon the objectivity of the scientist. And it is a mistake to believe that the attitude of the natural scientist is more objective than that of the social scientist." And in his twelfth thesis KARL R. POPPER adds: "What may be described as scientific objectivity is based solely upon a critical tradition which, despite resistance, often makes it possible to criticise a dominant dogma. To put it another way, the objectivity of science is not a matter of the individual scientists but rather the social result of their mutual criticism, the friendly-hostile division of labour among scientists, of their co-operation and also of their competition." (1962, p. 95).[10] Of course, the latter applies equally to both social and natural scientists.

It should be undisputed that economists who feel obliged to the postulate of value-freedom – and with that to an idea of scientific truth which is independent of political or social viewpoints – can nevertheless have political convictions. These convictions may influence them to consider certain questions as more – and others as less – relevant or even as irrelevant for their own research. Thus, they have an influence on their scientific work. They have an impact on the decision what is (and also what is not) a research area. This applies to the natural sciences, but to a greater extent to the social sciences.[11] In addition, these convictions can cause scientists to try influencing the use of their research results. Furthermore, economists like any other citizens have the right to bring their moral beliefs into the political process. Scientists of other faculties, above all philosophy, law, political science and sociology, take this for granted, as do economists, by referring to their respective scientific results. All this does not contradict the postulate of value-freedom, as long as one is aware of the different status of value judgements and factual statements, [12] and as long as one

quite a number of Marxists, especially in the Anglo-Saxon countries, who see this in a much more differentiated way and who are close to the position represented in this book.

[10] See for this discussion also U. STEINVORTH (1978).

[11] In this context HANS ALBERT (1956, 1963) speaks of the 'value basis' of the sciences.

[12] More recently, the dichotomy between facts and value statements which goes back (at least) to DAVID HUME (1739, pp. 455ff.) has again been questioned, for example by HILARY PUTNAM (2002), who speaks of a collapse of this dichotomy. However, although facts and value statements are often combined and often also not easily disentangled, it does not imply that they cannot be disentan-

does not claim to have superior knowledge in comparison to other citizens and to be able to tell them which value statements can be scientifically labelled as 'good' or 'bad', 'true' or 'false', 'justified' or 'not justified', 'founded or 'unfounded', respectively.[13]

All these considerations about the value-freedom of the sciences are familiar to those who know the positions of the Positivist Dispute in the sixties which was already mentioned above. Hence, it might appear to be superfluous to put forward these arguments once again. Nevertheless, it makes sense because considerable time has passed and methodological questions of the social sciences are discussed much less frequently today than during that time. Moreover, the double character of value-freedom shall be pointed out very clearly at the beginning of this book: the impossibility of giving value judgements the same scientific status as statements about facts, and that the latter are valid or not, independently of their genesis and independently of the justification of certain value or normative systems. Such value-freedom is necessary for a positive science like economics. Only if this is very clear, the role and the power of economics can be correctly assessed. This also holds for possible contributions of economics to 'normative' discourses.

The philosophy of science approach which is the basis of these considerations is today usually called 'Critical Rationalism'.[14] To this position which essentially goes back to the work of KARL R. POPPER, besides others, the work of HANS ALBERT, W.W. BARTLEY III, PAUL FEYERABEND[15],

gled. – On a critical discussion of this position, the untenability of which should be obvious since the seminal papers of HANS ALBERT (1956, 1963), see also LARS BERGSTRÖM (2002).

[13] Of course, everyone can and will accept for himself certain value judgements as valid or not valid; in this context we do not deal with the claim towards oneself, but with the scientific claim towards others.

[14] A description of this position in the philosophy of science is given by H. ALBERT (2000).

[15] It might be surprising that PAUL FEYERABEND is still attributed to Critical Rationalism. As far as his earlier work is concerned, this might be indisputable. In his later work his scepticism turned into relativism, and, with respect to the philosophy of science, methodological anarchism. This is one possible and in some respect also consequent or radical, but not a necessary further development of KARL R. POPPER's ideas. PAUL FEYERABEND's criticism of KARL R. POPPER in his latter period, which is in part distinctly polemic, does not change anything in this respect. (See for example P.K. FEYERABEND (1979, pp. 200ff.).) A comparison of his former to his later position can be found in P.K. FEYERABEND (1978). – In a wider sense, THOMAS S. KUHN could also be attributed to the position of the Critical Rationalism although there are some differences between

IMRE LAKATOS and JOHN W.N. WATKINS is counted. Whereas Critical Rationalism is strongly disputed in the other social sciences[16], above all in (German) sociology, it is undoubtedly the dominating philosophy of science doctrine in economics and in those areas of the social sciences which work on the basis of the economic model of behaviour.[17]

As already mentioned above, economics first of all deals with the *explanation* of human behaviour. This is preceded in many cases by a *description* of this behaviour. This description, however, should not be an end in itself, as is often the case in social sciences and in parts of economics, when the scientific achievement consists exclusively of designing systems of categories. Such descriptive or classifying efforts can be helpful to understand the problems and to analyse human behaviour. They are, however, not the final purpose; if nothing further is done, they are insufficient. If the explanatory efforts are successful, the results can also be used to make (conditional) *forecasts*. In doing so, one should always bear in mind, however, that the research object is human behaviour and not natural processes. The individuals might (even deliberately) behave differently than is predicted. Thus, besides the general problem of induction[18], with respect to

him and the other critical rationalists. This becomes especially clear in the contributions to IMRE LAKATOS and ALAN MUSGRAVE (1970). But he also writes, and this justifies his attribution to this methodological position: "On almost all the occasions when we turn explicitly to the same problem, Sir Karl's view of science and my own are very nearly identical." (1970, p. 1), and: "If I differ from LAKATOS (or SIR KARL, FEYERABEND, TOULMIN, or WATKINS) it is with respect to substance rather than method." (1970a, p. 233.)

[16] For an example see the discussion in T.W. ADORNO et al. (1969).

[17] This does, of course, not mean that all supporters of the Critical Rationalism completely agree with each other with respect to the conception of the economic model of behaviour as presented here. As for example VIKTOR VANBERG'S (1975, p. 109 ff.) or MANFRED SCHMID's (1979) criticism of KARL R. POPPER'S statements shows, there are also considerable differences despite all common ground. Especially the relation between sociology (and Economics) and psychology is disputed, and the question of to what extent scientific statements in the social sciences can be reduced to psychological statements. Moreover, not all economists see themselves being working on the basis of Critical Rationalism as their philosophy of science. Especially, falsificationism, which is related, is sometimes questioned as, for example, by DANIEL M. HAUSMAN (1985, 1992, 1996). For this discussion see W. MEYER (1991) or L.A. BOLAND (1997, pp. 248ff.).

[18] The general problem of induction is that it is impossible to draw from a finite set of observations conclusions about a set of infinitely many possible observations, if the statements have empirical content. From this it follows, as already mentioned by DAVID HUME, that there exists no logically forcing argument that

predictions in the social sciences a second problem arises, at least if it is granted that the individuals have a free will and/or are able to learn.[19]

Such forecasts make policy advice possible. It can, for example, be shown how economic agents (the 'economy') are likely to react to certain policy measures concerning the natural environment and what consequences can be expected for the natural environment.[20] Arguments for or against the application of certain policy measures and, therefore, implicitly also for or against certain norms or value judgements, can be put forward. Thus, economics as a positive science can become 'practical', in that it can provide 'normative discourses' with relevant knowledge even if this does not imply that the respective norms can be scientifically proven.[21]

Social interactions, i.e., actions in which more than one individual participates, are in economics generally interpreted as exchange processes. This idea is like many fruitful ideas neither new nor is it restricted to traditional economics. The sociologist GEORG SIMMEL (1858 – 1918) wrote already more than 100 years ago: "It should be recognised that most relationships between people can be interpreted as forms of exchange. Exchange is the purest and most developed kind of interaction, which shapes human life when it seeks to acquire substance and content. ... Every interaction has to be regarded as an exchange; every conversation, every affection (even if it is rejected), every game, every glance at another person" (1900, p. 82). Such exchange processes do not take place just on (formalised) markets, but practically everywhere, for example in politics, before courts, and also in families. If, therefore, in the following, the concept and the possible uses of economics are presented, no 'science of the market economy' and even less its ideological justification is intended, to prevent another possible misunderstanding.[22] The market as one of several

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the natural laws which, as we believe, have a sound empirical foundation will hold not only today but tomorrow as well. For the problem of induction see, for example, W. STEGMÜLLER (1971) or K.R. POPPER (1972, pp. 13 ff.).

[19] See especially K. R. POPPER (1944/45).

[20] We will deal specifically with this problem in *Section 4.2*.

[21] For the problem of 'foundation', see H. ALBERT (1968, pp. 8ff.) as well as – in confrontation with the respective concepts of the Critical Theory (the Frankfurt School) and of Constructivism (the School of Erlangen and Konstanz) – G. KIRCHGÄSSNER (1982).

[22] This misconception is widespread and quite understandable because (Western) economists underline like no other group the advantages of the market economy and frequently also demand 'more market'. (See, for example, H. SIEBERT (1998).) The rest of the population is considerably more cautious in this respect. For this see B.S. FREY (1986), B.S. FREY and W.W. POMMEREHNE (1988, 1993) as well as G. KIRCHGÄSSNER (2005).

possible systems for co-ordinating social activities has advantages and deficiencies; it is more apt to cope with certain problems and less apt to tackle others.[23] But this is not the point. Because it implies a *general* model of human behaviour, economics enables us to analyse processes outside formalised markets as well as in markets. To demonstrate this, we will choose a great part of our examples for the application of this behavioural model not from traditional economics and, therefore, not from the economy, but from other social sciences, usually from political science and law.

The justification of the capitalist property order or of any other social order is also not the subject of consideration in this context. Social orders determine the (social) conditions under which human action is performed. For this reason the same people will behave differently in different social orders. This does not mean, however, that a different model of human behaviour is needed. Economics enables us to examine behaviour within the framework of capitalist societies, but also of socialist societies, and not only of today's societies, but of societies in both the past and a potential (post-industrial) future as well.[24]

From all of this it should have become clear that within this framework there is no contradiction between economics on the one side and the social sciences on the other side, as the frequently used phrase of 'Economics and Social Sciences' implicitly suggests. Neither can the differentiation proposed by the sociologist and economist LEOPOLD V. WIESE (1876 – 1970) and adopted by, for example, JÜRGEN KEMPSKI (1956) be maintained in this form, that the social sciences deal with the relations between persons whereas economics deals with the relations between persons and things. Such an interpretation of economics might be suggested by a whole series of economic models, above all of mathematical models within the theory of general equilibrium which nearly exclusively discuss the relations between prices and quantities (of goods). It fails, however, to acknowledge that – apart from the one-person 'Robinson Crusoe' economy – economic transactions always include inter-human relations. A purchase means, for example, the transfer of property rights from one individual to another.

[23] For a comparison with other co-ordination systems see the classical contribution by A. DAHL and D.E. LINDBLOM (1953), P. BEHRENS (1986, pp. 110ff.) as well as G. KIRCHGÄSSNER (1997).

[24] This implies that precarious economic developments, like, for example, mass unemployment in the industrial countries or debt crises of developing countries, which might be regarded as a 'crisis of the economy', need not be accompanied by a crisis of Economics. The respective statement by HAZEL HENDERSON (1985) confuses economy as a subject with Economics as a method.

And if market processes are investigated, the main subject of traditional economics, it should be examined how the different actions of single individuals (and, thus, their mutual relations) are socially co-ordinated. From this viewpoint traditional economics is just one among other social sciences, besides, for example, sociology, law, political science or social psychology.[25]

In the following, the general economic model of behaviour, the 'Homo Oeconomicus', is presented *(Chapter 2)*. The two central assumptions behind this model, the assumption of rationality and of self-interest, are discussed in more detail. Besides, we will deal with a number of objections which have been raised against this model. Then, the application of this model is presented, first within traditional economics, where we discuss micro- and macroeconomics *(Chapter 3)*, and then in other social sciences, above all in political science and law *(Chapter 4)*. All these examples assume that individuals behave rationally according to their self-interest. At this point, some remarks referring to 'economic imperialism' appear to be appropriate. In *Chapter 5*, applications of this model are discussed in situations where costs of 'wrong' decisions are rather small for the decision-maker, giving room for behaviour which is not governed by pure self-interest. This creates some difficulties in applying this model. Further difficulties or 'dangers' which can arise if this model is applied are discussed in *Chapter 6*: (i) The overassessment of the power of this approach which may lead, for example, to the ignorance of anomalies of this model and to the adoption of 'immunisation strategies', (ii) a tendency towards conservatism which is to be found with some social scientists and especially economists who adhere to this view, and (iii) the overassessment of the producibility of social conditions. The two latter dangers are just like Skylla and Charybdis; one will have to find a safe way between both if economics is not to be just a social science, but also a socially relevant one.

Up to this point our reflections are rather 'theoretical', even if the examples include relevant practical problems. Contrary to this, *Chapter 7* deals with the practical consequences resulting from the application of this model, for example, within the framework of economic policy. On the one hand this chapter focuses on the relation between 'rational behaviour' and 'reasonable action', on the other hand on the implications resulting from this model for the role of government in society. There, we enter the field

[25] Correspondingly, HANS ALBERT (1967) speaks of Economics as 'market sociology'. – Thus, 'individual psychology' might be called an 'individual science' (in contrast to social psychology as a social science), although such a distinction is not without problems. See for this also S. LINDENBERG (1990).

of 'Constitutional Economics', which has emerged in recent decades, but can actually be traced back to the classics.[26] In this chapter, we also refer to the philosophical debate which has taken place during the last decades about the concept of rational or reasonable action, respectively. *Chapter 8* deals with the consequences for the concept of the unity of sciences (or at least the social sciences), taking economics as a general method of the social sciences. There, the question of the methodological independence of the social sciences and, thus, of possible differences between social and natural sciences, is taken up, as well as the question of methodological differences within the social sciences. Apart from understanding the economic approach and its theoretical and practical power and relevance which have been shown in previous chapters, this chapter intends to show the status of this approach with respect to the philosophy of science. Finally, *Chapter 9* presents a summary and discusses the 'competition' between 'individualistic' and 'collectivist', 'economic' and 'sociological' approaches within the social sciences as well as convergence tendencies between both of them.

[26] For an overview of this field see J.M. BUCHANAN (1987); surveys of the different fields of Constitutional Economics are given in D.C. MUELLER (1996).

2 The Economic Model of Behaviour

The purpose of this chapter is to present 'homo oeconomicus', i.e. to describe the general model of individual behaviour which is the basis not only for economics but for all approaches of the social sciences which understand human action as rational choice between alternatives.[1] The single individual is the unit of the analysis: the individual human being is in the focus of consideration.[2] This is a natural starting point for a social science which sees itself as a 'human science'. Moreover, it corresponds to our occidental tradition which considers – at least since the Enlightenment – the (autonomous) individual as the central point of philosophical and political reasoning.[3] It is presupposed that human beings are in a situation of scarcity so that they cannot satisfy all their needs together, at least not simultaneously.[4] The question of how the individual behaves in certain decision situations is the topic of economics.

First, we will deal with human behaviour and how it can be comprehended as 'rational action' within the framework of the economic model of behaviour. As 'full rationality' often cannot be presupposed, the question must also be answered as to what role 'bounded rationality' plays within this framework. Additionally, the relevance of norms and rules for human action is to be discussed. Peoples' intentions, which are, within the frame-

[1] See also B.S. FREY (1980) or W.H. MECKLING (1976), K. BRUNNER and W.H. MECKLING (1977), and K. BRUNNER (1987). In the latter papers, homo oeconomicus is called "REMM": Resourceful, Evaluating, Maximising Man. S. LINDENBERG (1990) has further developed this concept to "RREEMM": Resourceful, Restricted, Expecting, Evaluating, Maximising Man.

[2] Starting from the observation that the modern 'bourgeois society' gives – compared to other societies – the central role to the single individual, the fact that in economics the single individual and not, for example, a social class or any other collective actor plays the active part makes up the 'bourgeois' view of this approach.

[3] For a classical reference see IMMANUEL KANT (1787, pp. 467ff., especially pp. 467f.; 1785, pp. 64ff., especially p. 71).

[4] See for this ARMEN A. ALCHIAN and WILLIAM R. ALLEN: "Given the limitations of nature and the unlimited desires of man, scarcity is inevitable and pervasive." (1964, p. 12.)

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work of our model, reflected in the preferences, are especially essential for the way they act. Finally, there is the question of how individual action is motivated: How far does the assumption of self-interest bring us, which is usually employed in economic models?

2.1 Human Behaviour as Rational Action[5]

The individual's decision situation is essentially described by two elements: by preferences and restrictions. Both elements are strictly distinguished in the economic analysis.[6] In a given situation the restrictions limit the individual's leeway of action; to these restrictions belong, besides others, the income of the individual, the market prices of goods, the legal frame of his actions but also the (expected) reactions of other individuals. Within this leeway, there are the various alternatives of acting which are available and from which the individual can choose. It is not necessary that the individual knows all alternatives. Generally, he knows only part of his choices and often merely a very limited one, and he is aware of only some of their consequences. Before taking a decision he must, therefore, evaluate these alternatives, he has to build up (conditional) expectations or forecasts.[7] One of his alternatives is nearly always to postpone the decision and to search for additional information in order to increase his knowledge about possible actions and their consequences. The preferences are derived from the intentions of the individual, they reflect the individual's ideas of value as they have been developed during the process of his socialisation, and they are principally independent of the actual possibilities of action. According to these preferences, the individual assesses the various alternatives at his disposal, he weighs up the pros and cons, the costs and benefits of the alternatives against each other and finally chooses that (those) alternative(s) which come(s) closest to his preferences or which promise(s) to bring about the maximum net benefit.[8] Thus, in this model human behav-

[5] As to the concept of 'rational action' see, for example, C.G. HEMPEL (1961) or G. MEGGLE (1977).

[6] The economic approach differs in this respect from other approaches in the social sciences which do not make this distinction at all or at least not so strictly, as, for example, traditional sociology.

[7] H. ESSER (1996) denotes this the "definition of the situation" which precedes every action.

[8] JOHN RAWLS, who calls this concept "the standard one familiar in social theory", remarks that "in the usual way, a rational person is thought to have a coherent set of preferences between the options open to him. He ranks these op-

iour is interpreted as a rational choice by the individual from available alternatives or – to speak in the language of economics – as 'utility maximisation under constraints with uncertainty'.[9]

The distinction between preferences and restrictions is not the same as the one between objectives (ends) and means, which plays an important part in traditional economics as well as in normative decision theory. (In the latter, it is probably inevitable.)[10] The distinction between purposes and means is usually connected with the assumption that values are inherent in the first, but not in the latter, which is in correspondence to the ordinary (pre-scientific) use of language. However, at least since GUNNAR MYRDAL's (1933) 'classical' contribution it is obvious that means, as a rule, are not value-free; therefore, this distinction is questionable if not untenable.[11] When evaluating the various alternatives and then deciding on the 'best one', homo oeconomicus assesses 'means' and 'objectives' among the alternatives. In other words, when he pursues a certain goal in a given situation, it is important to him how this goal is achieved.[12] When he wants to travel from Munich to Zurich, for example, it is also important for him how and by which means he will reach this destination, whether by rail, in his own private car or by plane. Or, if a political decision is taken, it mat-

tions according to how well they further his purposes; he follows the plan which will satisfy more of his desires rather than less, and which has the greater chance of being successfully executed." (1971, p. 143.)

[9] As the individuals' behaviour is oriented toward the (potential) consequences of the various possible actions, one also speaks of a 'consequentialist' approach in this context. See for this, for example, A.K. SEN and B. WILLIAMS (1982).

[10] See for this, for example, LIONEL ROBBINS: "Economics is the science which studies human behaviour as a relation between ends and scarce means which have alternative uses." (1932, p. 16.) For a critique of LIONEL ROBBINS' position, see I.M. KIRZNER (1973, 1982) (with reference to L. v. MISES (1940)).

[11] In formal decision theory and especially by applying optimisation methods in quantitative economic policy, this can be handled by constructing additional target variables that are identical to the instrument variables. While the latter are formally still treated as being value-free, the corresponding target variables can be given weights. (See for this, for example, G.C. CHOW (1975, p. 154).) From this the problem arises that there are always more objective than instrument variables so that 'normal cases' in the sense of JAN TINBERGEN (1952), where the number of instruments has to be at least as large as the number of objective variables which (with some additional assumptions) can lead to exact solutions, do not appear any longer.

[12] More recently, the utility derived from the instrument variables is called 'procedural' in contrast to 'outcome utility', which is derived from the objective variables. See, for example, B.S. FREY, M. BENZ and A. STUTZER (2004) as well as M. BENZ (2004).

ters whether this is done by a dictator or in a democratic process. On the other hand, the objective (purpose) is as a rule only an (also value-loaded) instrument in order to achieve a superior objective. Lastly, there is only one single purpose left which in itself is no longer a means, namely the purpose of utility maximisation, which is striven for by the choice among the available alternatives. All other aims, like profit maximisation of entrepreneurs or vote maximisation by politicians, are only (value-loaded) means when referred to this purpose. Therefore, it is reasonable to stop speaking of purposes and means in the following, and to talk only of alternatives and their evaluation.[13] At first, the idea might be striking that (within the framework of the economic model of behaviour) profit maximisation should not be the purpose of the entrepreneur's actions, but is only a purpose derived from the assumption of utility maximisation and as such not identical with the latter. At least, the assumption of profit maximisation is made in nearly all microeconomic textbooks presenting the theory of the firm.[14] On the other hand, it should be obvious that it is quite important for the entrepreneur how such a profit is achieved. Two different procedures, which are likely to achieve the same profit, are different alternatives for him, which will generally bring about different utility. He will weigh up both according to his preferences and then take a decision in favour of the one that seems to be more advantageous. This, however, is only one example revealing that homo oeconomicus is generally not only financially motivated.[15] He does not assess only the material qualities, but, for example, also esthetical qualities, in principle all qualities (characteristics) which are connected with a certain alternative he can choose. In ordinary language, he does not consider only 'economic' categories, the maximisation of his (monetary) income and the optimal basket of his consumption goods.[16]

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[13] See G. GÄFGEN (1963, p. 102 ff.) as to the transition from the 'purpose-means-thinking' to that according to the principle of evaluation of alternatives.

[14] See for this, for example, the literature presented in *Section 3.1* when dealing with microeconomic theory.

[15] According to S. LOFTHOUSE and J. VINT (1978), this is valid nearly throughout for classical political economy. Contrary to that, however, JOHN STUART MILL gives the following "complete" definition of political economy: "The science which traces the laws of such phenomena of society as arise from the combined operations of mankind for the production of wealth, in so far as those phenomena are not modified by the pursuit of any other object." (1836, p. 323.) Here the materialistic aspect obviously prevails.

[16] As to this, GEORGE C. HOMANS writes in his 'rehabilitation' of 'economic man': "The trouble with him was not that he was economic, that he used his resources to some advantage, but that he was antisocial and materialistic, inter-

Two issues are important for considering an individual's decision within the framework of the economic model of behaviour: The independence of the decision and the rationality of the decision. Independence of a decision means that an individual acts according to his own preferences (and not according to the preferences of others). Of course, he can take into account the interests of others in his preferences; in an extreme case, he can be envious or malevolent, but also altruistic and benevolent. As a rule, however, 'the axiom of self-interest' is presupposed: The individual acts exclusively according to his own interests. Thus, envy, malevolence, altruism and benevolence are excluded. Of course, the individual knows that he does not live in isolation, but within a society. Corresponding 'social orientations', for example, the desire to live in a democratic society, are part of his preferences. The interests of other individuals are taken into account, however, only insofar as they influence the individual's range of action. In his *Theory of Justice* JOHN RAWLS calls such behaviour "mutually disinterested rationality" (1971, p. 144). This 'axiom' is in fact an empirical assumption that in special situations has to be checked, modified or even rejected.

The second point is the rationality of the decision. In this context, rationality does not mean that the individual chooses the optimum way of acting at every moment, that he goes through the world like a walking computer, which always finds out the best of all available alternatives in a flash. This distorted picture of the 'homo oeconomicus', which up to now is still to be found in many (text)books of microeconomics and which has rightly been criticised again and again, is not in line with the modern interpretations of the economic model of behaviour.[17] Rationality in this model means only that the individual, following his intentions, is principally in a position to assess and evaluate his action range and then to act accordingly.[18] It has to be taken into account, however, that the individual must

ested only in money and material goods, and ready to sacrifice even his old mother to get them. What was wrong with him were his values: he was only allowed a limited range of values; but the new economic man is not so limited. He may have any values whatever, from altruism to hedonism, but so long as he does not utterly squander his resources in achieving these values, his behaviour is still economic. ... In fact, the new economic man is plain man." (1961, p. 79 f.) After citing this passage, H.D. DREITZEL states: "Here the model of the rationally behaving human being becomes the basic figure of sociology." (1965, p. 6.)

[17] For criticism of this concept of rationality, see also K.J. ARROW (1986).

[18] J.W.N. WATKINS gives a similar definition of the 'principle of rationality', which he, however, calls "just rough and provisional": "An individual is placed in a certain objective problem-situation. He has certain aims (wants, preferences) or perhaps a single aim, and he makes a factual appraisal (which may be

make his decision without being fully informed and that the search for additional information is costly. He also often has to decide under time pressure. The individual will be especially willing to accept costs for additional information if he realises a relevant change of his action leeway and he therefore has to assess and evaluate his alternatives once again. A rational individual reacts to such a change 'systematically', i.e. neither by chance nor randomly, but also not in a strongly traditional manner by keeping strictly to given rules independent of the concrete situation.[19] Therefore, his behaviour can systematically be influenced by providing incentives, which in most cases result from changes of the individual's action leeway (his restrictions). Thus, in this concept, the philosophically meaningful and often discussed distinction between human behaviour and human action disappears: Behaviour of individuals is explained by assuming that they act rationally.[20] As a consequence, forecasts of behavioural changes as a reaction to changes of the action leeway are possible.

In other words, within the framework of the economic model of behaviour individuals are supposed to adapt to changed environmental conditions according to their objectives (preferences) in a systematic and therefore predictable manner. Such changes can result both from the actions of other individuals, for example by political measures, as well as through changes of the 'natural' conditions. This is formulated as a principle by HARTMUT KLIEMT as follows: "Every intentional human behaviour is to be explained as individual adaptive behaviour guided by preferences." (1984, p. 17.)

According to the logic of science, this 'weak principle of rationality' might, as a basis for the economic model of behaviour, be of similar im-

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a misappraisal) of his problem-situation. The rationality principle says that he will act in a way that is 'appropriate' to his aim(s) and situational appraisal." (1970, p. 172). He explicitly refers the term 'appropriate' to KARL R. POPPER (1967).

[19] For the discussion of such kinds of 'irrational' behaviour see G.S. BECKER (1962) as well as, referring to him, J. ELSTER (1979, p. 137 ff.).

[20] See also G. KIRCHGÄSSNER (1985) for this. MAX WEBER adopts a similar if not even the same position when he writes about social behaviour: "It will be called human 'behaviour' only insofar as the person or persons involved engage in some subjectively meaningful action. Such behaviour may be mental or external; it may consist in action or omission to act. The term 'social behaviour' will be reserved for activities whose intent is related by the individuals involved to the conduct of others and is oriented accordingly." (1922, p. 1.) This position is, of course, not uncontested. A different view is taken especially by those authors who combine with the term 'action' a moral demand as, for example, B.M. PATZAK (1984).

portance for the social sciences as the 'principle of causality' for the natural sciences.[21] In the same way as in natural sciences talking about (natural) laws does not become possible before accepting the principle of causality, in social sciences the understanding of human actions is not possible if the distinction between preferences and restrictions (purposes and means), which is embedded in the economic model of behaviour, is not accepted and if it is not presupposed that the individuals use the means at their disposal in a (subjectively) rational way to reach their objectives.[22]

The assumption of rationality and – based on it – the economic model of behaviour can of course also be seen as a hypothesis which can principally

[21] See for this also K.R. POPPER (1967), M. TIETZEL (1981, p. 131 ff.), B. ABEL (1983, p. 133 ff.), G. KIRCHGÄSSNER (2005a) and, for a somewhat different position, S.J. LATSIS (1983). Of course, the principle of causality can also be understood differently. (As for the importance of the principle of causality see, for example, W. STEGMÜLLER (1960) or H.W. ARNDT (1976) as well as especially M. BUNGE (1959)). Besides this, the analogy between the principle of rationality and the principle of causality is restricted. Whereas, for example, the principle of rationality can also be and often is comprehended in a normative sense, this does trivially not apply to the principle of causality.

[22] It is interesting that not only the 'new economic history' as represented, for example, by DOUGLAS C. NORTH (1981), (see for this also P. STOLZ (1979) and R. TILLY (1988),) but also the traditional 'understanding' branch of history applies exactly this 'economic' model of behaviour and, therefore, also the underlying rationality principle, although history and (theoretical) economics seem to be methodologically at a far distance from each other at first sight. (The latter is underlined by the dispute of methods ('Methodenstreit') started by CARL MENGER (1883) between his (Austrian) theoretical school and GUSTAV SCHMOLLER's historical school of political economy. (See for this, for example, J.A. SCHUMPETER (1954, p. 814f.).) In this context, for example, J.W.N. WATKINS writes about the principle of rationality: "But the principle can also be cast in the form of a methodological rule that enjoins historians and other investigators of human behaviour, not necessarily to accept the principle *qua* factual postulate as true, but to proceed on the supposition that it is true. In this last form … it says, first of all, that to provide a conjectural explanation for a past action is to postulate a decision-scheme which has a practical conclusion of which that action could be the natural outcome." (1970, p. 209.) And KARL R. POPPER looks at such an approach as "*a purely objective method* in the social sciences which may well be called the method of *objective* understanding, or situational logic." (1962, p. 199.) In another work he calls this procedure "situational analysis" (1972, p. 178.) (See also the references given there.) For a discussion and a critique of KARL R. POPPER's conception of the social sciences see V. VANBERG (1975, pp. 109ff.), M. SCHMID (1979, 1979a) as well as D.W. HANDS (1985). – For the application of the Rational Choice Approach in historical sciences, see also A. FRINGS (2007).

be tested empirically. Due to the generality of this hypothesis, however, such testing might be rather difficult. However, tests are principally (and often rather easily) possible if the restrictions and/or preferences are specified in more details, i.e. if additional hypotheses are added.[23] But then 'combined hypotheses' are tested, which does not make it easy to decide whether (in case of failure) the assumption of rationality and with it the behavioural model or (one of) the additional special assumption(s) has to be rejected.[24] If this behavioural model, as it is supposed here, is seen as prerequisite for understanding human action, the difference between 'explanation' and 'understanding' disappears: I can understand human action only if I can explain it by means of such a model of rational behaviour.[25]

The actions that are open to an individual, usually refer to other individuals. Economics, therefore, is less concerned with the actions of but the *interactions between* individuals. If one action is, for example, making a contract, this can be achieved only if – in a given situation – both (all) partners agree. As rational individuals, they will agree only if both expect a net-benefit for themselves, which means that – given the respective preferences – the expected utility of the service in return to be performed by the contracting partner has to exceed the expected costs, which must be borne for the individual's own service. But this is exactly the situation of (productive) exchange, and such exchange does not just take place in the economic and legal areas, but everywhere, for example also in politics.[26]

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[23] See, for example, the anomalies discussed in *Section 6.1*, especially those that result from the model of maximising (subjective) expected utility.

[24] The assumption of rationality can also be understood in a normative (prescriptive) sense by labelling certain behaviour as rational. This does not necessarily imply an ethical qualification. (Concerning the usage of the assumption of rational behaviour on a prescriptive and descriptive purpose, see also AMARTYA K. SEN (1987)).

[25] MAX WEBER, who usually is attributed to the 'understanding' branch of the social sciences, puts this into similar words. He looks at sociology as "that science which aims at the interpretative understanding of social behaviour in order to gain an explanation of its causes, its course, and its effects." (1922, p.1.) (As to MAX WEBER's position see, for example, E. ANGEHRN (1983).) Besides, this also corresponds to our ordinary language usage of 'understanding'. Here, we also think in categories of motives (preferences), means (restrictions) and limited information. – As to the discussion of the term 'understanding' in social sciences, see, for example, W. STEGMÜLLER (1969, p. 360 ff.), A. BÜHLER (1987) as well as the contributions in G. SCHURZ (1990).

[26] The same applies to co-operations between partners that are usually based on (explicit or implicit) contracts; in this sense they can be interpreted as exchange as well.

Therefore, as already mentioned in the introduction, social interactions can nearly always be interpreted as exchange, and this is largely the case if the economic model of behaviour is applied.[27]

It could be assumed that such a theory of individual behaviour is intended to explain exclusively, or at least mainly, the actual behaviour of single individuals. In fact, economics is hardly interested in the behaviour of single individuals but in the behaviour of so-called 'aggregates' such as, for example, consumers, entrepreneurs, or voters. It is not the behaviour of a certain single individual that is interesting, but the 'typical' behaviour, which is considered: regularities in the behaviour of all or at least the majority of the individuals in the respective group.[28] Here the micro-theory offers (only) the basis in order to be able to explain the macro-phenomena. This is not a contradiction, as it might seem at first glance. If by change of a certain macro-variable, the conditions for the actions of all individuals of a certain group are influenced in a similar way, it is to be expected that their reaction will, not in every single case but on average, show that regularity which can be explained by the individual decision calculus. Thus, a rise in petrol prices will, for example, not induce every car-driver – ceteris paribus – to save petrol. For the economic way of reasoning it is, however, only relevant that, on average, consumers react with savings so that the rise in prices leads to a reduction of the total quantity demanded. This behaviour, which actually could be observed after the high increases of petrol prices in the years 1973/74, 1979/80, and since 2005, can – by using some additional 'weak' assumptions – be derived for the 'typical' consumer

[27] Of course, there are also some different approaches. KENNETH E. BOULDING (1968, 1973), for example, distinguishes three fundamentally different kinds of interaction among individuals: love, exchange, and fear, or, "three groups of social organizers": "the threat system, the exchange system, and the integrative system." (1969, p. 4.) With the assumption of self-interested behaviour, love and fear are mostly excluded if the economic approach is applied to analyse a social problem and emphasis is put on the exchange system. Contrary to this, KENNETH BOULDING is concentrating in his work on the two other systems. – In a similar way CHARLES E. LINDBLOM distinguishes between exchange, authority, and persuasion as "basic methods of social control" (1977, pp. 11f.).

[28] Correspondingly, JOHN R. HICKS writes when dealing with the law of demand: "In all our discussions so far, we have been concerned with the behaviour of a single individual. But economics is not, in the end, much interested in the behaviour of single individuals. Its concern is with the behaviour of groups. A study of individual demand is only a means to the study of market demand." (1939, p. 34.) – See for this also F.A. v. HAYEK (1952, p. 48 ff.) as well as K.R. POPPER (1967, p. 3).

from the individual optimality calculus of the theory of consumer behaviour.[29]

There is still another reason why the consideration of aggregates is of central importance for the social sciences: It is the only way to comprehend the social consequences of individual actions which are *not-intended* by the single individuals and which lead to a *spontaneous order*.[30] This is a central task of the social sciences, according to many authors even *the* central task.[31] For economics this is almost trivial and since ADAM SMITH (1776) taken for granted: Usually none of the individuals active in the market has the intention of starting a social co-ordination mechanism, the market mechanism, but by their activities, they nevertheless all contribute to it, consciously or unconsciously, intentionally or against their intentions. To alter an example of KARL R. POPPER (1945, II. p. 96) in some respect: If all those people who live in multiple dwellings decided to move into one-family houses and if they tried to realise this intention, this would cause a rise of land prices and together with it of one-family houses, which would presumably be against the intentions and the interests of those who started this process. In the end, some of them would not realise their intention at all. But not only the functioning of the market mechanism is an unintended side-effect resulting from the actions of many individuals, the same applies – as shown below – to political mechanisms. And there are

[29] Reversibly, the reduction of petrol prices after 1985 brought about a rise in demand. – For the problems which arise if a negatively sloped collective demand function is to be derived (without additional, restrictive assumptions) from the optimising behaviour of the individuals see, for example, G. KIRCHGÄSSNER (1993).

[30] This is called the "emergent nature of social phenomena" by K.J. ARROW (1994, p. 3).

[31] See, for example, KARL R. POPPER who discusses "the main task of social sciences. It is the task of analysing the unintended social repercussions of intentional human actions." (1945, II, p. 95.) (See for this also the 23rd thesis of KARL R. POPPER (1962, p. 102).) And FRIEDRICH A. V. HAYEK writes: "If social phenomena showed no order except insofar as they were consciously designed, there would indeed be no room for theoretical sciences of society and there would be, as is often argued, only problems of psychology. It is insofar as some sort of order arises as a result of individual action but without being designed by any individual that a problem is raised which demands a theoretical explanation." (1952, p. 69.)

many other institutions resulting thereof; institutions whose efficiency may well be in the interest of the individuals concerned.[32]

When examining the intended and the unintended social consequences, the economic approach bases its explanation on the behaviour of the single individual. Correspondingly, this explanatory approach is called 'methodological individualism'.[33] 'Actions' as they are understood in our context, can only be performed by individuals, but not by collective groups or aggregates. They do not have autonomous preferences that are independent of those preferences to be found with the individuals acting in them. Therefore, – in contrast to other theories of social sciences – collective decisions are the result of the aggregation of individual decisions and not of independently acting collectives.[34] This idea is not new; on the contrary, it has already been part of the classical programme of political economy.[35] Unlike, for example, many versions of Marxist theories, there are neither in classical nor in modern ('bourgeois') economics (nor in the sociology in the tradition of MAX WEBER) economic classes which act independently.[36] But there are workers (employees dependent on their wages) who can organise themselves, for example in trade unions, to represent their equal or similar common interests. This may well be the basis for a 'class consciousness', but this consciousness is the consciousness of the workers concerned and not of a working class above them and quasi to be thought of as a subject of its own.[37] In the same way an 'organic theory of the

[32] Here a distinct difference must be made between intention and interest: Even if I do not intend the social effects resulting indirectly from my actions, they may well be in my interest.

[33] The exact meaning of 'methodological individualism' is intensively debated in the literature. The term can be traced back at least to JOSEPH A. SCHUMPETER (1908, p. 88). But the conception can already be found with CARL MENGER (1883, p. 90 ff., p. 151 ff. as well as p. 193 ff.). For the modern conception see especially J.W.N. WATKINS (1953, 1958), for the discussion, for example, S. LUKES (1973, p. 110 ff.) as well as H. LENK (1977).

[34] That 'social variables' exist, variables which are not generated by single individuals but emerge from the social process, i.e. by the interaction of the individuals, and that they have an impact on the individual decisions, does not create problems for the concept of Methodological Individualism. Insofar, K.J. ARROW (1994), who sees such a problem, seems to fall victim to a misunderstanding. The single and important point is that only individuals (are able to) act.

[35] See for this H. ALBERT (1977, p. 183; 1978, p. 53).

[36] Of course, this is no argument against the sociological class conception and its (possible) usefulness.

[37] Corresponding views, which are to be found, for example, in Marxist theories, can be referred to EMILE DURKHEIM. In his "Rules of Sociological Method" he

state', considering the state as an independently acting subject, is incompatible with the economic approach.[38] On the other hand, it is quite compatible with methodological individualism that individuals – if within a collective group – behave differently as if they were isolated. There are not only quite different possible actions at their disposal, but also the assessment of their situation (and their information) can be decisively influenced by such a group. This can result in formulating new demands and objectives that would not even be imaginable without the social interaction in that respective group or between different social groups. But the fact remains that it is only the individual who can 'act'. Thus, a theory of individual behaviour is not as a rule, and by no means necessarily, a theory of the behaviour of *isolated* individuals. If this difference is seen, many arguments brought forward against theories of individual behaviour are no longer tenable.[39] At the same time, it becomes difficult to argue in favour

writes on collective consciousness: "Individual minds, forming groups by mingling and fusing, give birth to a being, psychological if you will, but constituting a psychic individuality of a new sort. It is, then, in the nature of this collective individuality, not in that of its associated units, that we must seek the immediate and determining causes of the fact appearing therein." (1895, p. 103 f.). And he comments on this in a footnote in the following way: "In this sense, and for these reasons, one can, and must, speak of a collective consciousness distinct from individual consciousness." (p. 103.) However, this passage is not necessarily typical of the whole of EMILE DURKHEIM's works, a fact which makes it possible "to correct Durkheim by Durkheim" (p. 42) on this point or "to defend Durkheim against Durkheim himself" (p. 34), respectively, as RENÉ KÖNIG (1961) writes in his introduction to the German translation of the "Rules".

[38] Such organic theories of the state were and are still used in traditional public finance, but also in other social sciences. This is indicated by concepts such as 'state reasoning' ('Staatsraison'), 'public welfare' or 'social welfare'. See for this also *Section 4.1*.

[39] In this context FRIEDRICH A. V. HAYEK talks of the "silliest of the common misunderstandings" about the economic model of behaviour or, quite generally, methodological individualism: "the belief that individualism postulates (or bases its arguments on the assumption of) the existence of isolated or self-contained individuals, instead of starting from men whose whole nature and character is determined by their existence in society. If that were true, it would indeed have nothing to contribute to our understanding of society. But its basic contention is quite a different one; it is that there is no other way toward the understanding of social phenomena but through our understanding of individual actions directed toward other people and guided by their expected behaviour." (1949, p. 6.)

of theories of collective behaviour that are not based on individual behaviour.[40]

This does not mean, however, that the economic model of behaviour can only be applied to explain collective behaviour.[41] REINHARD ZINTL (1989) has pointed out that individual behaviour can also be explained or predicted if an individual's alternatives can be reduced so severely by restrictions that individual factors (like personal preferences) play only a minor part. Thus, for example, within the framework of the economic theory of politics, not only the behaviour of voters (as an aggregate) can be explained, but also the behaviour of individual governments if their leeway is strongly limited by the re-election constraint. On the other hand, the resort to sociological or psychological approaches seems to be appropriate in order to explain the behaviour of individual (single) voters, because here above all personal factors are decisive.[42]

The restrictions to which the individual agents are subdued can, in many cases, easily be identified. In the simplest case of consumer choice in the private household, these are the income of the household as well as the given prices of the various goods. In contrast to that, it is rather difficult to uncover the individuals' preferences. Apart from surveys using questionnaires with all their methodical difficulties[43], usually they can be uncovered only indirectly: knowledge of the individuals' behaviour and of their

[40] As to the transformation problem of connecting individual effects with collective phenomena, see also K.D. OPP (1979, p. 99 f.) as well as S. LINDENBERG (1977).

[41] There are also economists who represent the point of view that the economic model of behaviour can contribute nothing at all to the explanation of individual behaviour but who, nevertheless, hold the view that this (individualistic) model can be used to explain developments in the economy. One of the representatives of this view, ARMEN A. ALCHIAN, writes about economic analysis: "To regard it as a theory of individual behavior is fatal." (1953, p. 601.) The background of this assessment is the consideration that because of strong competition (ex post) only that behaviour will survive in the economic process which bears the requirements of the economic process, independent of the single individuals' intentions ex ante or their motivations. (For the discussion of this 'evolutionary' approach of economics, see below *Section 8.3*.).

[42] See for this G. KIRCHGÄSSNER (1980).

[43] Economists use such surveys mainly when they apply the 'contingent valuation method'. (See for this, for example, the papers in R.J. KOPP, W.W. POMMEREHNE and N. SCHWARZ (1997).) This method is mainly used to estimate the money values of the benefits of environmental goods and/or the costs of environmental damages. (See, for example, A. ENDRES and K. HOLM-MÜLLER (1998).) For a survey of the different methods to reveal the preferences for public goods, see W.W. POMMEREHNE (1987).

restrictions allows one to draw conclusions about their preference orderings.[44] Furthermore, preferences as a rule are more stable than restrictions; they change more slowly than restrictions. Therefore, the economic theory explains changes in human behaviour almost exclusively by changes of the restrictions. If the restrictions change, certain alternatives of acting become relatively more advantageous, others relatively less advantageous, and individuals increasingly choose those alternatives that have become more attractive.[45] As these preferences are supposed to be relatively stable, the question is, however, only seldom asked where these preferences come from, how they are formed and how they are (or can be) influenced.

This also means that with the help of the economic model of behaviour, in the first line changes in the behaviour of individuals or differences between individuals can be explained, but hardly ever the levels of activities. This is the case in traditional economics but also holds for its application in other social sciences. For example, given a specific situation, it can be explained how the consumption of petrol will change after a rise in its price. The quantity of the consumption, however, cannot be explained, except if a comparison to other countries with different conditions is made. Changes in the voting turnout can be comprehended with this approach, but hardly its level.[46] On the other hand, it can be explained why under certain conditions, for example, for general elections, turnout is higher than under different conditions, for example, for local elections.[47]

Thus, economics might be seen as a science that deals with changes of social conditions. Human behaviour can be influenced or changed if the conditions under which people act, in our terminology the restrictions, are changed. This might sound revolutionary and remind some people of Marxism. There, the main determinant of human behaviour, respectively of the struggle between the different classes, is the economic basis; if this basis changes, the behaviour of these classes changes too. Modern economic theory differs, however, from Marxism or at least from many of its versions in a crucial respect: It starts from a realistic image of human be-

[44] In microeconomics, this is done using the 'revealed preference approach'. See for this P.A. SAMUELSON (1953) or K. Lancaster (1974, p. 241 ff.).

[45] In other words, there is a (partial) substitution of the less attractive alternatives by those, which have now become relatively more attractive. CARL CHRISTIAN VON WEIZSÄCKER speaks of the "confidence in the effectiveness of the substitution principle" as the common basic conviction of the economists (1976, p. 69).

[46] The fact that what can be said about the turnout level clearly contradicts empirical evidence, is one of the 'anomalies' of the economic model of behaviour which is dealt with in *Chapter 5*.

[47] See for this G. KIRCHGÄSSNER (1980).

ings and takes them with their value conceptions (preferences) for granted. It does not try to 'improve' them nor does it maintain that these preferences will 'improve' under changed conditions. Changed economic conditions do not imply that egoistic (bad) people transform into altruistic (good) people; even under changed conditions the same (old) human beings act. It is possible that they now act 'better' according to some objective or some normative system, but not because they would have become better, only because they react to changed conditions.[48]

2.2 Bounded Rational Behaviour and the Influence of Rules

The concept of the 'homo oeconomicus' as presented here, i.e. the economic model of behaviour, has often been criticised within and also outside economics. However, many objections are not directed against the concept as such, but against that extreme special case, denoted as "Paleo-Homo Oeconomicus" by CHRIS DOUCOULIAGOS (1994), as it is often presented in microeconomic textbooks, namely against the walking computer which is fully informed and always decides as quickly as a flash of lightning. RALF DAHRENDORF for example, who overall takes quite a favourable view of this concept, writes: "Social science has so far presented us with at least two new and highly problematical creatures whom we are unlikely ever to encounter in our everyday experience. One is the much debated *homo oeconomicus* of modern economics: the consumer who carefully weighs up utility and cost before every purchase and compares hundreds of prices before he makes his decision; the entrepreneur who has the latest information from all markets and stock exchanges and bases his every decision on this information; the perfectly informed, thoroughly rational man. In our everyday experience this is a strange creature" (1958, pp. 21f.). Against this view of homo oeconomicus, it can rightly be objected that economic agents are never fully informed and that they are no walking computers either. This assumption is unrealistic and empirically falsified. It is not without good reason that ROBERT H. FRANK writes that "People of the sort who inhabit economic models surely do exist: but most of us (economists included!) make every effort to steer clear of them." (1987, p. 602).[49]

[48] See D. COLLARD (1978, p. 59 f.) as to the respective position of KARL MARX.

[49] The probably oldest criticism of this traditional concept of the homo oeconomicus goes back to THORSTEIN VEBLEN, who gives the following caricature: "The hedonistic conception of man is that of a lightning calculator of

It is obvious that scientific assumptions must always abstract from reality in a certain way and, therefore, are 'unrealistic' and in individual cases refutable. The point is that such abstractions must not filter out the essential aspects of the problem at stake. To what extent this has happened or still happens through the usual assumptions in economics, will not be discussed in detail here. MILTON FRIEDMAN's famous contribution to the methodology of positive economics in 1953 opened a discussion on that question, which continues and even intensified during the eighties.[50] It seems to be important, however, to remember that the criticised caricature of the homo oeconomicus is only an extreme special case which abstracts, for example, from the existence of uncertainty or information costs. As will be shown below in *Section 3.1*, such abstractions are not essential components of microeconomics and they are not typical of the modern economic theory which is discussed here and which is to be seen as behavioural theory in the sense mentioned above.[51] But then many objections must be dropped or, in RALF DAHRENDORF's words, the homo oeconomicus becomes a creature considerably less strange than before.

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pleasures and pains, who oscillates like a homogeneous globule of desire of happiness under the impulse of stimuli that shift him about the area, but leave him intact. He is an isolated, definitive human datum, in stable equilibrium except for the buffets of impinging forces that displace him in one direction or another. Self-imposed in elemental space, he spins symmetrically about his own spiritual axis until the parallelogram of forces bears down upon him, whereupon he follows the line of the resultant. When the force of the impact is spent, he comes to rest, a self-contained globule of desire as before." (1898, p. 389f.) LOUIS DE ALESSI, who quotes this passage, remarks correctly that this view is "out of touch with current theoretical and empirical work" (1983, p. 71) in economics.

[50] For a critical judgement of MILTON FRIEDMAN'S position see E. NAGEL (1963); of the more recent discussion T.D. STANLEY (1985), J.-L. ARNI (1989), TH MAYER (1993), G. PELLONI (1996) or U. MÄKI (2000). RALF DAHRENDORF adopts the same position as MILTON FRIEDMAN when he writes: "In economic theory the protracted argument over whether a *homo oeconomicus* who permanently weighs profits and losses is a realistic image of man's economic behavior has been decided: literal realism is quite unnecessary as long as the theories based on this model provide powerful explanations and useful predictions. ... To the extent that the assumptions underlying scientific theories become 'realistic,' they also become differentiated, restricted, ambiguous, unconductive of definite explanations or predictions. In this sense, then, the less realistic and more stylized, definite and unambiguous the assumptions underlying a theory are, the better the theory is." (1963, pp. 92ff.)

[51] See also B.S. FREY (1980, 1992).

Whereas RALF DAHRENDORF admits that this concept has turned out to be generally suitable for analysing economic processes, there are quite a number of critics, among them also economists, who dispute this. These critics maintain that the economic model of behaviour contradicts the findings of modern psychology and, therefore, is to be rejected. The (alleged) findings of psychology are accepted as an authority to which the economic theory would have to adjust.[52]

It is, of course, permissible to compare economic theory with the findings of psychology, simply because economists often refer the problems that they cannot explain to the field of psychology. This applies especially to questions concerning the origin and change of preferences.[53] When considering psychology, and especially social psychology, more closely, it becomes however obvious "that at least part of psychology looks at man's behavior in fundamentally the same way as economics; namely, as responding to positive and negative incentives in a coherent and predictable manner. Both, psychological and economic man are thus regarded as behaving rationally and as maximising their utility."[54] According to KARL-DIETER OPP, the psychological theory behind the economic approach is "equivalent to the expected value theory of social-psychology" (1979, p.7), as it is represented, for example, by N.T. FEATHER (1959) or by KLAUS KAUFMANN-MALL (1978, 1981). But this does not mean that some traits of the economic model of behaviour do not contradict psychological findings and that subsequently economists could not learn from psychologists.[55] But a general contradiction is out of the question. Moreover, whenever a contradiction between psychological knowledge and the economic approach seems to occur, it is not sure that the economic approach should

[52] Vice versa, some economists as, for example, W.H. MECKLING (1976), reject the psychological approach. See for this B.S. FREY and W. STROEBE (1980).

[53] For a critique of this procedure, see R. ZINTL (1986).

[54] W. STROEBE and B.S. FREY (1980. p. 144). See also B.S. FREY and K. FOPPA (1986).

[55] See, for example, A. FURNHAM and A. LEWIS (1986), the contributions in A.J. MACFADYEN and H.W. MACFADYEN (1986), S.B. LEWIN (1996), or the contributions in issue 2/2 of the *Swiss Journal of Economics and Statistics*, 1997. A number of more recent psychological studies is especially interesting for economists; they deal with anomalies of the economic model and especially of the model of expected utility maximisation, based on the Axioms of JOHN V. NEUMANN and OSKAR MORGENSTERN (1948). (See, for example, the contributions in D. KAHNEMAN, P. SLOVIC and A. TVERSKY (1982), in R.M. HOGARTH and N.W. REDER (1987), in I. BROCAS and J.D. CARILLO (2003) as well as many contributions in the *Journal of Economic Psychology* founded in 1981.) See for this also *Section 6.1* below.

be adjusted. The different research interests, the explanation of the behaviour of (single) individuals versus the explanation of aggregate behaviour, can lead to different abstractions from reality that – prima facie – might lead to contradictions between both approaches. In such a case, the adaptation of the economic to the psychological theory might even be a step backwards.[56]

Quite a number of critics reject the assumption of rationality of the economic model, which they identify in the sense of a 'full rationality' with explicit optimising or maximising behaviour. In doing so, they can refer to the fact that prominent advocates of the economic approach as, for example, GARY S. BECKER or KARL BRUNNER, use the term 'maximisation' explicitly when they characterise their methodology.[57] But even these authors generally use this term not in the sense of an explicit (mathematical) optimisation of an objective function, but in the sense of a systematic choice (according to certain criteria) from given and known alternatives. In contrast to the traditional textbook version, the 'modern' homo oeconomicus is not always an 'optimiser' as already pointed out above. Therefore, the economic model of behaviour is also compatible with the concept of 'bounded rationality' developed by HERBERT A. SIMON (1955).[58] There, the individual behaves as a 'satisficer' and not as an optimiser, he searches so long among the alternatives at his disposal until he meets a 'sufficiently' acceptable one, and then he decides in favour of it. If after a long search, however, no such alternative is to be found, the individual reduces his aspiration level and then looks for an alternative that according to this lower level is acceptable.

This model of bounded rational behaviour is often understood as an alternative to the economic model of behaviour,[59] but this applies only insofar as oneself – as well as many critics, but also many traditional economists – is bound to the concept of the individual who under full information is permanently optimising. Then both models can be tested empirically against each other.[60] When considering the more recent conception of the homo oeconomicus, both these models are special cases of a more general concept, because HERBERT A. SIMON's model also contains

[56] See for this, for example, S. LINDENBERG (1990).

[57] See, for example, G.S. BECKER (1976a) or K. BRUNNER and W.H. MECKLING (1977) and K. BRUNNER (1987).

[58] See for this also H.A. SIMON (1978, 1979), J. CONLISK (1996) as well as A. RUBINSTEIN (1998).

[59] This view is adopted especially by HERBERT A. SIMON himself, but it is also to be found, for example, with RONALD A. HEINER (1983, p. 564).

[60] See for an example A. KAPTEYN, T. WANSBECK and J. BUYZE (1979).

those elements which are decisive for the economic model of behaviour: The distinction between preferences and restrictions, the evaluation (of a part) of the alternatives, the decision among the evaluated alternatives according to one's relative advantage, and with that the possibility to influence this behaviour by a change in the environmental conditions (incentives).

Such concepts of bounded rationality are especially important if there is only little knowledge about the possible actions and above all about the consequences to be expected. In such situations, it is relevant to develop and to apply "rational search procedures".[61] Such procedures should not in every single case, but at least on average, lead to decisions with acceptable results. They can be, for example, approved rules of thumb, but – in the computer era – also highly complicated mathematical algorithms. In this context, HERBERT A. SIMON speaks of "procedural rationality" (1978, p. 8), in contrast to the usually considered 'substantial rationality'.[62]

How 'boundedly' rational the behaviour of individuals is, depends largely on the institutional conditions under which it takes place. Inter alia it is important how well the individuals are (and can be) informed about the alternatives at their disposal, the costs of additional information, and the return of such information, respectively the costs of 'wrong' or suboptimal decisions. If the competitive pressure is high in a market, there is a strong incentive to look for the objectively best action. But in monopolistic (or oligopolistic) situations, 'sufficiently adequate' solutions might be acceptable. Something similar holds with respect to market transparency: if auction and non-auction markets are compared, if, for example, the stock market is compared with the market for consumer goods. It can generally be assumed that markets provide greater incentives for rational behaviour in the sense of the traditional model than other social decision mechanisms like, for example, political or bureaucratic procedures. This may be the essential reason why many social scientists see the application of the economic model of behaviour restricted to the 'economic' area in the traditional sense. From what has been said above, it should be obvious that this is a misunderstanding, because a very specific and restrictive version of it is treated as equivalent with *the* economic model of behaviour. This, however, implies that bounded rational behaviour is excluded from the realm of the theory of rational behaviour and is regarded as being non-rational or even irrational. Actually, however, this is one important variant of rational behaviour, just as the model of expected utility maximisation derived by JOHN V. NEUMANN and OSKAR MORGENSTERN (1944) which is discussed

[61] H.A. SIMON (1978, p. 11).

[62] On the foundations of procedural rationality, see also F. LAVILLE (2000).

below. Bounded rational behaviour is *rational* and not irrational behaviour.[63]

It may be objected against all this that in reality the behaviour of individuals is characterised less by rational (or bounded rational) decisions but more by their adherence to (social) norms, as was presented by RALF DAHRENDORF (1958) in his picture of the 'homo sociologicus'. This sociological model based on EMILE DURKHEIM's (1895) tradition of a non-individualistic sociology or social sciences, is often opposed to the economic model as being the 'more realistic one'.[64] But this comparison is questionable if it intends to express explicitly or implicitly that the homo oeconomicus does not follow rules. Of course, he also does this, because in a world of limited information and limited resources, it is rational to follow rules at least in 'standard situations'. This is not only valid, for example, in traffic, but applies also to many 'economic' decisions in the traditional sense, for example, to many consumer decisions.[65] The individual can also use 'contingent rules', i.e. rules which indicate for a whole class of situations how (according to his own preferences) to behave best.[66] Moreover, during the last decades, an essential point of the (theoretical) discussion about monetary policy has been whether, and if that is the case, which monetary rules should be applied.[67] In any case, however, a reasonable individual, whoever it may be, whether a consumer, an investor or the president of a central bank, will never use such a rule blindly, but will change his behaviour as soon as he registers a relevant change of his acting condi-

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[63] According to this, HERBERT A. SIMON himself writes "that almost all human behavior has a large rational component, but only in terms of the broader everyday sense of rationality, not the economists' more specialized sense of maximization." (1987, p. 2.)

[64] See for this *Chapters 5* and *9*.

[65] Ronald A. HEINER (1983, 1990) even adopts the view that (in many cases) behaviour is only then predictable if individuals do not strictly optimise because of their information problems, but orientate themselves by rules. For a critique of this proposition, see G. KIRCHGÄSSNER (1993a, pp. 188ff.).

[66] In the theory of quantitative economic policy, such rules are derived explicitly by taking into account given preferences and restrictions. See for this, for example, G.C. CHOW (1975), on the criticism of this concept see R.E. LUCAS (1976) and also the survey by K. BLACKBURN (1987).

[67] See for this, for example, R.E. LUCAS (1980), A. BLINDER (1987) as well as J.B. TAYLOR (1998). This discussion goes back at least to M. FRIEDMAN (1948) and his idea of a fixed rule for monetary policy which is still propagated by some economists. Today, the most prominent rule is the 'Taylor Rule' first proposed by JOHN B. TAYLOR (1993). For a discussion of this rule, see, for example, M. WOODFORD (2001).

tions, and possibly adapt his rule to the new situation. Of course, this also applies to contingent rules if a situation emerges which is not yet covered by them. If these rules are not seen absolutely, but as a means being at the individual's disposal to save decision and information costs, there is no contradiction between the economic model of individual behaviour and the application of rules by the individuals.

Whereas the individual can impose upon himself such 'internal' rules and can also change them again if necessary, his actions confront him with 'external' rules of behaviour which are given by society, for example in the form of legal prescriptions. In many cases, it is rational for the individuals to keep to them. This is true because disregarding these rules may be connected with considerable costs for the individual, which must be taken into account when weighing up the expected costs and benefits of breaking a rule. But there are limits to this, too: It may be rational for an individual in some situations to disregard legal prescriptions. If, for example, the traffic lights are red, but no traffic is in sight, pedestrians often cross the street and so violate the traffic law. The danger of being punished for that is extraordinarily small. In the same way, speed limits are frequently exceeded, in certain situations nearly always. The latter happens if, for example, at construction sites on a highway, a maximum speed of 60 km/h is prescribed. In such situations, many drivers obviously exceed the permissible maximum speed, but only few of them by more than 20 to 30 km/h. In such situations, the following happens: Individuals (drivers) compare the utility (saving of time) with the costs (expected fines) of the speed limit violation and then follow that internal rule of violating the external rule, which they expect to maximise their net utility in the 'normal case'. In exceptional cases, if they, for example, know that there are frequent radar controls at a certain place or if they are in a hurry, they do not keep to their own rules (for 'normal' situations), however. Such violations of legal rules do not happen just in traffic, but also often in other, perhaps more important social areas. The strongly expanding shadow economy in many countries has been an obvious example during the last three decades. The result of all this is that social (legal) rules within the framework of the economic model of behaviour just are, nothing more and nothing less, than a certain kind of additional restrictions, the disregard of which can imply costs which might be considerable in some cases.[68]

External rules, however, do not just consist of legal prescriptions, the observation of which is to be safeguarded by threats of legal sanctions. They frequently consist 'only' of socially acknowledged norms that are

[68] As to this problem, see also *Section 4*.2, below.

expected to be followed.[69] Such norms are to be found in every society and also in every minor group of a society. They work in the same way in Western-type states as in criminal organisations, for example, in the Mafia. The advantages of a membership in such an organisation can only be fully used, if it is known, respectively assumed, by the other members that one actually complies with the rules in force. One needs a corresponding reputation. If one loses this reputation, one also loses these advantages or at least part of them.[70] As long as there are no major reasons for breaking the rules and/or as long as there is the danger that the violation of the rules becomes known, a rational individual will comply with the socially acknowledged rules. Consequently, he will not behave like a "rational fool" in the sense of ARMATYA K. SEN (1977) who, quasi as a kind of 'mini-maximiser', tries to use even the smallest short-run advantage for himself without thinking of possible long-term consequences. Thus, socially acknowledged norms are additional restrictions for the actions of rational individuals. What is, however, peculiar about them is the fact that their violation often brings about only small costs in the short-run, but possibly considerable ones in the long-run.

An example for the effectiveness or ineffectiveness, respectively, of such moral rules is the attempt to protect the natural environment using 'moral instruments', i.e. introducing new environmental ethics. Even if all individuals, producers as well as consumers, advocate verbally such a policy, their behaviour will be quite different depending on their situation. In principle, consumers have the possibility of following such rules; they only have to bear the costs of fewer consumption possibilities and/or less leisure time. As experiences with voluntary programmes to reduce trash or recycle show, a considerable part of the consumers will change their behaviour in the desired direction, at least as long as the costs of such behaviour are small. The producers face quite a different situation. A private firm in competition with other firms can hardly bear additional costs to protect the natural environment if the competitors do not have to carry the same costs. Given the state of the environmental policy of the government, it will mainly follow a strategy of (long-term) profit maximisation, even if it shows some verbal engagement for environmental policy for image cultivation. On the other hand, a firm in a safe monopolistic situation is able to bear such costs. However, because this reduces its monopoly rent, owners

[69] As to the importance of social norms for behaviour see, for example, S. GÄCHTER and E. FEHR (1997), K.-D. OPP (1997) as well as H.P. YOUNG (1998).

[70] In Western society this is effected explicitly by being deprived of one's 'civil rights' for some time or permanently, for example, of the active or passive right to vote.

and managers of such firms will have only little incentive to introduce 'expensive' measures to protect the natural environment.[71]

Moral rules in particular show that the transition between external and internal rules is in reality fluent, despite the fact that this distinction is analytically meaningful. As far as moral norms are internalised, they belong to the internal rules. There might be, however, only few (moral) rules that are exclusively internal ones. Typically, moral rules refer to the behaviour against third parties, and societies or communities usually demand that their members adhere to certain such rules. If individuals intend to remain members of such a community, they have to expect sanctions if they violate these rules. As the results of SIMON GÄCHTER and ERNST FEHR (2000, 2002) show, such sanctions have not necessarily to be executed by official agents of the respective community, but are often imposed by ordinary members who do not have any direct benefit but are committed to see that the corresponding norms are observed.

Besides the argument that the behaviour of individuals is mainly rule-governed and that the economic model of behaviour does not include this, another objection that is occasionally put forward against this model is that it is a behaviourist one.[72] This assertion is hardly compatible with the reproach discussed above that the concept of the homo oeconomicus contradicts the findings of psychology. It explicitly or implicitly presupposes that behaviour is explained according to a simple stimulus-response-model as it has been partly used within the framework of psychological behaviourism.[73] This objection fails to see that within the framework of the eco-

[71] On the role of 'moral instruments' in environmental policy see W.J. BAUMOL and W.E. OATES (1979. Pp. 282ff.) as well as G. KIRCHGÄSSNER (2000).

[72] This reproach is made by Marxist authors, for example, by M. WETZEL (1973). For the analysis of it see also KARL-DIETER OPP (1979, pp. 105f.) and HERBERT A. SIMON (1985, pp. 293f.). For the latter, this reproach is hardly understandable just because he is an economist *and* a psychologist.

[73] Of course, one can try to provide the economic approach with a 'psychological foundation' by referring to hypotheses of the psychological theory of learning. HANS J. HUMMEL and KARL DIETER OPP (1971), for example, did this within the framework of their approach of a 'behavioural-theoretical sociology'. (See for this also G.C. HOMANS (1961) and K.D. OPP (1972).) According to VICTOR VANBERG, a '*liberalised* neo-behaviourism' is taken in this approach as a basis, which is far from presupposing mechanical incentive-reaction patterns for human behaviour as might have been the case with the traditional behaviourism of JOHN B. WATSON (1924, 1927). There is, however, no need for such a psychological foundation as far as the economic approach in the social sciences is concerned; many of its representatives even reject it explicitly. (See the discus-

nomic model, behaviour is explained by referring to individual decisions whereby preferences and, therefore, intentions, play a major part. This objection becomes completely absurd, however, if one takes into account that the homo oeconomicus can also act strategically. The restrictions of his actions include the (expected) actions of his interaction partners. For this reason, his choice of the optimum alternative is co-determined by the expected reactions to his actions.[74] Such strategic situations play an important part (not only) in economic life. They are treated formally within the framework of 'game theory'. Since the fundamental analysis of these problems by the mathematician JOHN V. NEUMANN and the economist OSKAR MORGENSTERN (1944), economics can hardly be thought of without game-theoretical concepts.

In the technical sense, a game is a situation in which two or more players interact according to exactly given rules. This interaction can be, as is the case with most games in the traditional sense, non-co-operative (competitive): One individual plays against one or more opponents. But it can also be co-operative, for example, by entering into negotiations with the interaction partners. Every player has a given number of possible actions (strategies) from which he has to choose the optimum by taking into account the (expected) actions of his fellow players. If the same game situation appears repeatedly, one speaks of 'repeated games'. To the situations which are called 'game' here belong not only games in the traditional sense but also many other decision situations, for example, when oligopolists fix their prices, or when party programmes are set up for elections.

Exactly the game-theoretical concepts have proved to be very fruitful for transferring the economic approach into the various other social sciences: There is no social science which could be thought of today without the model of the 'prisoner's dilemma';[75] and that game theory can be applied widely, for example, in political science, is convincingly demonstrated in the textbook by WILLIAM H. RIKER and PETER C. ORDESHOOK (1973).[76]

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sion in V. VANBERG (1975), who himself is a representative of this behavioural-theoretical sociology, and see also the discussion below in *Section 8.2*.).

[74] See for this also J. ELSTER (1979, p. 18 ff.).

[75] As to the prisoner's dilemma see below *Section 2.4*. – According to R.J. AUMANN (1987, p. 468), there have been more than one thousand contributions alone in the field of social psychology in connection with the prisoner's dilemma already at this time.

[76] See for this also R. SELTEN (1971) as well as quite generally for the social sciences M. SHUBIK (1964).

2.3 On Preferences

These considerations, which refer in the first instance to the assumption of rationality, do not remove all objections to the economic model of behaviour. A number of further objections are directed against the treatment of preferences within this framework. Even if the strict division between preferences and restrictions – which is not always without problems – is accepted as a reasonable procedure, there are (at least) three problems concerning the treatment of preferences within the economic approach: (i) the assumption of constant preferences, (ii) the ethical (moral) question as to whether the factual preferences can or should be accepted, and finally (iii) the question of the validity of the self-interest axiom, i.e., what part altruism can or should play in this model. The first two questions are dealt with in this Section, whereas the third one, because of its special relevance to the economic model, will be discussed in the following *Section 2.4* as well as in *Chapter 5*.

When the economic model of behaviour is applied, it is usually presupposed that the preferences of the individuals change much more slowly than their restrictions and that the former can, therefore, be assumed to be constant for the purpose of the analysis.[77] On the other hand, it is not to be questioned that individuals have different preferences nor that these preferences can change in the course of time. However, as long as preferences cannot be observed independently of individuals' actions, the question must be asked whether a research strategy is reasonable explaining human behaviour through changes in the preferences. As SIEGWART LINDENBERG (1984) showed in his debate with CARL CHRISTIAN V. WEIZSÄCKER (1984), relying on preference changes is connected with a number of problems. The most precarious of them may be the great danger of immunising theoretical statements: Any behavioural change can ex post be 'explained' by referring to changed preferences. As long as the preferences cannot be observed independently of the actions, such statements cannot be tested and rejected: they are without empirical content. Therefore, it is generally more reasonable to explain changes in (observed) human behaviour by

[77] GARY S. BECKER and GEORGE STIGLER (1977) even go considerably beyond this position by presupposing identical preferences for all individuals. Contrary to them, ARMEN A. ALCHIAN and WILLIAM R. ALLEN have regarded differences in individuals' preferences as a very constitutive element for microeconomic theory. ("Postulate 5: Not all people have identical preference patterns." (1964, p. 23.)) And some economists as, for example, ARIE KAPTEYN and TOM WANSBECK (1982), B.S. FREY (1997) or W. DOLFSMA (2004) consider also the formation of preferences.

changes of the restrictions (which can be observed independently) than by changes in the preferences (which cannot be observed independently). This especially applies to the non-experimental social sciences.[78]

Another argument against the assumption of constant preferences is that individuals, as long as they do not know (all of) their possible actions, cannot form corresponding preferences either. According to the extent in which their action leeway either widens objectively or the information on it increases, their preferences will change correspondingly. As individuals often do not know exactly the implications of their actions and as they are, therefore, also unable to evaluate them, they will – according to this argument – form their preferences in the course of their actions. For this reason, the argument runs, preferences cannot be seen independently of the possible actions.[79]

This argument can be maintained only as long as preferences are understood to be the actual assessments of the advantages and disadvantages of the respective alternatives. Trivially, these assessments cannot take place before the consequences of the various possible actions are sufficiently known. However, such a restricted notion of preferences is neither necessary nor sensible within the framework of the economic model. As stated already at the beginning, decisions are always based on incomplete information, and this incompleteness does not refer just to the different alternatives as such, but also to their consequences. And as nearly always the possibility of searching for additional information about alternatives exists, one might also – if possible – try preliminarily some alternatives to obtain information on their consequences in order to learn whether they have to be judged as positive or negative.[80] This does not require a change of preferences, i.e. a change of the criteria by means of which these consequences

[78] One can try to get information about the preferences, respectively their changes over time, from *other* actions than those that are being investigated in a specific research context. But on the one hand, in the non-experimental social sciences this is only possible under certain conditions, and on the other, an assumption of constancy is required here as well: The preferences must be constant between the actions which have been examined for comprehending the changes in preferences, and those actions which are to be explained by means of these changed preferences. – As to possible procedures of discovering preferences, see W.W. POMMEREHNE (1987).

[79] See for this also L. v. MISES (1949) as well as I.M. KIRZNER (1973). – In this sense, the approach of HARTMUT ESSER (1996, 1999) discussing the 'definition of the situation' would also belong to the process of preference formation.

[80] Such a procedure corresponds quite closely to the model of bounded rational behaviour in the sense of HERBERT A. SIMON (1955), which was discussed above.

are evaluated. If an individual changes his opinion as to the relative advantage of a certain alternative, because he is now more aware of the respective consequences, so has this nothing to do with a change in preferences; it is a change of the state of information. If, on the other hand, after performing such an action, all the consequences appear as expected, why should the individual then change his preferences?

Due to a too narrow notion of preferences, a change in the preferences is frequently but unnecessarily supposed when changes in the restrictions and/or in the information of individuals are sufficient to explain changes in their behaviour. The present discussion about the preservation of the natural environment is a typical example: the fact that individuals nowadays increasingly stand up for the environment and demand measures for protecting it, is often attributed to a change of their preferences. It is, however, not necessary to resort to this in order to explain this 'environmental consciousness' which has increased without any doubt. One must not forget that environmental goods such as clean air, clean water or quietness are probably 'superior' goods: as income increases, the demand for them rises over-proportionally.[81] Subsequently, the changed environmental consciousness can be partly due to a rise in real incomes (per capita) in the Western industrial countries. Alone, this argument is hardly sufficient for explaining the behavioural changes. What is probably more important is the fact that (many) individuals have realised that the pollution of water and air can have negative effects on themselves. Consequently, they demand political measures against this deterioration. In this case, the cause for the change in their behaviour is due to a change of the information they possess. Additionally, if they realise that pollution is in some respects worse today than was the case, for example, 50 years ago, and if they therefore support demands for environmental protection to which they were once indifferent, they have changed their behaviour because the restrictions of their present or future possibilities of action have changed. It is likely that a combination of all these effects has occurred. Thus, recent demands for an increased protection of the natural environment can, but need not, be connected with a 'change of values', i.e. with a change of preferences.

However, there are not just behavioural changes that need to be explained, but also behavioural differences. Such differences can result from different preferences. If, for example, Catholics – ceteris paribus, i.e. with the same income and the same education – vote differently from Protestants or Atheists, this can hardly be explained by referring to differences in the restrictions. According to the ordinary language usage, this is due to

[81] See for this K. ZIMMERMANN (1984, p. 505).

differences in the preferences. These, however, have not come into existence just by chance and were fixed from the beginning, but have developed over the process of socialisation. This makes it possible to put forward hypotheses and to empirically investigate how certain factors influence preferences in a certain way and, via the preferences, the behaviour of individuals. Such factors can be, for example, belonging to a certain class or religion or even the level of education. Investigations into the influence of these factors have been made, for example, within the framework of the sociological theory of voting, and they supplement the investigations based on the economic approach.[82] Therefore, the assumption of constant preferences cannot imply that these preferences, the process by which they are formed, or the factors influencing them, are excluded from scientific analysis. Whenever this happens, it is to be contradicted.

But do the factual preferences of individuals have to be accepted? Due to the fact that preferences are accepted as they are implicitly or explicitly expressed by individuals, one fails to differentiate between the needs which are actually expressed and the 'true' needs.[83] In a certain sense, this is a 'democratic' point of view: It is presupposed that citizens are mature and self-responsible and that each of them is able to decide best for him-/herself. Despite the fact that this is in line with our Western political tradition since the Enlightenment, it is in contradiction to the view of many philosophers and social scientists who always feel responsible in their emancipatory efforts to provide a scientific foundation for specific norms that enables them to classify certain needs as good or bad, justified or not justified.[84] As already said in the introduction, social scientists who are committed to the principle of value-freedom as proposed by MAX WEBER, cannot claim to have superior knowledge that would enable them to do so. Such elitist arrogance which can be found, for example, with representatives of the 'critical theory' of the Frankfurt School or the constructivist philosophy of the philosophy of science schools of Erlangen and Konstanz, is, or should at least be, far from them.[85]

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[82] As to the comparison of these two approaches, see G. KIRCHGÄSSNER (1980).

[83] One has, nevertheless, to take into account that in certain situations, for example, when demanding public goods, individuals consciously express their factual preferences in a distorted way because of strategic considerations. This, of course, brings about difficulties in comprehending these preferences correctly. See for this W.W. POMMEREHNE (1987).

[84] As to this tradition, which goes back to PLATO, and the potential implications of such views, see K.R. POPPER (1945).

[85] See G. KIRCHGÄSSNER (1982) who criticises these positions.

As already elaborated above, this does, however, not mean that value judgements and along with them the factually expressed preferences are excluded from the scientific discussion.[86] Preferences can be questioned, for example, with respect to their origin, their consistency and also their aptitude for being generalised. But neither the social sciences nor philosophy can release the individuals (and also the social scientists themselves) from deciding for themselves, which value judgements are to be valid, or which preferences they are to accept as the 'right' (true) ones. This does not imply that the individual cannot regard the value judgements of others or even of the majority as being wrong.

Clear and distinct as all this may seem, there are, however, two difficult problems remaining. On the one hand, preferences are not given a priori, but they develop during the process of socialisation in which social institutions participate to a considerable extent. But what value judgements are to be conveyed there? Can social scientists make a (scientific) contribution to decide this question? JAMES M. BUCHANAN (1986) suggests using in this context "a distinction in our thinking between the *constitutional* level of the discourse, evaluation, or choice and the *post-constitutional* level." (p. 86.)[87] On the post-constitutional level, the actual preferences are regarded as given. In this context "pushpin ... *is* as good as poetry" (p. 89f.). "At a second, or 'constitutional' level of discourse, however, existent sets of preferences need not be accepted, and, indeed, one of the aims of such a discourse becomes effective criticism of such preferences with some view toward 'improvement' through appropriate institutional change. Preferences for pushpin are not as good as preferences for poetry, and the social philosopher-cum-scientist has, as one of his central tasks, the design of a constitutional-institutional structure that will promote the emergence of 'better' preferences (for example, poetry)." (p. 90). While on the post-constitutional level, i.e. during the current economic and political process, the social scientist (as all other people, too) must accept the factually expressed preferences of others and cannot differentiate between the 'good ones' and the 'bad ones', on the constitutional level, i.e. 'behind the veil of uncertainty', one can possibly agree as to which institutions are most suited to bring about 'good' preferences. On this level, even unanimity may be achieved. During the current social process, where the economic and political decision procedures that have been agreed on must be applied, every attempt, as well intended as it might be, to prescribe the peo-

[86] See H. ALBERT (1963).

[87] The differentiation between these two levels is discussed in detail below in *Chapter 7*. For its application in the theory of economic policy, see, for example, B.S. FREY and G. KIRCHGÄSSNER (1994).

ple 'better' preferences involves the danger of totalitarism pointed out by KARL R. POPPER (1945). But also on the constitutional level one must be aware of the fact that it is – according to all existing evidence – rather difficult to influence the individuals' preferences with a certain purpose in mind.

Another question has been put forward concerning the 'economic ethics', respectively the 'ethics of capitalism', especially by the contributions from FRIEDRICH A. V. HAYEK.[88] The point is whether the survival of our political and/or economic system requires the internalisation of certain norms by a majority of individuals. FRIEDRICH A. V. HAYEK (1976, 1977) maintains that our system of norms, especially the demand for 'social justice', still means an orientation towards principles which in former times used to be necessary for human beings' survival in small hordes but that this system is not adapted to the conditions of a modern society. According to this view, our moral conceptions are not (yet) sufficiently adapted to the conditions of a modern society. But even if this statement and the conclusions drawn by FRIEDRICH A. V. HAYEK are contradicted – and there are many objections to them[89] – the problem is nevertheless relevant, and is an interesting question for the social sciences as well. It is, however, not really a normative question: Whether the survival of a certain society requires obedience to certain norms or even the internalisation of certain value judgements is a cognitive question that can be answered independently of an assessment whether these norms are good or bad.[90] If this question is answered and unanimity has been reached that the survival of this society is the highest aim, unanimity might also be achieved as to which preferences are 'good' or which are not according to this end. There might, however, be members in the society who are not interested and who, therefore, do not assess such preferences as 'good' either. Even the (possible) fact that certain preferences are necessary for the survival of a society or even of mankind, is by no means a sufficient reason for classifying these preferences as 'good', and even less for the behaviour towards such norms.

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[88] See, for example, F.A. v. HAYEK (1973, 1976, 1979) as well as P. KOSLOWSKI (1982).

[89] See, for example, P. KOSLOWSKI (1982, p. 57) or G. KIRCHGÄSSNER (1995). – See also SCOTT GORDON (1981) who criticises FRIEDRICH A. V. HAYEK's political economy and philosophy.

[90] As the case of abortion shows, conflicts can arise. Somebody who believes that abortions are morally reprehensible might nevertheless come to the conclusion that abortions are necessary to stabilise the population and – in this way – to make the (longer-run) survival of humankind possible.

Moreover, the statement that certain preferences are necessary for the survival of a society or of humankind is, as is always with such statements, to be judged rather sceptically. The present environmental discussion is a good example of this. It is often maintained that a new consciousness has to be developed, an 'environmental consciousness' in order to be able to survive.[91] Yet, human beings need to change their *behaviour* in some areas distinctly. As was shown within the framework of environmental economics, such changes of behaviour are to be achieved, however, much more simply and more effectively not by trying to change the preferences, but by changing the restrictions so that it is in the individuals' self-interest to behave in line with environmental requirements.[92]

2.4 The Assumption of Self-Interest

We have not yet discussed the nature or character of homo oeconomicus. As already mentioned above, he is generally assumed to pursue only his own interests: he is principally eager for his own advantage, he is self-interested. Often he is judged to be even selfish or egoistic.[93] According to FRANCIS Y. EDGEWORTH the assumption "that every agent is actuated only by self-interest" is even "the first principle of Economics" (1881, p. 16). Although the utility of others can be included in his utility function and in this way it is possible to represent altruism, this seldom happens. Therefore, the question is whether individuals actually nearly always behave self-interestedly or if they also behave altruistically or 'morally', and in which situations such behaviour might occur. From this the question is to be distinguished whether the assumption of self-interest may or may not be appropriate for methodological reasons, even if one knows that this assumption can be wrong in some or even many situations.

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[91] See for this, for example, A. AUER (1984, pp. 71ff.) or F. FRASER-DARLING (1969).

[92] Even then, it is difficult to enforce behaviour that is oriented towards ecological sustainability. As this demands restrictions that benefit mainly the members of future generations, it is hard to see how we can set incentives, which force individuals to follow such behaviour driven by their self-interest. See for this, for example, G. KIRCHGÄSSNER (1997a). – See also W.J. BAUMOL and W. OATES (1979) as to the discussion how effective the various instruments of environmental policy are.

[93] In the terminology of OTFRIED HÖFFE (1975, pp. 42ff.) man has a 'substantial' in contrast to a 'formal' self-interest; the latter is corresponding to the weak rationality principle discussed above. – For the development of ideas of self-interest, see D.H. MONRO (1987).

Self-interest and especially selfishness is generally not considered to be a positive character quality, which makes it understandable that many people refuse to accept this quality as a general behavioural assumption. After all, we should be able to recognise ourselves in such an (economic) model of behaviour, and we do not like to see ourselves too 'unpleasantly'. Is not (almost) everyone convinced that at least he or she is not striving only for his/her own advantage?[94] And many a person may ask whether politics should really be based on taking advantage of people's selfishness instead of appealing to their insight.

First of all, it may be pointed out that homo oeconomicus may not be quite so unpleasant. After all, he behaves neutrally towards other people. As long as he is in no special relation to him, he is indifferent about his 'neighbour's' well or unwell-being. He looks at him neither with envy nor with maliciousness, but neither is he pleased about his well-being. He behaves like the priest and the Levite in the parable of the good Samaritan in the gospel of St. Luke (10: 25 – 37) who saw and passed the man attacked by robbers. This 'mutually disinterested rationality' is certainly not a distinct Christian behaviour, but probably an apt description of our behaviour in many situations.[95] Not only entrepreneurs behave in such a way when maximising their profits, although in this situation this assumption might be most likely plausible.[96] Occasionally, professors behave in such a manner as well, and not only those of economics, but also, for example, those

[94] Another reason why this assumption is often refuted might be that we recognise in it an aspect of ourselves, which we know quite well but do not appreciate very much. See for this also HANS G. NUTZINGER: "Man appears in this model as a rational advocate of his own interests. It is perhaps not only the simplicity of this conception but also that it is close to reality which leads to an emotionally overloaded rejection of this approach, as it provides us an unwanted view in our own, hidden mirror image" (1997, p. 85).

[95] Contrary to this, KENNETH. E. BOULDING writes: "Selfishness, or indifference to the welfare of others, is a knife-edge between benevolence on the one side and malevolence on the other. It is something that is very rare." And he continues: "We might feel indifferent toward those whom we do not know and with whom we have no relationships of any kind, but toward those with whom we have a relationship, even the frigid relationship of exchange, we are apt to be either benevolent or malevolent." (1969, p. 6.) But even if the latter was true, the assumption of 'neutral' behaviour might nevertheless be an apt characterisation of 'average' behaviour.

[96] At least the statement which is frequently heard that the economic model with its assumption of egoism cannot be transferred to areas outside the economy indicates that egoism or self-interest is, if at all, most likely to be accepted and tolerated with respect to economic relations. – A similar argumentation is presented by K.W. ROTHSCHILD (1992, p. 23).

of philosophy, law, sociology, or even theology. And like the profit-maximising entrepreneur, they should not be reproached for such behaviour; but one should take it into account. Already FRIEDRICH II of Prussia wrote in his political legacy of 1752: "Who believes that the world is crowded by villains, thinks like a misanthropist; to imagine that all animals with two legs and without wings are honest people, means to be mistaken like a fool."[97] Thus, such behaviour is not only to be seen in our capitalist world, but also elsewhere, and human nature as presupposed in economics might not be so unrealistic. And the analysis of actual behaviour should be based rather on a realistic image of human beings than on an optimistic ideal picture.[98]

In addition, there are many situations in which individuals just cannot help behaving self-interestedly. An entrepreneur who wants to maintain his share in a competitive market cannot provide his employees with extraordinary social or monetary benefits, if he is afraid that a price increase, due to increased costs, endangers the sale of his products. After all, this would not be in the workers' interest either, at least as soon as it would endanger their jobs.[99] Similar implications apply to many consumer decisions.

There are also many situations, however, where people behave selfishly despite the fact that they could behave differently and – from a moral point of view – perhaps should do so. This holds especially if they try to reach

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[97] Translated from R. DIETRICH (1986, p. 273).

[98] In this context, the position of ADAM SMITH, the founder of classical political economy, is interesting. In his main philosophical work *The Theory of Moral Sentiment* he expressly admits altruistic behaviour to man when beginning this book with the following sentences: "How selfish soever man may be supposed, there are evidently some principles in his nature, which interest him in the fortune of others, and render their happiness necessary to him, though he derives nothing from it except the pleasure of seeing it." (1759, p. 9.) Nevertheless, he also writes in the same book: "We are not ready to suspect any person of being defective in selfishness." (1759, p. 304.) And in his main economic work published seventeen years later, *An Inquiry into the Nature and Causes of the Wealth of Nations* (1776), he exclusively proceeds from self-interest. (See for this R.H. COASE (1976), D. COLLARD (1978, p. 51 f.) as well as S. LOFTHOUSE and J. VINT (1978, p. 588 ff.).

[99] Of course, this does not mean that firms are generally not in a position to provide their workers with social benefits nor that the latter must always go to the debit of the firm's profit. On the contrary, there are examples where additional social benefits cause an increase of the firm's profit due to improved motivation of the workers. In this case, however, a self-interested entrepreneur is well advised to introduce such benefits. An altruistic motivation is not needed.

their objectives with guile, if they behave 'opportunistically'.[100] Individuals do sometimes break their promises if it is to their advantage. Or they pass on incomplete or biased information to make use of informational asymmetries. This happens not only on the market for second-hand cars, but, for example, also in claims against insurance companies. Moreover, the not infrequent practice of calling in sick (without a serious reason) on Mondays and Fridays is a kind of opportunistic behaviour. As OLIVER E. WILLIAMSON (1985) has shown, many social institutions have developed with the purpose of reducing opportunistic behaviour. One of the main functions of civil law is to ensure that contracts are correctly adhered to. According to tort law, in some cases opportunistic behaviour can even be punished. But many mechanisms have also been developed outside legal regulations that provide strong incentives to act according to contractual agreements. This holds, for example, for bonus systems of health insurance companies or for securities in relation to credit contracts. If one could generally assume that individuals are following their self-interest in an honourable way, i.e. without guile, such institutions would hardly be necessary.

Finally, in many cases the true motivations of individuals are of little relevance or no relevance at all, for the social result of their actions. As THOMAS C. SCHELLING (1978) showed by numerous examples, there are many situations in which the conditions of acting are so fixed that individual behaviour influences the individual result, but not the social one. This applies, for example, to games, in which it is settled in advance that there will be one winner and several losers, independently of how good the players are. The performance of the individual and his motivation are important for the outcome as to who will be the winner in the end, whereas the social result that there will be just *one* winner, is independent of that. The motivation of the individuals is irrelevant for the social result. Individual motivation is also not very relevant in many cases where a change in the aggregate behaviour results from a similar change of the action conditions of all individuals: A reduction of the demand for petrol stemming from a considerable rise in petrol prices is, for example, largely independent of the consumers being egoistic or in any sense altruistically motivated.

But this is not generally valid. If, therefore, the question of self-interest, and with it the question of motivation, of homo oeconomicus is important

[100] The following definition for opportunism is given by OLIVER E. WILLIAMSON: "By opportunism I mean self-interest seeking with guile. This includes but is scarcely limited to more blatant forms, such as lying, stealing, and cheating. Opportunism more often involves subtle forms of deceit. Both active and passive forms and both ex ante and ex post types are included." (1985, p. 47.)

in our context, this has nothing to do with a moral judgement of individuals' behaviour. As mentioned in *Chapter 1*, we are interested in a 'positive' theory to explain human behaviour, and not in a normative one to judge it. The essential reason for dealing with the question of motivation of individuals is to be seen in the fact that there are situations in which the social result of individual actions depends considerably on the motivation of the individuals, whether their behaviour is purely self-interested, non-co-operative, or even opportunistic, or co-operative, respectively. The result of non-co-operative behaviour may altogether be distinctly worse for the persons concerned than the result of co-operative behaviour. In this context, 'co-operation' describes behaviour that is governed by certain rules or norms. It is advantageous for all members of the corresponding society or group if all or at least a large majority of the individuals behave according to these rules. Nevertheless, their observance imposes costs on the individual and cannot be enforced by explicit sanctions or probably cannot be enforced at all, so that the possibility of norm-deviating behaviour exists. Whereas a purely self-interested individual will break such a rule, a co-operative individual might keep to it and thus give away a potential individual utility gain for himself.[101] Some individuals, and in certain situations even many individuals can actually be observed to behave altruistically, respectively co-operatively. But then a theory of individual behaviour should also be able to comprehend such behaviour.

The basic structure of such situations can be shown by means of the following 'game situation', which according to A.W. TUCKER is called 'prisoner's dilemma'.[102] Two prisoners are accused of having committed a series of crimes together. The public prosecutor's evidence is weak: Without confessions, he can convict both of them only on minor infractions. Therefore, promising no punishment, he tries to win each of them as chief witness against the other one. This results in the following situation for both prisoners who cannot communicate with each other: If both confess, each of them will be punished severely with ten years of imprisonment. If neither confesses, they will both get off with a relatively light punishment of two years. If only one of them confesses, he will get off without punishment as chief witness, whereas the other one will be severely punished with 12 years of imprisonment. This situation can be shown in the following diagram:

[101] Thus, the point in this discussion is not beneficial behaviour in the traditional sense.

[102] See for this, for example, R.D. LUCE and H. RAIFFA (1957, pp. 94ff.).

		Prisoner 1
	Confessing	Non-confessing
Prisoner 2: Confessing	10 years for both	12 years for 1 and no punishment for 2
Prisoner 2: Non-confessing	no punishment for 1 and 12 years for 2	2 years for both

Figure 2.1: Prisoner's dilemma

This can be simplified and generalised by the following 'payment matrix', where 'payment' in this context means years of imprisonment:

		Individual 1
	Strategy A_1	Strategy B_1
Individual 2: Strategy A_2	(-10/-10)	(-12/0)
Individual 2: Strategy B_2	(0/-12)	(-2/-2)

Payment to: (Player 1/ Player 2)

Figure 2.2: Payoff matrix for the prisoner's dilemma

In this situation, it would be reasonable for both prisoners to behave co-operatively and not to confess. Neither, however, can be sure that the other will not confess in the end. Therefore, it is sensible for each of them (it is individually rational) to confess as this is an advantage for him whatever the other one may do.[103] As a consequence, both will confess and will receive ten years imprisonment.[104]

[103] This is the Maximin solution of game theory. See for this, for example, E. RASMUSEN (1989, p. 103).

[104] Another illuminating example of this situation is given by J.L. MACKIE: "Two soldiers, Tom and Dan, are manning two nearby strongposts in an attempt to hold up an enemy advance. If both remain at their posts, they have a fairly good chance of holding off the enemy until relief arrives, and so both survive. If they both run away, the enemy will break through immediately, and the chance of

More generally speaking, the situation in which the socially 'best' outcome is achieved, demands that the two individuals co-operate with each other.[105] Nevertheless, it is 'rational' for each of them to behave non-co-operatively as this is even more advantageous for them, provided that the counterpart behaves co-operatively. If, however, both behave in that way, the socially best outcome is not brought about, but possibly even the socially least desired one. This can be avoided by explicit or implicit commitments that reward co-operative behaviour. In many cases, this can be reached through social institutions so that also self-interested individuals behave co-operatively and, thus, in the socially desired manner.[106]

Co-operation does not necessarily lead to a socially better (Pareto-superior) outcome because the situation of non-involved third parties can be worsened. (Even in the original example of the prisoner's dilemma, the position of society is made worse by the co-operation of the two prisoners, because it has an interest that both are punished.) Cartels, for example, have the structure of a prisoner's dilemma, and co-operation between their members, be it agreements about prices or the segmentation of market area, are legally prohibited, because consumers who are not taking part in these decisions have to take the burden of them. Thus, co-operation leads in many cases, but not always, to social improvement.

The prisoner's dilemma is the most prominent, but only one example of social dilemma structures, i.e. of situations in which rational, self-interested behaviour leads to a result that is sub-optimal for those who are taking part in this decision but which could be improved by co-operation. RUDOLF SCHÜSSLER (1990) has, for example, discussed several other social dilemmas, which are much more difficult to solve than the prisoners' dilemma.[107] It is, for example, more difficult to find a solution if one finds

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either of them surviving is markedly less. But if one stays at his post while the other runs away, the one who runs away will have an even better chance of survival than each will have if both remain, while the one who stays will have an even worse chance than each will have if they both run" (1977, pp. 115ff.).

[105] In this context the 'socially best outcome' is to be seen in that outcome which would be chosen by the individuals if they did not know in which position they are, i.e. if they were – according to JOHN RAWLS' terminology – behind a 'veil of ignorance'. (For this conception, see *Section 7.1* below).

[106] In *Section 7.2,* it will be shown that a 'reasonable' social order should contain exactly those rules that govern self-interested behaviour in this way.

[107] It is possible to interpret social problems quite generally as problems to solve social dilemma structures, as is done, for example, by KARL HOMANN and ANDREAS SUCHANEK (2000, p. 35ff.). It has to be taken into account, however, that not always mutually beneficial solutions are possible: changes of the status quo almost always produce winners and losers. (Technically speaking, this is

oneself in a game situation that is called the 'battle of the sexes'. The usual standard example is a married couple who want to go out in the evening.[108] She wants to go to the theatre, whereas he would like to go to a football match. Although they have little interest in the other's entertainment tastes, they want to spend the evening together. This game can be presented as follows in a payment matrix where the numbers represent the 'utility equivalents' of the two individuals concerned:

		Wife	
		Football	Theatre
Husband	Football	(2/1)	(-1/-1)
	Theatre	(-5/-5)	(1/2)

Payment to: (Husband/Wife)

Figure 2.3: Payoff matrix for the battle of the sexes

In contrast to the prisoner's dilemma situation, (simple) co-operation does in this case not lead to a solution which would be advantageous to both, but one of the partners/players must behave 'altruistically': he/she must sacrifice his/her own entertainment choice to carry through the larger interest in spending the evening together. 'Compensation' can only be achieved if this game is played repeatedly by the same partners, and when they go alternately to one performance one time and to the other the next time.

If a purely egoistic behaviour was presupposed, sub-optimal solutions would generally be expected to come about. But we can daily observe altruistic behaviour in such situations, i.e. behaviour that is at least incompatible with (narrowly defined) self-interest. This also applies to the 'battle of the sexes', i.e. with respect to behaviour in partnerships and families. The behaviour within a family is, of course, no problem for the traditional

always the case if we move along the Pareto frontier, i.e. if nobody can be made better off without making someone else worse off.) This is especially the case if distributional questions (or questions of justice) are to be discussed. For the (economic) discussion of problems of justice, see also J. ROEMER (1996).

[108] See for this, for example, R.D. LUCE and H. RAIFFA (1957, pp. 90ff.), as well as E. RASMUSEN (1989, pp. 34f.).

economic theory. There the family members mainly appear as consumers, and the theory of consumer behaviour generally assumes that the private household is altogether the relevant unit. In other words, altruism is presupposed within the family or – what might lead to the same result – identical or interpersonally comparable utility functions that are together optimised, whereas none of this holds outside the family. This procedure can be justified with the observation that altruism is mainly to be found where personal relations are very close and this is (or should at least be expected to be) given usually in families (respectively in similar partnerships).[109] For the analysis of the relations between the family (the private household) and other agents, self-interest can again be presupposed. The price for this procedure is, however, that behaviour within private households is excluded from traditional economic analysis.[110]

The situation becomes different if the number of players is not just two or small, but very large, and if the incentive structure is nevertheless the same as with the prisoner's dilemma. The larger the number of players, the more difficult it is to reach an agreement, making the incentive to behave co-operatively even smaller for each player.

In economic theory, this situation is dealt with in the theory of 'public' goods. Goods, independently of whether they are sold in markets or not, are usually characterised by the following two properties: (i) There is the principle of exclusion: Everyone who is not entitled to and/or is not willing to pay the corresponding price, can be excluded from the consumption of these goods. (ii) The consumption 'rivals': If goods are consumed by one individual, they cannot be consumed by another individual. Goods, which have these two properties such as bread, butter, cars or cigarettes, but also many services, are called 'private' goods. If these goods are offered on a market, everyone who wants to consume such goods is forced to contribute to their production by paying for them. No special public or social provisions are necessary to ensure this.[111]

'Public' goods are those that do not have at least one of these properties. For our context those goods are especially relevant where an exclusion is

[109] In the same way, the mutually negative feelings may also be very strong within families or similar partnerships, especially if these are on the point of breaking apart.

[110] There are studies that are more recent where the allocation within the private household is also considered. See, especially, G.S. BECKER (1981, 1988), but also, for example, M. BROWNING and P.A. CHIAPPORI (1998).

[111] For the purposes of our argumentation, individuals who come into possession of these goods illegally, for example, through theft, are excluded here.

either not practicable or – for whatever reasons – not executed.[112] In such a situation, it is rational for self-interested individuals not to contribute to the production of such goods but to behave as a 'free rider'. This is especially the case when the group is so large that one's own contribution to the production of these goods is negligible. There we have again the situation of a prisoner's dilemma, but in contrast to the above, it is not with just two, but with a great many players. A voluntary co-ordination in order to bring about co-operation in this situation is hardly possible any more. In particular, if the individual contributions, which are necessary to bear the production costs, are non-negligible, the respective goods are not produced without coercive power or at best on a sub-optimal scale. Similarly, 'public bads', like pollution, are produced on too large a scale.[113]

This situation exists for many public services. The guarantee of legal security is such a public good for example. No citizen (of a democratic society under the rule of law) can be excluded from it. The provision and maintenance of this good, however, require considerable expenditure. Although (nearly) all citizens benefit from it, there is no country in which the citizens rely (solely) on voluntary contributions to finance this expenditure. Instead, taxes are used, i.e. payments which are collected with usage of sovereign coercion. It is completely rational that the same citizens, who are not willing to make such payments voluntarily, agree that the government can collect these taxes with coercion in order to guarantee the benefits that are to the advantage of all citizens.

However, such public goods are not just benefits provided by public authorities. Traffic security on roads and motorways is another example of such a public good. If in the Federal Republic of Germany, all drivers

[112] If, in addition, consumption does not rival, these are 'pure public goods', otherwise these are 'public goods in the wider sense' or 'commons'. In contrast, 'public goods in the narrow sense' are goods where exclusion is possible but consumption does not rival. For the theory of public goods which goes back especially to PAUL A. SAMUELSON's (1954) work, see, for example, R.A. MUSGRAVE and P.B. MUSGRAVE (1976, pp. 49 ff.).

[113] This does not mean, however, that we always need a (central) governmental authority and its coercive power to ensure the production of such a good (or to prevent over consumption of commons). As ELINOR OSTROM (1990) shows, there are quite a number of institutional arrangements which allow the production of (especially local) public goods. On the other hand, even in these cases it is necessary that sanctions are available which allow the prevention of deviating (free riding) behaviour. Without such possibilities, i.e. solely with voluntary contributions of the individuals concerned, even the production of local public goods hardly takes place except for 'low-cost situations'. See for this also *Chapter 5* below.

would voluntarily keep to the recommended maximum speed of 130 km/h, traffic safety would increase, i.e. more of this good would be produced. For every individual driver, however, it would be even more advantageous if all others kept to this recommended maximum speed except himself. Perhaps not all, but many German car drivers think in this way; hardly anyone, whose car is fast enough, abides by this speed limit. Therefore, the good 'traffic safety is not produced to the corresponding extent. It is important to see that even drivers who themselves support a speed limit rationally do not *voluntarily* abide by such a limit, because they would have to bear costs in the form of additional transportation time, but without any measurable effect on the social outcome (the amount of traffic safety).

Today the problems arising from such situations are most precarious with respect to the preservation of the natural environment: Clean air, clean water and quietness are public goods: while the consumption rivals at least in densely populated industrial areas, exclusion is not at all or hardly possible.[114] The situation becomes especially precarious if these are 'international public goods', in other words in situations where the people who are affected come from several countries. International fishing grounds are a typical example: Self-interested rational behaviour of the individual fishermen or the fishing nations can lead to the extinction of the fish population due to over-fishing, which would result in the destruction of the fishermen's existential basis. But also global environmental problems like the 'ozone hole' or 'global warming' as a consequence of the saturation of the atmosphere with CO_2 are problems of international public goods.[115]

As long as pure self-interest is presupposed within the framework of the economic model of behaviour, free-rider behaviour can be expected by single individuals in such situations. This behaviour is widely spread as could be shown by means of many other examples apart from those mentioned above. Nevertheless, there are also cases in which citizens (regularly) pay voluntarily contributions to social institutions, which are useful for everybody, but where the individual contributions have only marginal effects. Voter turnout in democratic elections, which is discussed in more detail in *Chapter 5*, may serve as an example. If it is presupposed that the political system of (Western) democracies is advantageous for (nearly) all people concerned, that, however, its permanent existence can only be secured through voluntary contributions by a considerable percentage of citi-

[114] See for this also *Section 4.2* below.

[115] See the classical contribution of GARRETT HARDIN (1968) for further examples as well as for the question of overpopulation, which can be discussed in this context.

zens and that the participation in an election or referendum is such a contribution, the high turnout, which can be observed in many democracies, is an example of behaviour which cannot be explained by self-interested individual calculations.[116] Such 'co-operative behaviour' between people, who do not know each other, has also been proved in experiments.[117] Thus, citizens do not always and everywhere behave purely egoistically, but partly also co-operatively, respectively altruistically.

Such behaviour may only seem to be altruistic. This is obviously the case when a contribution to a public good is made solely because together with it a 'private good' is acquired that can be received only by those who have paid their contributions.[118] This argument, however, does not hold out for voter turnout as long as voting is not mandatory (and there are no legal sanctions for not voting) and as long as voting is secret. Furthermore, behaviour only may appear to be altruistic if individuals behave strategically according to their own long-term self-interest, which might contradict their short-term interests.[119] Such 'reciprocal altruism' was examined by PETER HAMMOND (1975), but above all by ROBERT AXELROD (1984),[120] and it plays a part in iterative games. If somebody meets the same person repeatedly, it is reasonable to behave co-operatively at first and then to adjust the behaviour in the following turns to the fellow player's behaviour in the preceding turn, i.e. to respond to co-operation with co-operation and to non-co-operation with non-co-operation. The expectation is that this kind of behaviour is an incentive for the partner(s) to behave co-operatively even if this means giving up short-term profit chances.

A series of experiments has shown that such 'tit-for-tat' actually is a superior strategy in the long run (in iterative two-person prisoner's dilemma games).[121] But even this is not sufficient to give a complete explanation for

[116] See for this G. KIRCHGÄSSNER (1980), R. ZINTL (1986), and the discussion in *Chapter 5* below.

[117] See for this R.M. DAWES and R.H. THALER (1988). – As to the extent of the free-rider behaviour see, however, W. STROEBE and B.S. FREY (1982).

[118] See the discussion of the supply of such 'joint products' within the theory of interest groups going back to MANCUR OLSON (1965) which is dealt with in *Section 4.1.3*.

[119] See for this also T.C. SCHELLING (1978b).

[120] See R. AXELROD and W.D. HAMILTON (1981). – A biological and (based on it) a psychological explanation of the development of reciprocal altruism is to be found with W.D. HAMILTON (1964) and in ROBERT L. TRIVERS (1971).

[121] This strategy goes back to ANATOL RAPOPORT. He successfully applied it in both turns of a 'computer contest', which was carried out by the University of Michigan. ROBERT AXELROD invited professional game theorists to send in computer programmes containing a rule that, after each turn in an iterative pris-

the observable altruistic behaviour. Individuals behave co-operatively towards others – not always, but frequently – not only when they do not know them, but also if any further interaction can be excluded. FRIEDRICH SCHNEIDER and WERNER W. POMMEREHNE (1981) could, for example, show co-operation in experiments with 'one shot games'.[122] Obviously, individuals behave as free riders to a much smaller extent than is assumed by traditional economic theory. They "have a tendency to co-operate until experience shows that those with whom they are interacting are taking advantage of them."[123]

As already elaborated above, co-operative, respectively altruistic, behaviour in this context means the adherence to norms whose observance is advantageous for all members of this society or group, whose observance, however, cannot be forced by explicit sanctions or cannot be forced at all. Usually, it is attempted to internalise such norms during the process of socialisation. It makes sense to try to achieve this, even for a society consisting only of self-interested individuals. Thus, for example, teachers point out the advantages of democracy and the necessity of a high turnout for the functioning of a democracy in order to internalise the 'civic duty of participating in elections' to their students. If citizens participate later on despite the obvious costs of participation, the reason might be that they want to evade 'psychic costs': According to the theory of cognitive dissonance, there are costs if individuals consciously behave against the norms which they have internalised (and therefore also accepted).[124] These psychic costs

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oner's dilemma game, requires a decision whether the player will behave co-operatively or non-co-operatively in the next turn. The whole 'history' of the game could also be taken into account. All strategies submitted were used by the players to play against all the others. 'Tit-for-tat' resulted altogether in the highest payments in both turns. (See R. AXELROD (1984, pp. 27 ff. as well as pp. 173 ff.) – However, the range of co-operative behaviour which has been achieved in this way, may be less broad than is mostly assumed. See for this K.D. OPP (1988).

[122] Moreover, experiments with repetitive games showed that a considerable number of players were still keeping to the co-operative strategy even in their last run of the game, although it was clear that further interaction was excluded.
123. R.M. DAWES and R.H. THALER (1988, p. 191).

[124] For the theory of cognitive dissonance developed by LEON FESTINGER (1957) see, for example, K.D. OPP (1970, pp. 251ff.), as well as the literature presented there. E. ARONSON (1972, pp. 85 ff.) does not only present this theory, but criticises it and points out its limits (pp. 131 – 139). – G.A. AKERLOF and W.T. DICKENS (1982) show how this theory can be used in the framework of economic analysis.

may be greater than those (real) observable costs resulting from obeying the norms, in our case from participating in an election.

As plausible and scientifically founded as all these considerations might be, considerable problems within the framework of the economic model arise if such psychic costs (or psychic satisfactions) are taken into account. Any behaviour can be explained with psychic costs, but none can be excluded. Then, human beings always act in their own interest. The theory would be immunised by this and be without empirical content, i.e. without explanatory power.[125] Therefore, it is advisable to explain human behaviour without resorting to psychic costs, whenever possible.[126]

As soon as it is possible, however, to objectively measure processes in the human brain the danger of immunisation can be avoided, even if such costs or benefits are taken into account. Today, such processes are investigated in the new rising field of ‚Neuroeconomics'.[127] By scanning the brain of subjects, DOMINIQUE J.F. DE QUERVAIN et al. (2004), for example, show that punishment actions, which incur costs on those who are punishing,[128] activate the same areas of the brain which are also activated by actions which generate (in the traditional sense) satisfaction. This allows the inclusion of such psychological effects in a non-tautological (and empirically testable) manner in economic models. In a certain way, this rehabilitates the traditional general model of homo oeconomicus: He tries to get as much satisfaction as possible, and such satisfaction may also result from actions, which contradict the narrow version of the model, which considers only monetarily measurable aspects. The person who is considered here increases his/her utility by actions, which are costly without increasing her/his chances of consuming traditional consumption goods.

In many cases it is, however, not necessary to resort to such psychic costs (or satisfaction), if all social and not just the 'economic' effects in a more narrow sense are taken into account. A teacher, for example, who explains to his students the importance of voting, will become considerably less credible in their eyes if they find out that he himself does not vote.

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[125] See for this also H. MARGOLIS (1982, pp. 59 f.) as well as ERNST TOPITSCH: "The statement that human beings are always acting according to their self-interest can either be formulated tautologically, and then it is irrefutable but without content, or it can appear as a factual statement; then it is refutable and, moreover, probably wrong." (1965, p. 26.)

[126] As stated above, the objective in our context is to explain 'typical' behaviour. The psychologist who is interested in the behaviour of single (specific) individuals is in a different situation. See below *Section 8.2*.

[127] For introductions in this area see P.J. ZAK (2004) or C.F. CAMERER, G. LOEWENSTEIN and D. PRELEC (2004, 2005), E. FEHR (2006) or J. PURDY (2006).

[128] See for this *Section 5.2* below.

Workers who are organised in trade unions would react similarly against other members of their organisation.[129] One of the functions of the press in our society is among other things to point out the offences of norms by (prominent) members, even if these offences are of no legal nature. The fear of this modern version of a 'pillory' might induce many people to abide by social norms, even if they do not accept these norms as founded and/or if their observance is connected with costs.[130]

All this does not imply that altruism is irrelevant for human behaviour. However, to include it in the analysis requires the formulation of some very special hypotheses, which can be derived (from general assumptions) and tested empirically unless one wants to risk the immunisation of the theory and with it the loss of empirical content.[131] Therefore, the assumption of self-interest remains in most cases. But what is the foundation that it is possible and, moreover, even makes sense, to adhere to this assumption, although it is quite obvious that altruistic behaviour exists?

At first, it should be mentioned once again that there are many situations in which the question of self-interest or altruism is of secondary importance for the analysis. If certain alternatives become more attractive and others less through political measures, we can assume that individuals will shift their behaviour towards the now (relatively) more attractive alternatives. It is only the changes of restrictions, which matter here, as long as the preferences, and with them the motives, of acting people remain constant. Thus, for example, essential statements of the economic theory of politics can be maintained if altruism and not self-interest is presumed with

[129] If religious communities threaten their followers with punishments after death ('purgatory' or 'hell') in the case of disobedience to norms, this is, of course, also a threat with considerable sanctions.

[130] See, for example, K.D. OPP (1985a) as to the effects (effectiveness) of so-called 'soft incentives'. Today, the internet provides additional possibilities for such pillories that are increasingly used. Sexual offenders are, for example, made public in some states of the United States even after having served their sentence. This makes it nearly impossible for them to live a 'normal life'. But this means is also used by pupils and students against teachers and university professors.

[131] One might try to explain altruism 'biologically' respectively 'genetically' as this is done in socio-biology today. (See for this besides W.D. HAMILTON (1964) and R.L. TRIVERS (1971), H. MARGOLIS (1982, p. 26 ff.) or D.P. BARASH (1977, p. 76 ff.). But this is not the subject of discussion here, as our explanatory attempts are restricted to the social sciences. (See *Section 8.3* below as to socio-biology).

individuals.[132] The decisive assumption in these situations is that of rationality and not that of self-interest.[133] On the other hand, we must bear in mind that altruism is not usually the 'typical' behaviour of individuals in most situations; typical is rather the 'neutral' assumption of 'mutually disinterested rationality' – in the words of JOHN RAWLS (1971) – which allows the exclusion of altruism and malevolence. The focus of interest is to bring out the main features of human behaviour, to be 'realistic' in this understanding, and not to describe human behaviour in all its facets.[134]

Moreover, as will be discussed in *Chapter 5*, it depends largely on the costs whether people behave altruistically or follow their self-interest. The higher the costs of altruism, the lower – ceteris paribus – the readiness of the people to behave altruistically. In the case of typically economic decisions, especially decisions concerning production processes, altruism is normally quite expensive. On the other hand, it is relatively cheap to be al-

[132] See for this G. BRENNAN and J. PINCUS (1987) responding to J. QUIGGIN (1987).

[133] ARMEN A. ALCHIAN (1950) presents a much more pointed argument according to which individual motivations are completely irrelevant because of the selection pressure in competitive markets. We shall deal with this argument and the discussion around this position in *Section 8.3*.

[134] This 'realistic' interpretation of homo oeconomicus is criticised by KARL HOMANN, because it would block the way to the idea that "homo oeconomicus is an artificial figure which has been constructed because of certain research interests." If economics would try to achieve an adequate model of human nature "it would at least with homo oeconomicus – or with its more elaborated development REMM – and with its whole model building from the outset be fighting a losing battle." (1988, p. 111.) Of course, the homo oeconomicus is a theoretical construction, and this requires considerable abstractions from reality. These abstractions, however, must not lack the essential characteristics (for the respective investigation), if this construction is to be used for explaining actual behaviour. In this sense, therefore, the 'proximity to reality' of the behavioural model is essential for its performance. Similarly, MILTON FRIEDMANN writes: "the relevant question to ask about the 'assumptions' of a theory is not whether they are descriptively 'realistic,' for they never are, but whether they are sufficiently good approximations for the purpose in hand."(1953, p. 15). And JOSEPH A. SCHUMPETER wrote already much earlier: "Surely, neither our 'assumptions' nor our 'laws' belong to the world of the phenomena themselves. But from this no objection against them follows, as this does not prevent that they *fit* to the facts. Where does this come from? Only because we have been arbitrary, but reasonably when in constructing our schemes, we have designed them with regard to the facts. ... Thus, we will not misuse our sovereignty, but make such assumptions, as they are imposed on us by the facts, and from which we reasonably can expect that they are not run down by them." (1908, p. 527.)

truistic in referenda and to vote for redistributional programmes even if this has a negative impact on one's own income, as the probability that oneself is pivotal, i.e. that one's own vote decides whether this programme will be introduced or not, is extremely small. One might agree with JOHN QUIGGIN (1987) that citizens behave more altruistically, and therefore differently, with respect to political compared to economic (market) decisions. However, first of all, this holds only for voters but hardly for other political actors like politicians or the representatives of interest groups, and, secondly, this only holds for voters because at the ballot box the costs of altruistic behaviour are quite small and the psychic cost of non-altruistic behaviour might be considerable. Thus, such behaviour is compatible with the economic model of behaviour.[135]

Finally, in some situations it makes sense to presuppose contra-factually that individuals behave self-interestedly or even malevolently towards each other. For example, if one wants to know whether certain rules in the family law make sense or not, the question is not so much whether these rules prove effective with both partners behaving altruistically. As long as they do so, such rules are hardly required at all; the partners will come to an agreement without being helped by legal regulations. If the marriage is, however, broken and if the partners possibly meet each other perhaps even with hate, it is necessary that the rules of the family law prove effective (for example for the protection of the weaker side and especially the children). For such cases, it is really necessary to presuppose at least self-interested, if not even malevolent, behaviour, if they are to be analysed according to the economic model of behaviour. But this does not apply only to family law, but generally to the analysis of legal regulations. Many later amendments of laws are necessary for the sole reason that the original version of the law failed to take into account the actual possibilities of evading the law, which were detected and used by self-interested citizens.[136]

[135] The claim that individuals in the political area not only follow their individual interests but that they are also ready to show solidarity and conformity with the rules of the community, is also made by HANS HERBERT VON ARNIM (1987, p. 27). On the other hand, he demands that incentives are installed in a way that such behaviour is more profitable than today. Thus, he also supposes self-interested behaviour or at least assumes that this usually dominates. Thus, he actually goes along with the economic theory of politics which he before criticised because of its "not fully realistic" concept of the human being.

[136] This also applies to the analysis of constitutional rules. In this context DAVID HUME already wrote: "Political writers have established it as a maxim, that, in contriving any system of government, and fixing the several checks and controls of the constitution, every man ought to be supposed a *knave*, and to have no other end, in all his actions, than private interest. By this interest we must

Summing up, we can say therefore that the assumption of individual self-interest is a neutral assumption, which excludes behaviour which is – from a moral point of view – especially positive as well as especially negative. Therefore, it is typical of average human behaviour in many situations and in this sense also realistic. Furthermore, there are also situations in which the contra-factual presumption of self-interested behaviour seems to be reasonable. All this speaks for working with the assumption of self-interest as far as possible and deviating from it in favour of altruism (or other assumptions) only in certain special situations. The importance of such situations is, however, as will become apparent below, not negligible, especially if the economic model is applied in other social sciences, because there they are more relevant than in economics.

govern him, and, by means of it, make him, notwithstanding his insatiable avarice and ambition, co-operate to public good. Without this, say they, we shall in vain boast of the advantages of any constitution, and shall find, in the end, that we have no security for our liberties or possessions, except the good-will of our rulers; that is, we shall have no security at all. It is, therefore, a just *political* maxim, *that every man must be supposed a knave*: Though at the same time, it appears somewhat strange, that a maxim should be true in *politics*, which is false in *fact*." (1741a, pp. 42f.) This line of reasoning is also followed within the framework of 'constitutional economics'. See for this *Section 7.2* below as well as G. BRENNAN and J.M. BUCHANAN (1983). – A somewhat different view is presented by B.S. FREY (1997a).

3 Homo Oeconomicus in Economics

As elaborated in the introduction, homo oeconomicus originates – from a historical point of view – in economics, or more exactly in (classical) political economy.[1] Still today, this approach finds most of its applications in economics. Therefore, it is reasonable to show its application first in this area. Within economics, there is a differentiation between microeconomic theory (Microeconomics) and macroeconomic theory (Macroeconomics). The concept of homo oeconomicus is first of all important for macroeconomics. Therefore, we deal with this first. It will be shown that this concept has changed in the course of time: the 'modern' homo oeconomicus is distinctly different from his traditional predecessor. During recent decades, the concept of the economic behavioural model has, however, become increasingly important also for macroeconomic theory. This holds especially for the so-called 'micro-foundation of macroeconomics'. Thus, we discuss the application of this approach to macroeconomics in the second part of this chapter.

3.1 Microeconomic Theory

In microeconomic theory, the single individual (as economic agent) is considered in the functions which are typical of economic life, i.e. mainly in his roles as consumer and producer. The subject of the investigation is how these agents interact in markets. Consequently, microeconomic theory mainly concerns itself with the (private) household (consumption theory), the theory of the firm (production theory), as well as the theory of market

[1] As to the 'birth' of homo oeconomicus, see M. TIETZEL (1981) as well as J. PERSKY (1995). Before the area of classical political economy, there were already considerations in philosophy which aimed in the same direction. After all, economics used to be a part of philosophy before being separated from it. STEPHEN LOFTHOUSE and JOHN VINT (1978) trace the first approaches before ADAM SMITH via the mercantilists and AUGUSTINE as far back as to statements by PLATO and ARISTOTLE.

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equilibrium.[2] In the theory of the household, the first question is how a household spends its given income on the available goods at prices that are given and cannot be influenced, so that its utility is being maximised. In doing so, this household is not only fully informed about its preferences, but also about its restrictions: it knows prices and qualities of *all* available goods, and it makes its consumption decision in such a way that the unique maximum of utility is achieved. By expanding this model, the supply of production factors (labour and capital) can be included in this decision: The household does not only decide which goods are to be consumed, but also how much of its time it will spend on work and leisure. Additionally, in intertemporal considerations it is to be decided how much income is to be saved (invested) and how much of it is to be consumed.

The theory of the firm focuses on the behaviour of the entrepreneur who wants to maximise his profit, not necessarily for the current period but rather in the long run. He knows the technologies at his disposal, from which he chooses the most profitable one. Under full competition, an entrepreneur can obtain at constant prices any quantities of the production factors labour and capital as well as the semi-manufactured goods that are necessary for his production on the factor markets. He is fully informed about the demand for his products by private households and also by other firms, which use them as inputs. In the same way as the head of a private household, the manager of a private firm will maximise his utility, which in his case is equivalent to profit maximisation.

Whereas the theory of the household and the theory of the firm centre around the intended individual consequences of economic actions, the theory of (general) market equilibrium focuses on the non-intended social implications of these actions. There, investigations are made into how the interactions occur on an (auction) market under certain conditions, in most cases under full information and full competition. The most relevant question is whether there are equilibria and, if they exist, whether they are stable and/or unique.

Interactions on markets are (voluntary) exchanges. Agents participate in such an exchange only if they can expect that they stay in a position not worse than before the exchange occurred. Usually, they (nearly) all reach a better position. Insofar, voluntary exchange is 'productive'.[3] Equilibrium is reached on the market when all exchanges have been finished i.e. if no in-

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[2] See for this, as possible examples (besides many others), the textbooks by H.R. VARIAN (1978) or A. MAS-COLELL, M.D. WHINSTON and J.R. GREEN (1995).

[3] The sociologist GEORG SIMMEL remarks: "It is the object of exchange to increase the sum of value: each party offers the other more than he possessed before." (1900, p. 82.)

dividual can find a new exchange partner or if the same exchange is repeated again and again between the same partners. If exchanges take place under full competition, important properties can be derived for such equilibria, especially that they are – given some additional assumptions – Pareto-efficient: nobody can improve his situation by any additional activity without someone else resulting in a worse position.[4] Moreover, in the long run, no entrepreneur can make positive profits in economies with such equilibria; he receives only his 'entrepreneur's wage', that is, his activity as an entrepreneur is paid for as any other activity, too. The investigation of such equilibria by means of mathematical methods goes back first to the French economist LÉON WALRAS (1834 – 1910) who was then teaching in Lausanne, and after World War II was further developed, especially by KENNETH J. ARROW and GERARD DEBREU.[5]

The assumption of full competition was soon left by considering monopolies, oligopolies or situations of monopolistic competition.[6] In contrast to that, the assumption of complete information was maintained for a long time; only more recently, within the framework of 'information economics', more intensive considerations were made about which role incomplete information plays for the market process.[7] There are doubtlessly quite

[4] See for this, for example, H.R. VARIAN (1978, p. 148 ff.). This concept of Pareto-efficiency is behind all 'allocation' considerations within the framework of economic theory.

[5] See especially their seminal contribution K. J. ARROW and G. DEBREU (1954). Correspondingly, one speaks today of 'Walras-equilibria' and of an 'Arrow-Debreu-world'. One of GERARD DEBREU's teachers who himself proceeded on the basis of the works by LÉON WALRAS, was the French economist MAURICE ALLAIS.

[6] The theoretical analysis of monopolies and oligopolies started in 1838 with the work of the French mathematician and economist AUGUSTIN A. COURNOT (1801 – 1877). Actually, "practically no theory of monopoly had existed before him, in spite of all the talk about it," as JOSEPH A SCHUMPETER (1954, p. 976) writes. Further relevant contributions came from FRANCIS Y. EDGEWORTH and above all from ALFRED MARSHALL (1890, p. 395 ff.). The two 'classical' contributions of the theory of monopolistic or imperfect competition came from EDWARD H. CHAMBERLAIN (1933) and JOAN ROBINSON (1933), "whose patron saint Marshall may indeed be said to have been." (JOSEPH A SCHUMPETER (1954, p. 975.)

[7] GEORGE STIGLER (1961) started this, but it is astonishing that it did not happen earlier. After all, FRANK H. KNIGHT'S dissertation in 1921 not only introduced the difference between risk and uncertainty but also pointed to the fact that uncertainty is the prerequisite for the emerging of profits. – Moreover, FRIEDRICH AUGUST VON HAYEK pointed not only in his seminal 1945 paper but repeatedly to the significance of ignorance for economic and social processes. Important

a number of economically important problems that can be treated reasonably well on the assumption of full competition and/or full information, and many results that are derived using these assumptions can be transferred to situations in which one or both of these assumptions are violated. This holds, for example, for the two "fundamental laws of demand", as ARMEN A. ALCHIAN and WILLIAM R. ALLEN (1964) put it: (i) "Any person's consumption rate for any good will be increased (decreased) if the price is lowered (increased) sufficiently." (ii) "The longer any price change persists, the greater the elasticity." (p. 68, p. 71.) Furthermore, the formal analysis is made much easier by employing such simplifying assumptions and often only becomes possible thereby: in many cases, only the formal (mathematical) analysis can show the exact conditions under which the statements derived hold.

The homo oeconomicus who is to be found in such analyses and therefore in most microeconomic textbooks, corresponds to the picture which RALF DAHRENDORF (1958) has drawn from him in the quotation above: he is completely informed about everything, all transactions can be performed without any costs, and of all alternatives at his disposal, he always finds the best one as fast as a flash of lightning. Although, as reasonable as these assumptions may be to investigate certain questions, their price is high: institutional conditions, which are essential for the structuring of human actions, are systematically excluded from the analysis and put off to other sciences. Defending this procedure, JOHN R. HICKS, who also made substantial contributions to the Theory of General Equilibrium, writes: "For I consider the pure logical analysis of capitalism to be a task in itself, while the survey of economic institutions is best carried out by other methods, such as those of the economic historian (even when the institutions are contemporary institutions)." (1939), p. 7.)[8] Thus, the argumentation takes place quasi in a vacuum, which caused HAROLD DEMSETZ (1969, p. 1) to create the term 'Nirvana approach' for such a procedure.[9] Dynamic agents like "entrepreneurs in the sense of JOSEPH A. SCHUMPETER" (1928) do not exist" in such economies. "They would disturb and are, therefore, rightly

contributions to information economics are collected in D.K. LEVINE and ST.A. LIPPMAN (1995). A more recent survey is given by J.E. STIGLITZ (2000).

[8] Nevertheless, both the analysis of the 'logic' as well as of the 'institutions' of the economic system belong for him to economics, although he sees a methodological division of labour between both subjects.

[9] HANS ALBERT (1963a) calls this kind of neo-classical economics "Model Platonism".

banned from this world of boring harmony."[10] Once the equilibrium is reached, nothing else happens; everyone is happy and satisfied and remains permanently in his position. It is no surprise that such theories are hardly capable of contributing much to the solution of practical problems. RONALD H. COASE uses a comparison from medicine in order to characterise this kind of economics: "It is as if one studied the circulation of the blood without having a body." (1984, p. 230.)[11]

Modern microeconomic theory does not differ from the traditional one by deviating from the assumption of utility maximisation under restrictions, but by taking seriously the limited information as well as the restrictions. For ARMEN A. ALCHIAN and WILLIAM R. ALLEN (1964), for example, the limitation of the information is one of the basic observations to start with the analysis.[12] Moreover, it is to be taken into account that information is not only limited but often also distributed unequally. Thus, in the eyes of FRIEDRICH V. HAYEK, it is the rational utilisation of this dispersed information which is the essential economic problem of a society.[13]

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[10] M.J.M. NEUMANN (1985, p. 131). – For a similar critique of neoclassical general equilibrium theory, see also ISRAEL M. KIRZNER (1973), who following LUDWIG V. MISES (1949), deals in-depth with the entrepreneur's role in the economic process and quite generally with the enterprising element within the framework of human action. For a critique of J.M. KIRZNER's position, see J. HIGH (1982). – See also W.J. BAUMOL (1968) as well as M. PRISCHING (1996) for the role of entrepreneurs in economic theory.

[11] It may be objected to this criticism that microeconomic theory was essentially conceived as a static theory and as such does not claim to depict dynamic processes, but aims at comprehending the logical structure of a situation (where institutions are given, but not specified precisely). Apart from the fact that such a position at least arouses the suspicion of Model Platonism – see H. ALBERT (1963a) – this contradicts the self-understanding of many textbook authors as, for example, H. SCHNEIDER (1973), who adopts the view that "the traditional price theory could contribute something to answering the question for the best organisation of an economy" (p. VI), a question which quite obviously is (also) a dynamic problem. As to the productivity of the (traditional) microeconomic theory for economic policy see also N. KLOTEN (1958).

[12] "Observation 2: No Man Can See the Future Perfectly." (p. 19.)

[13] "The peculiar character of the problem of a rational economic order is determined precisely by the fact that the knowledge of the circumstances of which we must make use never exists in concentrated or integrated form, but solely as the dispersed bits of incomplete and frequently contradictory knowledge which all separate individuals possess. The economic problem of society is thus not merely a problem of how to allocate 'given' resources – if 'given' is taken to mean given to a single mind which deliberately solves the problem set by these 'data'. It is rather a problem of how to secure the best use of resources known

Consequently, he states that the theory of general equilibrium, at least as far as it uses the assumption of full information, "does not deal with the social process at all and that it is no more than a useful preliminary to the study of the main problem." (1945, p. 530.)

The restrictions of human actions do not include only prices, income and the original equipment as is assumed in the theory of general equilibrium, but also the social connections in which the individual's actions take place and which are neglected in the theory of general equilibrium.[14] The new microeconomics is hardly based on a new economic theory, but is a consequent application of the economic model of behaviour and it takes the real situation of individuals into account. The further development of this approach leads to the 'New Institutional Economics' which applies economic theory to analyse the role of social institutions, especially with respect to economic development.[15] As these institutions consist to a considerable extent of legal regulations or are determined by laws, it is only a small step from there to the economic analysis of law.

GEORGE A. AKERLOF (1979) was the first to write in his paper about the "market for lemons" – which meanwhile has become a classic– on the effects of asymmetric information. In order to assure a fair exchange of mutual advantage in an exchange economy, it would be desirable for both parties, buyers and sellers, to have the same information (as completely as possible) on the quality of the good in question. However, there exist many so-called 'experience goods', i.e. goods which must be consumed to obtain – and then only by and by – information about their quality. With respect to such goods, the buyer usually has no, or at least much less, information on the quality than the seller. Consequently, if prices are given on such a market, preferably goods of a relatively bad quality are supplied, so-called 'lemons'. As soon as the buyers have realised this, they will only be willing to pay the price for low-quality goods. This, however, again reduces

to any of the members of society, for end whose relative importance only these individuals know. Or, to put it briefly, it is a problem of the utilization of knowledge not given to anyone in its totality." F.A. v. HAYEK (1945), p. 519 f. – See also W.W. BARTLEY, III (1985).

[14] In this context SAMUEL BOWLES and HERBERT GINTIS write that "*Homo economicus* as Smith had known him had all but disappeared from the Arrow-Debreu model", but that "beginning in the 1970s, with some notable exceptions, economists in a variety of fields reintroduced *homo economicus* to the profession." (1993, p. 84.)

[15] See for this V. VANBERG (1983), R.H. COASE (1984), T. VOSS (1985), U. WITT (1987) as well as especially A. SCHOTTER (1981), O.E. WILLIAMSON (1975, 1985), D.C. NORTH (1991), and additionally R. RICHTER and E.G. FURUBOTN (1998).

the incentive to supply high-quality goods on this market. Subsequently, in the long run, only 'lemons' are supplied: the bad quality survives and drives out the good quality from this market.

Apart from asymmetric information, it is the impossibility of punishing the supplier of low-quality goods with 'exit', which is responsible for such 'adverse selection'.[16] If the same consumers consistently and continuously demand the same good, they will recognise who is supplying good and who bad quality. Thus, if the price is given they will accept only goods of high quality and/or a lower price for goods of lower quality. In this way, both good quality as well as bad quality products and services can exist on the same market, and the better quality products might even drive the lower quality products out. The suppliers of good quality have an interest in establishing a good 'reputation' for themselves. If, however, a market is structured in a way that there are only 'one-shot-interactions' between buyers and sellers, the suppliers of goods have no incentive in building up a reputation, and if they succeed in selling their products need not be afraid of long-term negative consequences.[17]

The market of used cars, already mentioned by GEORGE A. AKERLOF (1970), is an example that is especially apt for this situation. As far as the suppliers are private individuals or traders dealing exclusively with used cars, the demanders enter into a relationship with these suppliers usually only once. Therefore, the suppliers have no great interest in a positive reputation. Moreover, the sellers are relatively well informed about the quality of the car on offer, whereas the buyer is in an extremely bad position. Given the average market price known through the lists of the automobile clubs or other organisations, those who are satisfied with their car are less inclined to sell it than those who are dissatisfied. For this reason, cars of a relatively bad quality are supplied, and buyers who realise this are willing to pay only a relatively low price.

Of course, the buyers are interested in receiving a quality as high as possible. Therefore, they are prepared to bear costs for additional information on the quality of the car on offer. To meet this demand for information, automobile clubs run installations in which used cars can be checked for a fee. If a positive report by such an independent authority exists, the buyers are willing to pay a higher price as this provides at least some guarantee for the quality of a used car. Similarly, buyers accept a higher price if a car

[16] See ALBERT O. HIRSCHMANN (1970) for the possible reactions of 'exit' and 'voice' to the deterioration of the quality of products.

[17] See for this, for example, B. KLEIN and K.B. LEFFLER (1981) as well as the exposition in H.-B. SCHÄFER und C. OTT (1986, pp. 321ff.).

has just passed the official inspection that is required by law in Switzerland and Germany every two or three years, respectively.

The situation is quite different if the used car is not sold by a private person or by a second-hand car trader, but by an authorised car dealer, if possible of the same producer. He will be interested in establishing a positive reputation in order to bind the buyer with respect to future check-ups and potential later car purchases. When offering bad quality, he must reckon with complaints, possibly even legal disputes. Therefore, he is more interested than a private seller to supply a high-quality product. He will probably even give a guarantee in order to make this quite clear to the customer. According to the higher average quality that can be expected, the authorised car dealer will – on average – demand also a higher price than the private seller, and the customers will usually accept this.

The starting point for these considerations has been the asymmetry of information; without taking into account asymmetric information, i.e. with the assumption of full information as usually employed in traditional microeconomics, these empirically observable effects can hardly be explained.[18] But the fact that a buyer is prepared to accept different conditions when buying from a private person than when buying from an authorised car agent, also shows that the 'institutions' play a role: With limited information on the quality of a product, it is not only important which product I buy, but also from whom or where I buy it.

Problems of information do not play a role only on the market for goods, but also on the market for production factors, especially on the labour market.[19] Again, GEORGE STIGLER (1962) gave the primary impulse for the treatment of these problems within the framework of the new microeconomics. If somebody searches for a job, he only disposes of some limited knowledge about the open jobs, both with respect to wages and working conditions. If he has got a concrete offer, he faces the question whether to accept this offer or to look for something else. In order to include such considerations into labour market theory, 'search theories' have been developed.[20] However, not only is the employee incompletely informed. The employer, too, knows little about the qualifications of the applicants for vacant jobs, nor does he know all potential applicants either. When the contract is signed the situation is similar to a lottery, and this is

[18] When a new car is purchased, the seller and the buyer principally face the same uncertainty about the quality of the product. Therefore, these problems do not come up.

[19] See for this also H. GERFIN (1982).

[20] For an early critical discussion of these approaches with special reference to their (in-)ability to explain unemployment, see H. KÖNIG (1979).

more so the case, the greater the uncertainty on both sides.[21] Although both sides can dissolve a concluded contract even against the partner's will, this is mostly connected with considerable costs. The greater these costs are, the greater the restraint on both sides will be. Therefore, employers will, for example, prefer younger applicants to older ones because – ceteris paribus – the younger applicants will cause lower costs due to different legal regulations.

Incomplete and/or asymmetric information plays an important part in these more recent microeconomic approaches for investigating problems of the labour market. As the example above shows, it enables conclusions on the structure of the labour market that were not accessible to the traditional theory (which usually presupposed full employment anyway). However, the present extent of (mass) unemployment in several European countries can hardly be explained satisfactorily by these more recent approaches either.[22]

Incomplete information brings about uncertainty and risks for the individual, against which an individual can only partially insure himself. This touches another problem, which is quite important in modern macroeconomics: 'moral hazard'.[23] This problem is not about 'moral behaviour' in the ordinary language sense but about changes that appear in the behaviour of individuals after they have taken out insurance, because: "The insurance changes the economic incentives that each individual faces, and thus causes behaviour to be different."[24] This seems to be trivial in the case of unemployment insurance: The greater the insurance benefit is compared to the (expected) income, the smaller – ceteris paribus – the incentive is to accept a job offer and the more time an unemployed person can take when searching for a new one. However, the problem is much more general. Whoever carries an insurance has a smaller incentive than without it to take precautions against the occurrence of a respective event (damage). If the likelihood of this occurrence depends on the extent of the precautions

[21] See for this W. FRANZ (1982, p. 45 ff.).

[22] See for this, for example, the contributions in B. GAHLEN, H. HESSE and H.J. RAMSER (1996).

[23] See for this the fundamental contribution by MARK V. PAULY (1968). Similar considerations are already to be found in KENNETH ARROW (1963) and more generally in FRANK H. KNIGHT (1921, pp. 247ff.).

[24] L.S. FRIEDMAN (1984, p. 226). More generally, "moral hazard may be defined as actions of economic agents in maximizing their own utility to the detriment of others, in situations where they do not bear the full consequences or, equivalently, do not enjoy the full benefits of their actions *due to uncertainty and incomplete or restricted contracts* which prevent the assignment of *full* damages (benefits) to the agent responsible." Y. KOTOWITZ (1987, p. 549.)

that have been taken, that is, if the insured person himself can influence this likelihood, then it will be greater – ceteris paribus – after taking on insurance than before. This, however, means that premia which have been calculated based on the behaviour before insurance has been taken out, may turn out to be too low afterwards and have to be raised.

For someone who, for example, has taken out a comprehensive insurance for his car, the incentive to avoid accidents is smaller – ceteris paribus – than for somebody who has no such insurance.[25] In order to prevent this, insurance companies offer premia with deductibles, co-payments and/or bonus systems. They can maintain the incentive to behave (more) carefully in traffic without reducing the insurance coverage for serious accidents.

The increased number of lawsuits following the introduction of legal costs insurance is also typical of the effect of moral hazard. Without such insurance an individual will usually be prepared to take legal action only if the prospects of success are very good, because a failure or merely a partial success would imply considerable costs for legal services. If, however, the insurer bears the costs, many will be willing to take legal action even if the chances for success are rather low. The introduction of legal costs insurance, which has thus changed the behaviour of the (potential) legal parties, has not only effected an increased demand for judicial services (and also increased occupational possibilities for lawyers), but it has also led to a distinct rise in the premia which originally were quite low.[26]

Last, but not least, moral hazard is highly relevant with respect to health insurance. If patients need not bear the costs themselves, they will be more inclined to go to a doctor or a hospital than if they were not insured. Moreover, their demand for medicine will be greater, and they might even accept prescriptions to avoid a conflict with their doctor although they do not intend to actually consume (all of) the medicine. The demand for ambulances also depends on the circumstance whether – or to what extent – the corresponding costs are taken over by the health insurance. And finally, the extent to which dentures are demanded depends on the share of costs that are to be borne by the dental insurance.

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[25] This has to be distinguished from the problem of adverse selection which also plays a part here: Those who are more likely to get involved in an accident (with or without insurance), will be more inclined – ceteris paribus – to take out such insurance. Thus, we meet here both phenomena.

[26] There again, adverse selection plays a part: Citizens ‘eager for lawsuits’ have larger incentives to take on legal costs insurance than those who are ‘court averse’.

All this does not mean that citizens/patients should give up their demand for these benefits. Our purpose here is not to assess their behaviour according to moral criteria, but solely to point out how health insurance changes the patients' behaviour by creating an increased demand for such services. This change of demand, which – ceteris paribus – should imply a healthier population, might well be advocated. On the other hand, it appears reasonable to take notice of these connections also from a political point of view. The (alleged) over-consumption of such services, as is to be expected according to the economic model of behaviour, is not to be attributed to the immoral behaviour of the persons concerned or – to use our terminology – to their wrong (immoral) preferences. On the contrary, here again we are facing non-intended social consequences of individual rational behaviour. Therefore, it is also important with regard to health issues to put the restrictions in such a way that the desired behaviour of the individuals results from their own interest. As, for example, PETER ZWEIFEL and OTTO WASER (1987) showed, there are methods in the field of mandatory health insurance to prevent or at least reduce moral hazard by introducing, for example, tariffs with co-payment or bonuses. This can be done without injuring the principle of solidarity that characterises the legal health insurance system in many countries.[27]

In the health system, the problem gets even more complicated not only by the fact that (as is the case with other examples) the problem of negative selection exists in addition to moral hazard, but also by the fact that the demand for health services and benefits is (necessarily) largely determined by the suppliers of these services. In order to understand their behaviour, one should also apply the assumption of self-interest: Free physicians or those in hospitals or the hospital managers are individuals like all others, too. Depending on how the incentives are set, they might themselves give rise to the over-consumption of medical services. If the three problems of moral hazard, adverse selection and supplier-induced demand are regarded together, it is no surprise that we face a very difficult political problem, and that the attempts of 'cost squeezing' had little or no effect at all so far. There might only be a prospect of success for reforms in this area, if these problems are taken into account, i.e. if the reforms are designed in such a way as to achieve the desired purpose even when all agents concerned behave according to the economic model: If they are assumed to behave rationally and self-interestedly.

There has also been a further development in modern microeconomics with respect to the objective function (utility function) of the individuals. As already mentioned in the previous chapter, the modern homo oecono-

[27] See for this also K. KRAFT and J.-M. V.D. SCHULENBURG (1985, 1987).

micus is – unlike his traditional predecessor – not only financially motivated, but he might have preferences for any goods (and any qualities of goods).[28] In the theory of the firm, this becomes obvious because profit maximisation is no longer assumed to always be the (only) objective of the firm. There are two major objections to this traditional assumption (which, of course, in many cases still makes sense for textbook representations). On the one hand, OLIVER E. WILLIAMSON (1964, 1975, 1985) showed that firms are social structures within which the acting individuals stand for quite different interests. Even if all persons concerned were only financially motivated, this would not imply that they would have to support the maximising of reported profit. If, for example, managers' salaries do not exclusively depend on the profitability of the firm, but also contain other components, a rise in the income of these managers might be in contradiction to the increase of the profit. Second, managers usually do not pursue just monetary interests, but they are also interested in other 'goods' such as a decision leeway as large as possible or agreeable working conditions.[29] The only people who stand for pure (long-term) profit interests within a modern capitalist society are probably the (small) shareholders. Although they are formally the owners of the firm, due to information asymmetry they are not able to control the managers in such a way that the latter exclusively pursue profit interests.[30]

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[28] This does not only apply to 'situations of affluence'. The demand for cultural services, for example, might just in times of material shortage be especially high. On the other hand, it has to be realised that with most people, the material orientation becomes overwhelming at the latest when their survival is at stake. This is one or perhaps *the* very reason why the demand of the industrial countries for more environmental protection often meets with little understanding on the side of the developing countries. (Compare, for example, the different standpoints as to the reduction of CO_2.)

[29] Similar considerations are to be found by HARVEY LEIBENSTEIN (for example 1966, 1976, 1978), who on this basis developed his theory of X-efficiency. LOUIS DE ALLESSI, however, pointed out that the phenomena described by HARVEY LEIBENSTEIN can also be tackled by the modern theory of the firm without having to resort to the conception of X-efficiency respectively X-inefficiency. "In practice, Leibenstein and others seem to use X-inefficiency simply as a catch phrase to denote ex post deviations from idealized neoclassical equilibrium conditions." (1983, p. 76.)

[30] In literature this is today dealt with under the keyword 'principal-agent-problem': The employer (principal) is not in a position to control completely the actions of his employee (agent). Therefore, the latter can partly also pursue his own interests. (See for this, for example, J.W. PRATT and R.J. ZECKHAUSER (1985), K.J. ARROW (1985) or N. STRONG and M. WATERSON (1987). Of course, this is a general problem which is also relevant in the relationship be-

This is especially obvious for such firms which are not profit-oriented or in which it is not possible for managers to participate somehow in the profit of the enterprise (however this may be defined). This applies to many public enterprises such as public hospitals or 'non profit hospitals' or public theatres as well as to government bureaucracies. If the income of the top managers is connected with the size of the firm, and if the latter is measured by means of sale or output, these managers' incentive is in the first line to maximise the production, even if this has negative effects on the firm's profit.[31] Apart from this, other factors also play a part, for example, agreeable working conditions and, in the case of theatres and hospitals, the quality of the products.[32]

But it is not only in the theory of the firm that non-financial motives play a part. This becomes even clearer in the theory of consumer behaviour by KELVIN LANCASTER (1971). According to this approach, consumers do not demand goods after all, but 'services' which are connected with certain qualities (characteristics) of the goods they demand on the market.[33] This is obvious with the demand for energy. Hardly ever would anyone demand light heating oil because he is especially interested in this product as such; he will only demand it so he can heat his flat. Different energy carriers with the same energy equivalent differ from each other through the services they can provide, but also through other qualities such as the comfort of their usage. If a certain amount of electric energy (measured, for example, in Joule) is available, this cannot only be used for heating, but also for cooling. The latter is impossible, if only coal or heating oil are available. These two carriers differ from each other with respect to the comfort with which they can be used. But this approach means an extension of the traditional model of consumer behaviour also in another aspect. Two goods, which physically show the same characteristics, may differ in their aesthetic quality. For this reason, a consumer may prefer one product to the other. Furthermore, a consumer may also prefer the more expensive one of two goods with the same physical characteristics, for example, of cars that

tween parliament and government or between government and bureaucracy. In the respective literature which is headed nowadays under the title 'Mechanism Design' attempts have been made to develop 'incentive compatible mechanisms' which shall guarantee that the agents strive for the objectives of their principal – yet in their own interest.

[31] See for this the discussion about the employees in governmental bureaucracies in *Section 4.1.2*.

[32] See for this, for example, H. HANSMANN (1981), B.S. FREY and W.W. POMMEREHNE (1989, p 38, p. 47) or J. SCHIMMELPFENNIG (1994).

[33] This can also explain why some goods are complements and others are substitutes. Traditional microeconomics did not explain this, but simply postulated it.

provide the same (comfortable) transportation possibilities, because he thinks that the possession of this product or the demonstration of this possession implies social prestige that he also strives to achieve.[34] When demanding goods or characteristics of goods, "consumers may be as eccentric as they please" as long as "they are eccentric in a *consistent* way".[35]

Modern microeconomics has also a considerable impact on the (so-called) 'normative economics' i.e. on the manner in which economic policy proposals are made. In this context RONALD H. COASE writes: "Until comparatively recently economists tended to devise their proposals for economic reform by comparing what is actually done with what would happen in an ideal state. Such a procedure is pointless. We can carry out the operations required to bring about the ideal state on a blackboard but they have no counterpart in real life. In the real world, to influence economic policy, we set up or abolish an agency, amend the law, change the personnel and so on: we work through institutions. The choice in economic policy is a choice of institutions. And what matters is the effects that a modification in these institutions will actually make in the real world." (1984, p. 230.) Here it becomes obvious that the actions of the homo oeconomicus do not take place in a vacuum or in the nirvana, but that he stands with both feet firmly on the ground in the new microeconomics.

The new microeconomics as well as the new institutional economics do not – unlike the younger German historical school under GUSTAV SCHMOLLER (1838 – 1917)[36] or partly the American institutionalists[37] whose most important representative was probably THORSTEIN VEBLEN (1857 – 1929) – mainly content themselves by describing institutions, but they aim at analysing the effects of these institutions and probably also their origin using economic theory. Here, there is no contradiction between

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[34] With respect to some groups of professions, for example, self-employed persons or agents, this may again have an impact on their income earning possibilities. – For the theory of such positional goods, see R.H. FRANK (1985, 2005).

[35] K. LANCASTER (1969, p. 216). – The fact that such effects can be explained within the framework of this model does, of course, not mean that they could be 'justified' by that (in any sense). Such normative questions are not to be discussed here.

[36] Here 'younger' refers to the comparison with the 'older' historical school in Germany. The latter usually comprehends the works by BRUNO HILDEBRAND, KARL KNIES and WILHELM ROSCHER. See for this J.A. SCHUMPETER (1954, p. 809ff.).

[37] The American institutionalists were interested inter alia in taking psychological factors into account within the framework of the economic analysis. See for this G. STAVENHAGEN (1969, p. 223 ff.).

the description of social institutions and their theoretical analysis as it characterised the dispute of methods ('Methodenstreit') in German political economy during the last two decades of the nineteenth century.[38]

3.2 Macroeconomic Theory

Whereas microeconomic theory – as presented above – deals with the behaviour of individual economic agents, especially with the behaviour of private households and (private) firms, macroeconomics deals with so-called 'aggregates' such as consumption, investment or saving, or more precisely, the total amount of all individual consumption expenses, investment expenses and savings accounts. It investigates, for example, what impact economic policy of the government, i.e. changes in the economic policy instruments at the government's disposal, has on employment or on the price level. The most politically relevant macroeconomic variables are the unemployment rate, the rate of inflation and the growth rate of real income (gross domestic product); changes in these variables are not only economically significant, but may also have considerable political effects.[39]

One might think that there is no need for a separate macroeconomic analysis, but that it is sufficient to analyse the behaviour of the individuals using the economic model and to derive results for the macro-level by analogy conclusions. When such efforts are made, the figure of the 'representative individual', for example, the representative household or the representative firm, plays a part.[40] However important (and in many cases irreplaceable) such reasoning might be for macroeconomics, it is not suffi-

[38] See also VIKTOR VANBERG (1983, p. 52 ff.) as to the difference between the 'older' and the 'new' institutionalism in economics. As already HANS ALBERT (1977, p. 199 f.) before, he points to the fact that it was just CARL MENGER, the leader of the Austrian school, who was in dispute with the younger German historical school, which can be regarded as a forerunner of modern economic institutionalism. (For the position of CARL MENGER, see V. VANBERG (1983, pp. 137 ff., pp. 271 ff.).)

[39] As quite a number of studies have shown, these are the economic variables which have the strongest impact on voting behaviour: the better (worse) the economic situation as measured by these indicators, the higher (smaller) the chances of a government to be re-elected. For a survey of these studies see P. NANNESTAD and M. PALDAM (1994).

[40] For the figure of the representative individual see A.P. KIRMAN (1992). This concept goes back to ALFRED MARSHALL (1890). See for this J.E. HARTLEY (1996).

cient for its development as a separate part of economics. Genuine macroeconomic reasoning starts already with simple measurement problems. We can observe prices of specific goods and their changes on the microeconomic level; in order to make statements about the general price development, we need an instruction (theory) on how to construct price indices. We can observe individual incomes and their development microeconomically; the construction of the aggregate value of the national income, respectively the gross domestic product, requires complicated procedures as they are today applied within the framework of 'national accounting', which is in the first place based on the work of RICHARD STONE.[41]

The establishment of measurement rules for the construction of aggregate variables is, however, not what makes up the core of macroeconomic theory; it is only one of its necessary prerequisites. Its independence is primarily justified by the occurrence of non-intended social side effects of individual actions: In the aggregate there may appear effects, which are even contrary to the intentions of the individual economic agents on the micro-level.[42] It can be shown, for example, by means of a simple (Keynesian) macroeconomic model that total savings in an economy may remain constant although all private households decide to save a larger part of their disposable income than before. In such a model, a rise in the savings rate implies a reduction of consumption leading to a decrease of the national income, which after all implies a reduction of employment.[43] Due to such paradoxical results it seems to make sense to consider not only the behaviour of the individual economic agents, but also the 'system connections' – to apply a term which is commonly used today.[44]

In macroeconomics the attempt is made to present the 'system connections' by means of a few crucial variables and equations. There are three relevant markets which are usually considered: the goods market, the money (asset) market and the labour market. There is no doubt that JOHN MAYNARD KEYNES (1883-1946) has the merit of having developed in his seminal work *The General Theory of Employment, Interest, and Money*, which was published in 1936, such a theory for the first time. "Nobody be-

[41] See for this, for example, N.D. RUGGLES (1987, p. 377).

[42] This is a general phenomenon of social systems and is not restricted to economic systems. J.W. FORRESTER (1971) calls this within the framework of his system theory "Counterintuitive Behaviour of Social Systems".

[43] For this 'paradox of thrift' see, for example, P.A. SAMUELSON and W.D. NORDHAUS (1995, p. 455 ff.). – If it is sometimes claimed that the German and Swiss populations save too much and consume too little, and that this results in a too low employment, then this is based on such a model after all.

[44] If one prefers this language, the macroeconomic theory is the 'system theory' of economics.

fore him, so far as I know, had brought all the relevant factors, real and monetary at once, together in a single formal scheme, through which their interplay could be coherently investigated."[45] The focus of his reasoning was on explaining mass unemployment at the beginning of the thirties of the last century. Whereas the preceding economic theories were based on the assumption of full employment and, therefore, could understand unemployment only as a 'voluntary' phenomenon, which obviously was quite in contradiction to the reality of that time, JOHN MAYNARD KEYNES was the first to successfully develop a theory which explained 'involuntary' unemployment.[46] This approach was then continued by JOHN HICKS and especially by PAUL A. SAMUELSON within the framework of the 'neo-classical synthesis' by combining neo-classical elements with the Keynesian system. Until and during the early seventies it remained the prevailing macroeconomic doctrine.[47]

Once such a system has been developed, there is an additional reason for the independence of macroeconomics, quasi generated by the theory itself: macroeconomic variables, which were first of all constructed for the purpose of analysis, may themselves directly influence decisions at the micro-level. The macro-variables can contain relevant information for single economic agents, which is not already available to them from micro-data. A change in the aggregate unemployment rate can, for example, signal to workers their changed opportunities on the labour market, even if they do not know exactly the situation on that segment of the labour market which is specifically relevant to them. Or the general inflation rate, by means of which the real wage development is calculated, can determine the workers' supply behaviour on the labour market (respectively that of their interest groups, the trade unions) without having to take into account the development of single prices. It might even be the case that statistical miscalculations of such variables have an impact on the behaviour of economic agents.[48] And finally economic decision-makers like the government and

[45] A.C. PIGOU (1950, p. 65).

[46] Of course, this only applies to 'bourgeois' economics. With his conception of an 'industrial reservation army' KARL MARX had already much earlier presented an approach to explain involuntary unemployment. See, for example, K. MARX (1867, p. 628ff.).

[47] A famous example of the presentation of this approach is the textbook by PAUL A. SAMUELSON (1948), which has meanwhile (together with William D. NORDHAUS) been published in its seventeenth edition. – For the development of macroeconomics, see also O. BLANCHARD (2000).

[48] For example in Switzerland in the years 1977 – 1982, the index of consumer prices was wrongly calculated by the Federal Statistical Office. When in 1981 this 'mistake' was detected, the employees' incomes which were related to the

the central bank mainly orient themselves by the development of macroeconomic variables.

If typical macroeconomic relations are regarded, these are between pure aggregate variables such as between consumption and national income or between the quantity of money and the price level. Behind these variables the decisions of the individuals concerned can hardly be detected. About four decades ago, this led quite a considerable number of economists to adopt the view that a 'micro-basis' of macroeconomics, i.e. a foundation of macroeconomic relations on microeconomic decisions, was no necessity.[49] Macro-relations based on arguments of plausibility were accepted as long as they seemed to be empirically valid; the latter had to be 'proved' – using econometric methods – by statistical significance. Economic policy was performed by relying on the existence and stability of such relations.

The most famous example of such a relation is probably the modified Phillips-curve which contains a long-term trade-off between inflation and unemployment. It was first 'discovered' by ALLAN W. PHILLIPS (1958) as a relation between the unemployment rate and real wage development. Later on, it was expanded into a relation between inflation and unemployment. In 1960 it was called the "menu of choice" of economic policy by PAUL A. SAMUELSON and ROBERT M. SOLOW (1960, p 192). Such Phillips-curves, named after their 'discoverer', were econometrically estimated for quite a number of countries. On the basis of this empirical evidence, it was believed that the unemployment rate could permanently be reduced through a once and for all increase of the inflation rate.[50] Based on this dominating opinion among the macroeconomists of that time, the German Minister of Finance and Economic Affairs and later Chancellor HELMUT SCHMIDT said in 1972: "It seems to me that the German population – pointedly expressed – can rather bear five-percent inflation than five per-

official consumer price index, were about 2 percent above the level which should have been reached according to the former agreements. (See for this A. KEEL (1982)). Subsequently, a political discussion arose whether, to what extent, and in what time this unintended real wage increase caused by this miscalculation, should be compensated. – A similar discussion started 1995 in the United States. See for this B.R. MOULTON (1996).

[49] See for this, for example, H. RAMSER (1987, p. 8 ff.), as well as F. MACHLUP (1963) and E. SCHLICHT (1977).

[50] For this and the respective criticism see, for example, H.J. RAMSER (1977), A.M. SANTAMERO and J.J. SEATER (1978) as well as the discussion in the nineties in the United States between R.G. KING and M.W. WATSON (1994) and CH.L. EVANS (1994).

cent unemployment."[51] From today's view, such a statement sounds at least curious, because, as JOAN ROBINSON, who is certainly not suspect of being conservative, wrote already in 1972: "In any case the experimental demonstration of the Phillips-curve has failed. Prices go on rising along with unemployment." (p. 6.) Today many countries would welcome a reduction of unemployment down to five percent in the short or even medium-run. What HELMUT SCHMIDT can be reproached for, is not this statement itself or more exactly the view which is expressed by it, namely that such a choice exists, but – if anything at all – the fact that he relied too much on the dominating macroeconomic view of that time.[52]

Such macroeconomic relations – respectively the macroeconometric models consisting of them – can in many cases be helpful instruments for forecasts. This can change, however, if one tries to simulate with such models the effects of different economic policies and to put into practice those economic measures which (according to the political decision-makers) will lead to the 'best' result. Then it might happen that a macroeconomic relation which ought to be exploited for economic policy purposes disappears. If, for example, a politician wants to make use of the (statistically validated) long-term relation between inflation and unemployment by increasing inflation through a policy of easy money in order to reduce unemployment, this might perhaps be successful in the short run. In the medium or longer run, however, inflation will increase while unemployment will again reach its former level. (It might even be somewhat higher than before.) In his Presidential Address before the American Economic Association in 1967, MILTON FRIEDMAN called this level the "natural rate of unemployment".[53] The use of the term 'natural' with respect to unemployment initiated sharp controversies.[54] Today, however, the underlying idea has become largely undisputed: It is not possible to reduce unemployment permanently by increasing the inflation rate once and for all. Most economists have agreed on the view that while a short-run trade-off

[51] Interview with the 'Süddeutsche Zeitung' of July 27, 1972, printed in the 'Bulletin des Presse- und Informationsamtes' of the Federal Government No. 110 of August 4, 1972, p. 1415.

[52] In contrast to this prevailing opinion at the beginning of the seventies, the development in the eighties should have shown that at least in the Western industrial countries inflation is much easier to cope with than unemployment. See for this, for example, P. DE GRAUWE (1989).

[53] See M. FRIEDMAN (1968, p. 10 f.).

[54] To avoid the obnoxious term 'natural' today, this rate is often called 'NAIRU": Non-Accelerating Inflation Rate of Unemployment. See for this, for example, R.J. GORDON (1997), L. BALL and G. MANKIW (2002), or – with special reference to Europe – M. KARANASSOU, H. SALA and D.J. SNOWER (2003).

exists, a long-term Phillips-curve hardly does, and if it exists at all, it can hardly be exploited for economic policy purposes.[55] With respect to this question, one can say that the dominant opinion in economics has turned away from PAUL A. SAMUELSON towards MILTON FRIEDMAN.

The reason for this failure lies in the fact that such a policy relies on the money illusion of the economic agents. By increasing the inflation rate, real wages are cut, which implies an increase in labour demand. This can hold only as long as the economic agents, in this case the employees and their representatives, the trade unions, are not aware of it. As soon as they notice a reduction of their real income, they will try to compensate it (for example, at the next wage negotiations). This, however, means that the employment success of this policy is reversed, whereas the higher inflation rate remains. Such a policy could only be successful in the long run if the economic agents could be fooled systematically and permanently. This does not seem to be very plausible; it also contradicts the model of rational behaviour presented above.

These considerations became even more pointed within the 'Theory of Rational Expectations', which goes back to JOHN MUTH (1961) and was further developed especially by ROBERT E. LUCAS and THOMAS J. SARGENT[56], and finally entered into 'New Classical Macroeconomics' by combining MILTON FRIEDMAN's hypothesis of the natural rate with JOHN MUTH's idea of rational expectations.[57] The theory of rational expectations is based on the view that the economic agents utilise their available information and learn from their expectational errors when forming new expec-

[55] See for this, for example, N.G. MANKIW (1990, 2001) as well as the contributions in the *Journal of Economic Perspectives* 11/1 (1997), pp. 3 – 108. – Recently, however, this has again been questioned. L. GRAHAM and D.J. SNOWER (2002) as well as M. KARANASSOU, H. SALA and D.J. SNOWER (2005) defend the existence of a long-run trade-off between inflation and unemployment.

[56] See for this, for example, R.E. LUCAS (1972), T.J. SARGENT and N. WALLACE (1975). The most important contributions to the theory of rational expectations are reprinted in R.E. LUCAS and T.J. SARGENT (1981).

[57] See T.J. SARGENT (1979, Chapter 16), K.D. HOOVER (1988) as well as the respective criticism by R.J. SHILLER (1978), H.J. RAMSER (1978), W.H. BUITER (1980) or G. KIRCHGÄSSNER (1985a). Today, an important part of New Classical Macroeconomics is the 'Theory of Real Business Cycles' which was developed in the eighties. For the discussion of this theory see, for example, CH.E. PLOSSER (1989), N.G. MANKIW (1989) as well as G.W. STADLER (1994). For the description of its methodology, see F.E. KYDLAND and E.C. PRESCOTT (1991) as well as K. KIM and A.R. PAGAN (1995). The most important contributions to New Classical Macroeconomics are collected in K.D. HOOVER (1992).

tations.[58] This seems to be trivial. Other assumptions would hardly be compatible with the behavioural model presented above. It implies that the expectations of the economic agents are – on average – correct and that they cannot be fooled *systematically*, not even in the short run.[59]

Objections have frequently been made to the concept of rational expectations insofar as, when applied to macroeconomics, the economic agents are presupposed to have more information about the economic process and also a greater capacity to utilise this information than is actually at their disposal.[60] Furthermore, the hypothesis of rational expectations has been refuted empirically in many areas. These refutations, however, provide no sufficient reason for rejecting the concept altogether. On the one hand, such attempts of rejection are mostly made within the framework of certain models implying that 'combined hypotheses' are tested. If such a model is empirically rejected, it remains open whether the expectational hypothesis and/or the macroeconomic model, in which it is embedded, is actually rejected. Second, such attempts can only test a certain variant of this approach and then reject it. This in no way allows ignoring the idea that the economic agents learn. Moreover, models explicitly or implicitly presupposing that the economic agents can be fooled systematically, have not proved efficient either, especially not with respect to their application for economic policy purposes. Therefore, it should be reasonable to adopt the view of the theory of rational expectations that *every* economic policy is condemned to fail in the long run if its success depends on fooling the economic agents: They will realise the government's intention and adjust their behaviour, which will render the respective measures ineffective.

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[58] There is no specific theory of learning presupposed in this concept nor is there any attempt to develop such a theory; it is just assumed that individuals are 'learning by doing'. (Moreover, in most models it is presupposed that the individuals have already learned all that is important for them; they utilise all relevant information which is available.) BERNDT BREHMER (1980) has pointed out among others that this assumption of learning by doing is questionable from the view of the psychological theory of learning. (See for this also D. KAHNEMAN and A. TVERSKY (1973), H.J. EINHORN and R.M. HOGARTH (1978), E.B. EBBESEN and B. KONECNI (1980) as well as H.J. EINHORN (1980).) If this is to be seen as a critique of the theory of rational expectations, it has to taken into account, however, that this theory "is not interested in *how* decisions are made, but *which* decisions are made", to use a formulation by HERBERT A. SIMON (1978, p.10).

[59] In technical terms this means that the expectation value of the prediction error is zero and that these errors are not autocorrelated for one-step predictions. See for this, for example, G. KIRCHGÄSSNER (1993a).

[60] See for this, for example, M.H. PESARAN (1987).

Such a policy can only have an impact as long as it is not understood by the economic agents or as long as they do not have a chance to react, i.e. only if it is applied for the first time or, perhaps, over a short period: Such measures are effective only to such an extent to which they are not anticipated.[61]

On the other hand, economic successes achieved by means of deception or surprise can be harmful to the long-run possibilities of economic policy, because they damage the reputation and the credibility of the economic authorities.[62] If a central bank, for example, intends to perform a more restrictive monetary policy in order to fight inflation, it is reasonable to announce this so that the private agents can adapt their plans. This, however, requires that the announcement of the central bank is taken seriously. This is important if, for example, trade unions are to be induced to expect reduced inflation rates and, therefore, to be 'moderate' in their wage claims. If the central bank has, however, jeopardised its reputation by its previous policy when it strongly deviated in earlier years from the path announced, such new announcements will hardly be taken seriously. This, however, implies that on the one hand it takes longer until the inflation rate can be reduced to the desired level, and on the other hand that the 'costs' of this policy, which can be seen in the loss of output or higher unemployment for a restricted period of time, are increased.[63]

Behind all this reasoning there is the economic model of behaviour; it is asked how rationally individuals react to policy measures of the government or the central bank. Thereby, it is assumed that the economic agents form their expectations rationally. Just thirty-five years ago many economists did not only think that such considerations were not absolutely necessary for successful economic policy, but they also thought that they were empirically rejected. Nearly all of the large macroeconomic models, which were used for economic policy consulting, contained at the beginning of the seventies implicit Phillips-curves. They fed the illusion that the eco-

[61] Within the framework of New Classical Macroeconomics, the so-called 'Lucas-Sargent-Proposition' was concluded from this: every systematic policy of demand management is ineffective. (See, for example, T.J. SARGENT (1973)). However, this conclusion does not necessarily follow from the theory of rational expectations; it requires some additional assumptions which are not uncontested, like the assumption of permanent market-cleaning as well as that of the 'super-neutrality' of money. For a corresponding critique see W.H. BUITER (1980, p. 39 f.).

[62] R.J. BARRO and D.B. GORDON (1983) opened the discussion on credibility and reputation of economic authorities which has been taking place in macroeconomics since then.

[63] As to the costs of disinflation, see S. FISCHER (1994).

nomic authorities could use their instruments to utilise this long-term relation between inflation and unemployment.[64] Based on these empirical results and the underlying Keynesian macroeconomic theory, unemployment was thought to be no longer a real economic problem. It was discussed how to steer the economic (cyclical) development as precisely as possible by means of 'fine-tuning'.[65] These models, however, did not stand up to the economic policy test after the sharp rise of the oil prices in 1973/74: The economic measures (explicitly or implicitly) based on such calculations could not prevent the emerging mass unemployment. As elaborated above, the macroeconomic relations, which should have been utilised, shifted or even vanished. This persistently impaired the confidence in Keynesian macroeconomics then prevailing as well as the confidence in the econometric models based on it.[66]

The fact that in these models the role of money illusion was hardly taken into account, if at all, reveals a more general problem which results from using econometric models for developing or evaluating economic policies and which was pointed out by ROBERT E. LUCAS (1976) in his famous 'Lucas-critique'. The coefficients in estimated macroeconomic models, for example, in a Phillips-relation or in an investment function,[67] which usually are assumed to remain constant for a long time, are the result of preferences *and* restrictions which influence the behaviour of the economic agents, for example, of consumers and investors. A change in economic policy implies a change of these restrictions and, therefore, can cause the coefficients of the macroeconomic relations to change as well. Without knowing the direction of these changes, the effects of different economic policies can hardly be estimated with a given macro-model. If nevertheless econometrically estimated macro relations are applied for a purpose of economic policy, one bears the risk that the desired success of this policy fails to appear or even that the reverse occurs.

All this does not question the independence of macroeconomics nor does it question econometrics or the estimation of macroeconomic relations using econometric methods. It underlines, however, the necessity to make a strong distinction between preferences and restrictions also in the field of macroeconomics. This is only possible if the behaviour of the individual economic agents is the starting point which means that first the economic model of behaviour is applied in a microeconomic consideration

[64] See for this G.C. CHOW and S.B. MEGDAL (1978).
[65] See G. KIRCHGÄSSNER (1989).
[66] See G. KIRCHGÄSSNER (1983). For the consequences which result for econometrics, see G. KIRCHGÄSSNER and M.R. SAVIOZ (1997).
[67] See for this T.J. SARGENT (1981).

and the macroeconomic relations are derived there from.[68] Starting in the seventies, modern macroeconomics has usually proceeded this way and, interestingly, rather independently of the ideological background. Today, such a 'micro-basis' is used by 'New (Keynesian) Macroeconomics' (which is more liberal (left-wing) oriented) as well as by 'New Classical Macroeconomics' (which is more conservative (right-wing) oriented):[69] Both base their theoretical considerations on the assumption that individuals as economic agents behave rationally.

This micro-basis is frequently only implicitly introduced by claiming certain rationality properties for the expectation variables. In principle, the micro-basis should be introduced explicitly, and in many cases this actually happens today. However, if one starts quite generally from 'micro-relations' and tries to aggregate them, there is quite a series of hardly solvable problems which were already pointed out by HENRI THEIL (1954).[70] To get around the aggregation problem when introducing the micro-basis explicitly, in most cases the concept of a 'representative individual' is applied. In other words a representative household or a representative entrepreneur is presumed for whom the respective optimisation is performed. The micro-relation resulting from this is – at least with respect to its structure – set equal to the macro-relation which is needed for the corresponding model.[71]

However, this kind of micro-foundation has its limitations. As has been pointed out by JAMES TOBIN, there are a number of important economic questions which cannot be tackled adequately by such an approach, because their investigation must be based on at least two representative agents.[72] This is the case whenever there are groups within the considered aggregate, whose interests diverge in such a way that they cannot reasona-

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[68] Already in 1960 FRITZ MACHLUP wrote: "The decision to seek micro-economic explanations of macro-economic generalizations, that is, to search for the micro-theoretical foundations of macro-theoretical propositions, can be interpreted as a recognition of 'methodological individualism' and of the methodological primacy of micro-theory" (p. 140).

[69] For an introduction into the New Keynesian Macroeconomics, see, for example, R.J. GORDON (1990), G. ILLING (1992), or D. ROMER (1993). For a comparison of both approaches, see H.J. RAMSER (1987), S. FISCHER (1988) as well as N.G. MANKIW (1990).

[70] These problems were discussed in greatest detail in the theory of consumer behaviour. See for this, for example, A.S. DEATON and J. MUELLBAUER (1980, Chapter 6, pp. 148 ff.). For a survey of the empirical approaches, see TH.M. STOKER (1993).

[71] A very critical discussion of this concept is to be found in A.P. KIRMAN (1992).

[72] See for this W.H. BUITER (1988) who refers to JAMES TOBIN.

bly be covered by *one* representative figure. If, for example, using a macroeconomic model problems of the old-age pension system are to be discussed, it is necessary to distinguish the group of pensioners, i.e. those people who are without wage but receive transfer income, from the working people who finance these transfers with their wages. Today such 'overlapping generations' models', of which the first was developed by PAUL A. SAMUELSON (1958), are widely used for the analysis of this and similar problems.[73]

The fact that the necessity of a microeconomic basis has been accepted quite generally, has caused a significant change in macroeconomics.[74] As a consequence of this new orientation, it has become clear that it is much more difficult (if possible at all) to develop economic (stabilisation) policy proposals for the government than it was thought at the beginning of the seventies. At the moment, macroeconomics does hardly seem to have an answer to the great challenge of our time, mass unemployment. Of course, there are several proposals as, for example, the demand for more flexibility and deregulation of the labour market, limiting the power of trade unions, reduction of associated employer outlays or, more generally, producer costs, which are put forward especially by Neo-Liberals.[75] But they are based more on economic common sense arguments than on a generally accepted theory. Of course, there exist many different approaches to explain (involuntary) unemployment, be it theories of search unemployment, implicit contracts, efficiency wages as well as insider-outsider-approaches.[76] However, besides all assurances in the other direction there still exists no general theory which would convincingly explain the continuing involuntary mass-unemployment in many Western European countries (and support this with empirical evidence).[77] Thus, with respect to the unemploy-

[73] See J. GEANAKOPLOS (1987).

[74] Quite a few textbooks of macroeconomics have not yet joined in realising this change, however.

[75] See for this, for example, H. SIEBERT (1997).

[76] See, for example, R. ROGERSON, R. SHIMER and R. WRIGHT (2005) for a survey of search theories, D. NEWBERY and J. STIGLITZ (1987) for implicit contracts, G.A. AKERLOF and J. YELLEN (1986) for efficiency wages, as well as A. LINDBECK and D.J. SNOWER (2001) for insider-outsider theories.

[77] See, for example, the papers discussing this topic in B. GAHLEN, H. HESSE and H.J. RAMSER (1996). Moreover, as K. JAEGER (1996) shows in his survey, this also holds for the existing theories of trade union behaviour. They have the still unsolved problem of why employees (as rationally acting people) force their trade union leaders to achieve labour market contracts which bear a high risk of unemployment for themselves. – For an introduction into the modern theory of labour markets see, for example, R.G. EHRENBERG and R.S. SMITH (2003). A

ment problem, macroeconomics today appears to be somewhat helpless, especially if this situation is compared to its self-maintained claim of the early seventies. At that time (almost) every economic objective seemed to be in reach within a short period. Therefore, several economists make a virtue of necessity by recommending complete economic policy abstinence for the government, especially with respect to stabilisation policy.[78]

The most promising way to reduce unemployment seems today a reduction of real wages as well as non-wage labour costs in order to make labour cheaper, especially unskilled labour. This, however, creates 'working poor', i.e. employees who (together with their families) cannot live a humanly adequate life based on their labour income, despite being fully employed. According to the hypothesis of PAUL KRUGMAN (1994), we have the choice only between high unemployment (the situation in major continental European countries) and rising wage inequality (the situation in the Anglo-Saxon countries) implying many working poor.[79] To prevent social unrest the latter ones might be supported by a negative income tax in the form of an earned income tax credit. However, then we face a new trade-off: Either the guaranteed minimum income is too low to ensure a life compatible with our cultural standards, or such a system is too expensive to be financed. Apart from perhaps the Scandinavian social model with its relatively high tax burden of which the long-run sustainability is, however,

survey of empirical papers to analyse European Unemployment is given in CH.R. BEAN (1994), further discussion of European Unemployment is to be found, for example, in M. KARANASSOU, H. SALA and D.J. SNOWER (2003a) or O. BLANCHARD (2006).

[78] According to this position, the 'correct' monetary policy is the application of FRIEDMAN'S money supply rule which demands that the central bank should let the money supply grow by a previously determined, fixed percentage rate every year, independent of the economic situation. (This suggestion goes back to M. FRIEDMAN (1948)). An attempt is made to justify the application of this rule by showing (in the framework of the theory of real business cycles) that business cycle fluctuations are caused mainly by supply shocks (technological shocks) and only to a small extent by demand side developments. In such a situation, monetary and fiscal policy have hardly any impact on these fluctuations. Given the available empirical evidence, the attempt to validate this has not yet been successful. (For the empirical evidence of the real business cycle theory see M. EICHENBAUM (1991), M.W. WATSON (1993) as well as J.J. ROTEMBERG and M. WOODFORD (1996).)

[79] For a discussion of this hypothesis, see P.A. PUHANI (2003).

questioned, at the moment there seems to be no way to combine traditionally high European social standards with high employment.[80]

Disappointing as the small contribution of macroeconomics may be for overcoming today's unemployment problem, one should not fail to see that it is better to promise a little which can be achieved than to promise more which later turns out to be impossible to reach, as was the case in the early seventies.[81] The present disappointment, which does not concern only economics, is also a result of exaggerated expectations and the hope that social conditions are largely manageable. Other social sciences were met with such expectations as well, and there the disappointments were not smaller. The application of the economic model of behaviour requires insight into the restricted possibility of managing social conditions. This item will be dealt with further below.

All these reflections show the necessity of a micro-foundation of macroeconomics. This implies, however, that macroeconomic theory is – in contrast to its first, perhaps, collectivist appearance – just a typical example of an individualist social science. On the one hand, everything is derived – at least in principle – from the individual decisions of the economic agents concerned, on the other hand, it deals exclusively with the non-intended social consequences of these decisions. The variables which are relevant in macroeconomic analysis are the aggregated (social) variables, but they originate in – and are derived from – individual actions. Here the possibility of an individualist foundation of a theory of society becomes obvious. The usefulness of this approach is supported by the insight that the concept of a macroeconomic theory which (explicitly or implicitly) assumed that it could dispense with such a foundation, must be regarded as a failure due to the economic results of the seventies and eighties of the last century.

What is still largely lacking from large parts of the modern conception of macroeconomics is the *theoretical* inclusion of the state into the analysis. The models of the monetarists (including the New Classical Macroeconomics) equally assume the state to be exogenous as the models of the good old Keynesian tradition.[82] Taking up some results from Public

[80] For a discussion of the Scandinavian model of social policy, see, for example, T.M. ANDERSEN (2004, 2007).

[81] See also S. FISCHER (1988, p. 330 ff.).

[82] The same applies to Marxist theory. So, for example, BOB JESSOP writes: "Despite their very different assumptions and principles of explanation, monetarists, Keynesians and Marxists share a concern with the nature and impact of state intervention in capitalist economies. Yet, in contrast to the study of market forces, the state itself is strangely neglected as a field of analysis."(1977, p. 353.)

Choice Theory, in the government's objective functions it is often assumed today that for electoral reasons the government tries to achieve as low rates as possible for unemployment and inflation. And sometimes feedback of the economic process into the public decision process is represented by ad hoc 'reaction functions'. However, the decision processes of these governmental agencies, be it, for example, the government itself or the central bank, are theoretically not analysed in a similar way as is done with respect to private agents. Moreover, in many cases it is only asked – given the assumptions of the respective model – how the government or the central bank *should* behave in order to achieve certain economic objectives.[83] Thereby, it is implicitly assumed that public decision-makers behave like benevolent dictators.[84] This assumption, which is rather odd for an economic theory, was not left earlier than within the framework of the 'Economic Theory of Politics' which will be dealt with in the following chapter.[85]

[83] This also holds for the 'New Public Finance' starting in the seventies of the last century. A survey is given by W.F. RICHTER and W. WIEGARD (1993), a critique from a political economy perspective by B. BLANKART (1994).

[84] If at all, such an assumption might be more reasonable within the framework of a Keynesian approach than in a monetarist one. After all it was JOHN MAYNARD KEYNES himself who wrote in the preface to the German edition of his "General Theory": "Nevertheless, the theory of output as a whole, which is what the following book purports to provide, is much more easily adapted to the conditions of a totalitarian state, than is the theory of the production and distribution of a given output produced under conditions of free competition and a large measure of laissez-faire." (1936), p. xxvi). This, however, does not necessarily support the Keynesian theory.

[85] See for this also G. KIRCHGÄSSNER (1989).

4 Applications of the Economic Model of Behaviour in Other Social Sciences

Because the behavioural model on which modern economic theory is based is not only applicable to the traditional subjects of economic theory, but principally whenever social macro-phenomena are to be explained by means of individual decisions, it enables the development of a general theory of the social sciences. In doing so, the economic approach competes with the sociological approach which can also be understood as a general theory of the social sciences and which has been applied in many different fields. The essential and basic conviction of this approach, currently dominating in sociology, is probably the view that it is not only possible but in many cases reasonable, if not necessary, for a social science to explain relations between aggregated, respectively 'collective', variables without resorting to individuals' decisions or behaviour. As this is an assumption, which concerns the methodological procedure in social sciences, the basic conception behind such approaches is called 'Methodological Collectivism'. The latter is not restricted to sociology. The elaborations of the preceding chapter have shown that macroeconomic theory without microfoundation also corresponds to that concept. On the other hand, there are individualistic approaches in traditional sociology as well; this includes, for example, the sociology following MAX WEBER.[1]

On closer examination, however, the situation looks different. The economic approach was not developed as an alternative to the sociological approach, but exactly the opposite occurred: In his *"Rules of Sociological Method"*, published in 1895, the French sociologist EMILE DURKHEIM (1858 – 1917) consciously developed the collectivist approach as a counterpart to the individualistic (utilitarian) approach then prevailing in sociology.[2] Important currents prevailing in today's sociology are bounded to

[1] See for this, for example, VIKTOR VANBERG (1975) who presents the two sociological traditions, the individualist and the collectivist, and attributes MAX WEBER to the individualist tradition.

[2] Many people see the birth of modern sociology in this work and compare it with the "Wealth of Nations" by ADAM SMITH (1776). In his introduction to the German translation of this book, RENÉ KÖNIG compares the influence of the

G. Kirchgässner, *Homo Oeconomicus*, DOI: 10.1007/978-0-387-72797-4_4,
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this DURKHEIM programme, be it role theory which is based on the behavioural model of homo sociologicus, be it functionalist approaches or be it sociological system theory. All these theories understand themselves to be 'non-individualist' approaches in contrast to the individualist approach of the economic programme.[3]

At the beginning, the collectivist programme was extremely successful in sociology. It succeeded in largely crowding out individualistic approaches. This also applies to the Anglo-Saxon area. Thus, several decades passed until GEORGE C. HOMANS (1958, 1961) developed again an explicitly individualistically orientated sociology. He tried to rehabilitate homo oeconomicus and based his sociology on this concept. Such a way of proceeding was obviously completely new and surprising for many sociologists. JAMES S. COLEMAN, for example, who himself was later one of the outstanding representatives of this approach, saw in it "a style of theoretical activity in sociology which is quite new to our domain. It is theory which rests upon the central postulate of economic theory, that of rational man attempting to pursue his selfish interests." (1964, p. 166.)[4] In Germany, this approach was first adopted by KARL-DIETER OPP and HANS J. HUMMEL,[5] in the Netherlands by SIEGWART LINDENBERG and REINHARD WIPPLER.[6] Altogether, it can be said that today the individualistically ori-

"Rules" on modern sociology even with the influence of the "Discours de la méthode" by the French philosopher RENÉ DESCARTES (1596 – 1650), published in 1637, on the general philosophical discussion.

[3] See, for example, A. BOHNEN (1975), V. VANBERG (1975, 1988), K.D. OPP (1979, 1979a 1985, 1986, 1989) as well as S. LINDENBERG (1983, 1983a, 1985) for a comparison of both 'paradigms'. Furthermore, SIEGWART LINDENBERG (1983a) pointed out that there are really two 'homines sociologici', that of the sociological theory (role theory) and that of the empirical social research. According to the 'REMM' of the economic approach, he calls these two homines 'SRSM' (Socialised, Role-Playing, Sanctioned Man) and 'OSAM' (Optionated, Sensitive, Active Man). GÜNTER HARTFIEL (1968) tried to show the different anthropological foundations of these two concepts. However, he only considers the 'traditional' and not the 'modern' homo oeconomicus. More recently, MALTE FABER, REINER MANSTETTEN and THOMAS PETERSEN (1997) developed a model of 'homo politicus'. This, however, is not to be discussed here. See *Chapter 5*, *Footnote 50* for this.

[4] See, for example, his main opus J.S. COLEMAN (1990), which is reviewed by R.H. FRANK (1992).

[5] See for this, for example, K.-D. OPP (1972, 1979, 1997), H.J. HUMMEL and K.D. OPP (1971), K.-D. OPP and H.J. HUMMEL (1973, 1973a), and also H. ESSER (1999/2000).

[6] See, for example, S. LINDENBERG (1977, 1980, 1990, 1992) as well as R. WIPPLER (1978, 1985).

entated sociology is established (again) as a possible tendency within sociology, but it is by no means – in contrast to, for example, the situation in economics – the dominating tendency.[7]

But there is still another way in which the economic programme is competing with the sociological programme in the sense of EMILE DURKHEIM. In the same way as there are sociologies for nearly every area of life, be it family life, education, religion, or the economy, 'economic theories' have been developed during recent decades for areas which are far from the traditional economic area and also far from traditional economic theory. So ADRIENNE WINDHOFF-HÉRETIER writes: "In the past years homo oeconomicus has invaded political sciences, rational choice explanations penetrating into all fields of research: Voters presumably vote with respect to their interests and legislators organize coalitions according to their intentions. Bureaucratic and associative behaviour, even the development of constitutions – all enjoy the analytical attention of rational choice theorists." (1991, p. 27.) Thus, economic analysis penetrates into areas which, for example, WALTER EUCKEN (1940) wanted to be excluded from it; what happens there, for example in politics, should – according to his conviction – be taken as 'data' by the economist.

In his main contribution "*The Foundation of Economics*" WALTER EUCKEN writes in 1940: "Data from the point of view of the economy as a whole, are those facts which determine the nature of the economic world without themselves being economic facts. On coming up against these data theoretical explanation has to break off. The task of theory is to follow out of the necessary relationships as far as the particular set of data, and in the other direction to show how the course of economic events depends on the data. Economic theory cannot show how these data come to exist." (p. 213.) To this set of data, WALTER EUCKEN counted besides others the needs, the nature and the prevailing technical knowledge, and also the legal structure as well as the social and political situation. And he concluded the passage about the data with the warning: "There must be a distinct frontier between what is to be taken as given and what not. Unless there is, and unless theoretical analysis keeps within this frontier, history and theory cannot be combined." (p. 220.)[8]

Whereas the classical authors understood themselves as 'political economists' and, therefore, did not accept such a frontier, it was well observed by neo-classical economists.[9] In modern economic analysis, how-

[7] See for this also P. FRANZ (1986).

[8] This position is similar to the one of John R. HICKS (1939) as presented above, who, however, represents it much less pathetically.

[9] See H. ALBERT (1977).

ever, this frontier is crossed again – for good reasons. If one presumes that human beings behave rationally not only when deciding about economic problems but also when settling political and legal matters – in other words if the economic model of behaviour is accepted as a general, even though not all encompassing, model of human behaviour – then there are no good reasons for stopping at the frontier as postulated by WALTER EUCKEN. On the contrary, political and legal processes are accessible to economic analysis as well. For this reason, during recent decades, an 'economic theory of politics' as well as an 'economic analysis of law' (among others) have been developed.[10] These two approaches will be dealt with more closely in the following.

4.1 The Economic Theory of Politics

One of the traditional major questions of (normative) political theory is: Who shall rule?, respectively, Who shall govern? Already the Greek philosopher PLATO dealt with this question in his work "*The Republic*". Expecting that philosophers feel obliged not only to their own interests, but to justice, respectively to the well-being of the community as a whole, he came to the well-known result that philosophers should be kings or that kings should become philosophers.[11] KARL R. POPPER (1945) showed that this is not the most important question to be answered when designing a political system, and that the exclusive concentration on this question can even be disastrous. Nevertheless, this question must be answered. Every political system gives an institutional answer to it, and the respective answer can be assessed as better or worse according to given criteria.

As long as it was (or even is) accepted that a ruler was put into power by God and as long as monarchs were allowed to be destined by God's grace,

[10] As stated above, there is no field of human behaviour which can be excluded principally. Therefore, we find besides these two approaches and besides the individualistically orientated sociology among others an economic approach in ethics (for this see H. KLIEMT (1984, 1985)), an economic theory of the family (see G.S. BECKER (1981, 1988)), cultural economics (see W.W. POMMEREHNE and B.S. FREY (1985), B.S. FREY and W.W. POMMEREHNE (1989)), an economic theory of war (see G. TULLOCK (1982), G. BRENNAN and G. TULLOCK (1982)) and even an economic theory of suicide (see D.S. HAMERSMESH and N.M. SOSS (1974)). Not all of these approaches are, however, equally successful, as will be shown in *Section 6.1*. (See also B.S. FREY (1992) for further application fields of the economic model).

[11] PLATO, *The Republic*, 484. Compare O. HÖFFE (1987, p. 255 ff.; 1988).

this was generally not a very relevant question.[12] Moreover, it was also determined that the will of the respective ruler corresponded to the 'social welfare' to which the public and other authorities had to subordinate. Within such a framework, political science, if it existed at all, was just a 'doctrine of the art' of how to govern well, in other words an attempt was made to find an answer to the question *how* a ruler should govern, not *who* should do this.

This view, however, became questionable at the latest when the monarchy was abolished or changed into a constitutional one and (parliamentary) democracy was established instead. Following the thinkers of the Enlightenment, such as THOMAS HOBBES and JEAN-JACQUES ROUSSEAU, the subsequent claim was that the will of the citizens should be the guideline for governmental actions, because the citizens alone are the sovereign. In addition, it was assumed that the process of the government's election in a democracy ensures that the policy pursued by the elected government is in the interest of the governed people, i.e. of the sovereign. Today, this view is still largely represented in political science and also in some parts of economics. There are two central assumptions behind this view: On the one hand, it is presupposed that there is something like a distinctly defined (or at least definable) social welfare, and on the other hand, it is assumed that the politicians themselves are interested in pursuing this social welfare with their policy.

Both assumptions cannot be taken for granted. Questioning them critically reveals two major problems of political theory: (i) Is there a possibility that the democratic process, starting from the value conceptions (preferences) of individuals, leads to a notion of social welfare which is at least internally consistent?, and: (ii) How do politicians behave in a democratic system, to what extent do they take into account the preferences of their voters when making decisions? Whereas the first question is (according to the ordinary language usage in economics) a 'normative' one, the second question is a problem of positive theory. The economic theory of politics, which results from applying the economic model to political questions, deals (inter alia) with both questions.[13] Apart from some predecessors, the

[12] The question, however, became relevant when there were two (potential) rulers who claimed this, and/or if there was a conflict between the clerical and the political sovereign of the respective state, as was, for example, the case in the Middle Ages at the time of the 'Investiture Conflict' between the German Emperor and the Roman Pope.

[13] The Economic Theory of Politics is also called: 'Positive Political Theory' (W.H. RIKER and P.C. ORDESHOOK (1973)), 'Public Choice' (D.C. MUELLER (2003)), 'New Political Economy' (B.S. FREY (1970), G. BOMBACH (1970)),

most important being HAROLD HOTELLING (1929), JOSEF A. SCHUMPETER (1942) and DUNCAN BLACK (1948),[14] the development of this theory began with the contributions of two American economists: with KENNETH J. ARROW's "*Social Choice and Individual Values*" published in 1951 and with the dissertation of ANTHONY DOWNS about "*The Economic Theory of Democracy*" published in 1957. The latter dealt with the second question, whereas KENNETH J. ARROW focused on the first. From this work, the theory of Social Choice has evolved which in the following is discussed first. Then, the theories of government and of bureaucratic behaviour are presented as parts of the economic theory of democracy, before we turn to the theory of interest groups, which is mainly based on the work of MANCUR OLSON (1965, 1982).

4.1.1 Social Choice

If one has adopted the view that citizens are the sovereign and that their will should be realised in the political process, a political mechanism is required which enables this. This can be based on two different positions. One of these positions (which is inherently authoritarian) says that, in principle, all individuals have the same interests and that the whole point is to realise these 'true' interests or needs and to carry them through in the political process. These true needs can be given from outside, for example, by a religious authority, or one can try to derive them from the conditions of human existence. In contrast, the liberal (democratic) position says that only individuals themselves can principally know their interests and that the targets of the political process should be derived from these individual preferences, whatever they might be. Whereas the authoritarian position eventually implies the (explicit or implicit) installation of a (probably benevolent) dictator, the liberal position focuses primarily on the question of whether there is such a process, i.e. whether there exists a political mechanism for aggregating individual preferences, respectively under which conditions such a mechanism may exist which leads at least to a socially consistent outcome.

That this problem is not trivial has already been known for a long time. The simple majority rule, i.e. that procedure which is frequently taken to be identical with the democratic procedure as such, is not able to do this.

'Modern Political Economy' (B.S. FREY (1977)) or 'Mathematical Theory of Politics' (M. TAYLOR (1971)). See also J.C. HARSANYI (1969) for a comparison of this new political approach to those prevailing so far in this area.

[14] See B.S. FREY (1985, p. 145 ff.) for the European predecessors of the economic theory of politics respectively of 'Public Choice'.

This was already shown by the French mathematician and philosopher MARIE JEAN ANTOINE NICOLAUS CARITAT, MARQUIS DE CONDORCET (1743 – 1794) in the 'Condorcet paradox', named after him.[15] This paradox can be demonstrated by means of a simple example. Let us assume that there is a society of three individuals, I, II, and III, who have to choose among three alternatives, A, B, and C, by means of the simple majority rule. The preferences of the single individuals are as follows:

$$\text{I:} \quad A > B > C$$

$$\text{II:} \quad B > C > A$$

$$\text{III:} \quad C > A > B,$$

that means individual I prefers alternative A to alternative B and the latter to alternative C, and the corresponding preferences apply to the other two individuals. If now the alternatives B and C are put to vote, there is a 2:1 majority for B, according to the above-mentioned preferences. If then C is dropped and A and B are put to vote there is a 2:1 majority for A. Thus, A seems to be the winner. If A is compared to C once again, there is, however, a 2:1 majority for C. Therefore, the social preference ordering determined by the majority rule is

$$A > B > C > A,$$

which means that we face a circle. In reality, this third ballot hardly ever takes place, because the procedure is stopped after the second one, and the then leading alternative, in our case A, is appointed as the winner. On the other hand, if there had first been a vote between A and B and afterwards between the winner and C, then C would have turned out to be the best alternative. This, however, means that the result depends on the sequence (path) of voting and, thus, on the 'agenda'; those who are entitled to set the agenda, exercise an influence on the final result and can, therefore, manipulate it.

This means that the familiar majority rule is eliminated as a political aggregation procedure, if we demand that a transitive social preference ordering can be derived from (any) set of transitive individual preference orderings.[16] But the majority rule is not the only possible voting mechanism. Therefore, it makes sense to look for other voting procedures that lead to

[15] See MARQUIS DE CONDORCET (1785, p. LVIII). – For the history of this paradox, see D. BLACK (1958, p. 156 ff.).

[16] Transitivity means that if $A > B$ and $B > C$ this implies that also $A > C$ holds. This is obviously violated by the above mentioned circle. For a more general presentation of this problem, see A.K. SEN (1970, pp. 8 f.).

cycle-free results. KENNETH J. ARROW (1951), however, showed that there is no political aggregation procedure which, starting from individual preference orderings, leads to a transitive social preference ordering, which satisfies the following four conditions:[17]

U (*Unrestricted Domain*): There are no restrictions at all on the individual preference orderings.

P (*Pareto Condition*): If alternative A is preferred to alternative B by (at least) one individual, but no individual prefers alternative B to alternative A, then alternative A is also to be preferred socially.

D (*No Dictatorship*): No individual shall be entitled to decide for the society irrespectively of the preferences of all other individuals.

I (*Independence of Irrelevant Alternatives*): The social decision between two alternatives A and B is to depend only on the relative evaluation of these two alternatives by the individuals and not on the evaluation of third alternatives (which are not relevant to the decision between A and B).[18]

This 'General Impossibility Theorem' comprises two requirements for the consistency, respectively rationality, of the aggregation procedure, *P* and *I*, and two requirements for its democratic quality, *U* and *D*, but not all four of them can *always* be fulfilled at the same time. Thus, in general it is not possible to aggregate consistent preferences of individual citizens by means of a democratic political procedure to a consistent collective preference ordering. Occasionally, from this result, the incompatibility of democracy and rationality was concluded. This interpretation of the Arrow Impossibility Theorem certainly stretches too far. What is to be learned from this result is, however, the fact that it is in many cases (of conflict) not possible to reach in a democratic way, based on the preferences of the

[17] See also B.S. FREY (1977, p. 70 ff.), as well as the more general (formal) presentations in A.K. SEN (1970, pp. 41 ff.) or N.J. SCHOFIELD (1985, pp. 36 ff.).

[18] This condition is formally equivalent to the following more illustrative condition. If, according to a certain decision procedure, an alternative is the best one from the total set of available alternatives, then it is to be the best one also when this decision procedure is applied to any subset of these alternatives which contains the best alternative from the whole set as an element. (See for this P. RAY (1973)). This condition can be illustrated by means of an example from sports: If the world-record holder in a discipline is a European, he should also be the holder of the European record. This condition might, however, be violated in championships if, for example, the world champion is a European, but is not the European champion.

citizens, something like a common notion of social welfare which enables a consistent evaluation of the different political alternatives. On the contrary, there will appear different specific interests or interest groups, which will make their way more or less successfully in the democratic political process. Therefore, the result of the political process does not have to be particularly 'reasonable', and the use of social welfare functions, as is frequently done in (traditional) economics and especially in public finance, but also speaking of 'public welfare' or – to use a term from traditional political science – of 'Staatsraison'[19] is methodically based on an extremely weak foundation, at least with respect to its democratic basis. Of course, this does in no way mean that political matters should not be settled democratically. But it is a fact that there is no political process which would guarantee results which are always consistent, i.e. which meet minimal rationality requirements. This, however, implies that even under the best imaginable political constitution, the political process may lead to 'unreasonable' results. In order to prevent this, someone would have to be conceded dictatorial power. Such a solution violates, however, democratic demands.[20]

The General Impossibility Theorem of KENNETH J. ARROW is a challenge.[21] If it is a fact that there is no democratic voting procedure that achieves generally consistent results under these four conditions, then the question automatically arises of how these four conditions might be restricted in order to reach consistent results. An obvious candidate for such restrictions is the condition of unrestricted domain. It allows any individual preference orderings. It is, however, not implausible that individual preferences show similarities. Thus, one can ask how this domain can be restricted to ensure a consistent social outcome.

In particular, there is the question under which additional conditions the simple majority rule, which is not only the usual and most often applied democratic procedure, but also shows quite a number of other desirable properties, may bring about consistent results.[22] Already in 1948, DUNCAN BLACK gave a possible answer: The simple majority rule brings about a

[19] See for this term the basic contribution of F. MEINECKE (1924) and also W. BESSON (1970).

[20] For the different problems which may arise from different interpretations of the Arrow Impossibility Theorem, see A.K. SEN (1995).

[21] See for this also A.K. Sen (1999, p. 365): "Indeed, Arrow's powerful 'impossibility theorem' invites engagement, rather than resignation." This challenge was met. The scientific research programme, which resulted from it, is called 'Social Choice' today. For surveys, see A.K. SEN (1977a, 1987a, 1999).

[22] See for this, for example, A.K. SEN (1970, pp. 71 ff.).

consistent result, if all potential alternatives can be arranged on a one-dimensional scale in such a way that all individuals have 'single-peaked' preferences. In other words, given an alternative which is evaluated as the best one by an individual, this individual assesses all other alternatives as being worse, the more distant they are from his 'optimal' alternative on this scale.[23] Subsequently, that alternative is chosen which is preferred by the 'median voter': if the individuals are arranged along this scale in correspondence to their optimal alternatives, the social outcome will be equal to the optimal alternative of the individual who has adopted the median position on this scale.[24]

The assumption of single-peakedness seems to be plausible if all alternatives, like, for example, political parties, can be arranged on a left-to-right ideological scale. For a voter of a moderate left-wing party, for example, all other parties might be less acceptable the more they deviate from his position to the right or to the left.[25] With referenda on factual issues, however, this assumption can be very restrictive. If, for example, the size of a project like a swimming-pool or a school is decided by a local community, this assumption excludes the possibility that there are citizens who support either a very large or a very small project (respectively no project at all), but reject a project of medium size. This assumption becomes even more restrictive if one takes into account that there can be several dimensions of the project to be decided, for example, not only the size of the school, but also its location. If a unique result is to be achieved generally, it is not only sufficient that all individuals concerned have single-peaked preferences, but that the preferences must, with respect to the different dimensions, also be in a 'lexicographic' order: the sequence of dimensions must be identical for all individuals, and the decisions which are made first can be taken independently of what will be decided later on. If, for example, there is first a vote on the location and then on the size of the school, the assumption of lexicographic preferences implies that the size

[23] It is not necessary for the single-peakedness that the evaluation functions are symmetric; starting from the best alternative they must only just monotonously decrease to both sides.

[24] Strictly speaking, a unique result can be expected only with an odd number of voters; with an even number there may be two results evaluated as the best ones.

[25] Of course, there may be voters who appreciate extremely right and extremely left parties much more than the moderate parties of the centre; such voters have 'double-peaked' preferences.

which is going to be decided later has no relevance to the choice of the location.[26] This assumption will hardly ever hold in reality.

Apart from the single-peakedness of preferences, several other restrictions on individual preferences were found in order to ensure that no cycles arise when the simple majority rule is applied.[27] In contrast to the single-peakedness, these mathematically formulated conditions can, however, hardly be interpreted substantially. Furthermore, GERALD H. KRAMER (1973) showed that all these conditions have extremely restrictive implications: Under realistic assumptions, such restrictions on the domain of individual preferences do not exist.[28] "Cyclical majorities, or the absence of stable outcomes under majority rule, are thus very likely the rule rather than the exception in problems involving voting over multi-dimensional choice spaces."[29] Another possibility would be to start from the 'representative individual' which implicitly presumes that the distribution of individual preferences can be presented in such a way as if all individuals (economic agents/voters) had identical preferences. But this is not possible if there are conflicts between individuals or interest groups which have to be decided on. Precisely such conflicts are relevant to the proposition of the General Impossibility Theorem.

A more recent approach to handling this problem is the theory of probabilistic voting.[30] The hope connected with this approach is that introducing uncertainty about voting behaviour leads to an equilibrium outcome for

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[26] In other words, this means that there is no trade-off between location and size. See for this M. TAYLOR (1970).

[27] See for this, for example, A.K. SEN (1970, pp. 173 ff.).

[28] GERALD KRAMER reaches his results under the assumption of continuous and not of discrete alternatives as is usually done, and he assumes a more-dimensional decision space. He points out, however, that his results remain valid if only a subset of the dimensions of the decision problem is continuous and the remaining dimensions are discrete. The dimensions are continuous whenever not only qualitative, but also quantitative decisions have to be made. This is nearly always the case if specific projects have to be decided on. So, for example, the decision on building a new school does not just centre on the questions whether a school is to be built and where it is to be located, but also how large it is going to be.

[29] G. KRAMER (1973, p. 296). – This holds as long as only the (ordinal) individual preference orderings are relevant for the social decision. If additional information about the individual preferences can be taken into account, it is possible to come to consistent social evaluations. (See for this A.K. Sen (1977a).) However, up to now no realistic proposal has been made of how a democratic decision rule should look which takes into account such additional information.

[30] See, for example, P.J. COUGHLIN (1991), J.-D. LAFAY (1993), and the survey in D.C. MUELLER (2003, pp. 249ff.).

majority voting under rather general conditions.[31] How this approach works can be shown by using a simple example.[32] We look for the solution of a political problem with two dimensions (X,Y). Let, for example, X be the size and Y the location of a state primary school. The possible combinations are shown in *Figure 4.1*, i.e. each point represents a specific policy, for example, a combination of size and location of this school.

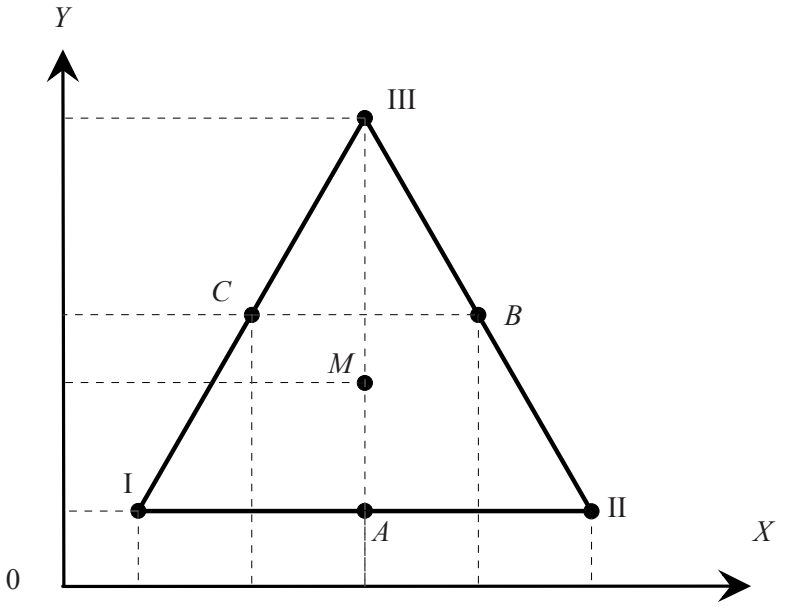

Figure 4.1: Optimal points of the voters and (possible) equilibria in the two-dimensional policy space

We consider three voters with optimal positions I, II, and III, shown in *Figure 4.1*, and two parties (candidates). We assume that for each voter, the utility loss of any policy performed is given by the (Euclidean) distance between the point which represents this policy and the optimal position of the voter. Thus, the indifference curves are concentric circles around the optimal points, while the set of all Pareto-optimal points is given by the triangle with apexes at I, II, and III. If there is any equilibrium point in this model, it should naturally be the gravitation point M, which minimises the distance to all three optimal points. M also corresponds to the utilitarian social welfare maximum.

[31] See, for example, D. KIEFER (1997, pp. 52ff.).
[32] See for this example also D.C. MUELLER (2003, pp. 250ff.).

Under full information, and if the voters always choose the party whose policy is 'closest' to their interests, *M* is, however, not a voting equilibrium. If, in a two party system, party 1 chooses *M*, party 2 might, for example, chose point *A* and beat party 1 by 2:1. But then, party 1 might move to a point on the line between II and III, which is somewhat below point *B*, and it will beat party 2 again by 2:1. This game might go on. Thus, despite the fact that the preferences of all three individuals fulfil DUNCAN BLACK's (1948) condition of single-peakedness, no equilibrium exists, but cycles occur. This holds as long as there is at least some trade-off between the two dimensions.

Probabilistic voting as, for example, PETER J. COUGHLIN (1991) defines it, means that the candidates do not know exactly how the voters will decide, but that they will have some information about it. In the simplest case, all candidates have the same information. Let π_{ij} be the probability (which both parties know) that voter i votes for party j. If both parties keep to point *M*, the probability of winning is 0.5 for both of them. If, however, party 1 stays at point *M* but party 2 moves to point A, according to the traditional model it holds that

$$\pi_{11} = \pi_{21} = 0, \quad \pi_{31} = 1,$$
$$\pi_{12} = \pi_{22} = 1, \quad \pi_{32} = 0.$$

Thus, as explained above, party 2 will win the election and, therefore, point *A* will be selected. If we introduce uncertainty about the behaviour of voters, we might get the following probabilities, if party 1 stays at point *M* but party 2 moves to point *A*:

$$\pi_{11} = \pi_{21} = 0.4, \quad \pi_{31} = 0.9,$$
$$\pi_{12} = \pi_{22} = 0.6, \quad \pi_{32} = 0.1.$$

The expected votes are 1.7 for party 1 and only 1.3 for party 2, and party 1 will win the election with a probability of 0.592. Thus, point *M* will (with this probability) be realised. As there is also no other point dominating *M*, we will see no cycles, but the model has a (unique) equilibrium at this point.

However, we might have the following probabilities as well:

$$\pi_{11} = \pi_{21} = 0.2, \quad \pi_{31} = 0.9,$$
$$\pi_{12} = \pi_{22} = 0.8, \quad \pi_{32} = 0.1.$$

In this situation, the expected number of votes for party 2 which moves to point *A* is 1.7 and higher than 1.3, which is the respective value for party 1 which stays at point *M*. The probability of winning the election is 0.672 for

party 2 but only 0.328 for party 1.[33] Thus, despite the fact that uncertainty about the behaviour of voters prevails, we again do not reach an equilibrium but, as soon as the two parties react, a cycle.

This simple example makes it quite clear that it is not the uncertainty about the voters' behaviour per se which generates the equilibrium outcome, but that some other (presumably rather restrictive) conditions have to be fulfilled in addition.[34] Thus, the fact remains that consistent results cannot always be expected by democratic decision procedures. Therefore, it is a methodological problem to speak of 'social welfare' or 'public welfare' as long as there are conflicts in the respective society concerning the questions to be discussed.[35] This means that there is not really a satisfying answer to the question 'Who shall rule?' also for reasons which are quite different from those mentioned by KARL R. POPPER (1945). On the other hand, this is no argument against the usage of democratic decision procedures. If they are applied, however, inconsistent results are not only to be expected, but they have to be accepted if democracy itself is not to be endangered.[36]

4.1.2 The Economic Theory of Democracy

The 'Economic Theory of Democracy' which starts with the seminal contribution of ANTHONY DOWNS (1957) deals with the second central question of political science mentioned above, which can also be formulated in the following way: How does the (democratic) political process function?[37]

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[33] The winning probability increases drastically if the number of voters is increased. For large societies, i.e. if n goes to infinity, the probability of party 1 winning, (and party 2 losing), the election goes to 1.

[34] For a more detailed analysis, see G. KIRCHGÄSSNER (2000a).

[35] After GUNAR MYRDAL (1930) it was primarily HANS ALBERT (1961, 1964) who criticised the 'communist fiction', i.e. the assumption of the absence of such conflicts, which is implicitly made in many areas of traditional (neoclassical) economics.

[36] This does not mean that the results should be principally accepted because of the (formal or moral) properties of the procedures themselves which are applied to reach them as some conceptions of 'rule justice' might suggest. However, if it is assumed that generally 'reasonable' results come about when democratic decision procedures are applied, the results of such procedures should be accepted even then, when they are occasionally inconsistent. For this problem, see also J.M. BUCHANAN (1975a), for a somewhat different view J. ELSTER (1988).

[37] Thereby considerations are taken up which are already from HAROLD HOTELLING (1929) and JOSEPH A. SCHUMPETER (1942). – At about the same

If this question is answered within the framework of traditional social science investigations, it is usually assumed that the state – respectively the government – behaves like a benevolent dictator who strives to promote public welfare respectively to maximise a social welfare function.[38] Independent interests of the government itself are unknown in this concept. So, for example, JAN TINBERGEN (1956) writes in his "Economic Policy" about the preferences of the economic policy makers to whom he in advance admits a "tendency towards consistency": "If the preferences are consistent, they may be represented by some central, all-embracing concept in the minds of the policy makers, which we usually call welfare or utility of the economy to which the decisions refer. This welfare concept will largely, but not always completely, coincide with a certain representa-

time, quite similar ideas to those of ANTHONY DOWNS were developed in Germany by PHILIPP HERDER-DORNEICH and published under the pseudonym FRED O. HARDING (1959).

[38] This assumption to which traditional German Public Finance is also subdued, was vehemently criticised by the Swedish economist KNUT WICKSELL as early as in 1896, but without much success at first. KNUT WICKSELL wrote about "the traditional theory of Public Finance": "I would venture to suggest that, with some very few exceptions, the whole theory still rests on the now outdated political philosophy of absolutism. The theory seems to have retained the assumptions of its infancy, in the seventeenth and eighteenth centuries, when absolute power ruled almost all Europe. ... Even the most recent manuals on the science of public finance frequently leave the impression, at least upon me, of some sort of philosophy of enlightened and benevolent despotism, and they seem to represent a running commentary on the famous rule 'Everything for the people, nothing by the people – or, at most, with the faint-hearted addition – 'perhaps a little by the people.' " (pp. 82f.) And in a similar way LUDWIG V. MISES criticises about fifty years later the treatment of bureaucrats by German Public Finance: "It was a purposeful confusion on the part of the German metaphysicians of statolatry that they clothe all men in the government service with the gloriole of such altruistic self-sacrifice. From the writings of German etatists the civil servant emerges as a saintly being, a sort of monk who forsook all early pleasures and all personal happiness in order to serve, to the best of his abilities, God's lieutenant, once the Hohenzollern king and today the Führer. The *Staatsbeamte* does not work for pay because no salary however large could be considered an adequate reward for the invaluable and priceless benefits that society derives from his self-denying sacrifice. Society owes him to pay but a maintenance adequate to his rank in the official hierarchy. It is a misnomer to call this maintenance a salary." (1944, p. 78.) – It was JAMES M. BUCHANAN, in particular, who resorted to KNUT WICKSELL'S ideas within the framework of 'Constitutional Economics'. (As to KNUT WICKSELL'S influence, see also J.M. BUCHANAN (1987, 1987a).)

tive individual welfare concept." (p. 11.) The fact that politicians have and can pursue independent interests is not recognised here. Marxist economic theory makes a similar mistake. It also fails to see that politicians could pursue their own interests. The only difference to the 'bourgeois' economic theory is the fact that the government in the Marxist theory acts as if it were the 'agency' of the ruling class, that, for example, it represents the interests of the capitalist class today, whereas in traditional economics it represents the interests of the general public.[39]

ANTHONY DOWNS assumed that politicians – as all other human beings too – maximise their own utility.[40] Thereby the problem arose as to what the utility of the politicians is, respectively by which means it may be promoted. ANTHONY DOWNS presumed that the utility of politicians results from the power, the prestige and the income connected with the political position, and (at a first approximation) that politicians are the more likely to benefit the higher their share of votes in an election is. Therefore, they try to maximise the number of their votes in the forthcoming election. This requires that they meet their voters' desires (at least partially), because the voters themselves behave as rational utility maximisers, and they sincerely vote for that party which they expect to support their interests the most. If the politicians act according to these interests, then not for the reason that they want to be 'good people' and maximise social welfare, but because they are self-interested and want to be re-elected. Here again, the non-intended consequences of individual behaviour, in this case of politicians, are relevant. In the same way as the baker does not primarily bake his bread in order to provide people with food, but in order to achieve the largest possible profit (utility), a politician does not meet his voters' needs because he wants to do something good for his voters, but because he

[39] So, for example, W.E. GULIJEW writes that the state is in "the antagonist class society generally an instrument of the economically ruling class, which is used by this class to secure its political control over the suppressed and exploited class(es)." (1977, pp. 33f.) It may be objected that the role of the state in the capitalist system is seen in a much more differentiated way by many Marxist authors, especially in the Anglo-Saxon world. (See, for example, the survey given by BOB JESSOP (1977)). But even then, only the role or the function of *the state* is discussed, in other words it is essentially seen as a single unit. The question why the agents, for example, politicians or bureaucrats, behave in such a way and not otherwise, is hardly ever put. However, it has to be admitted that within the framework of a collectivist view of social sciences as is represented by the majority of Marxist approaches, this question is not relevant. Therefore, it may be regarded as consequent not to raise it at all.

[40] See for this also F.V. WINDEN (1987).

wants to maximise his own utility by being re-elected.[41] He primarily lives – to take up MAX WEBER's language – " 'from' politics", and if at all, secondarily " 'for' politics" (1919, p. 318). In this respect, there is no substantial difference between an economic entrepreneur and a political entrepreneur.[42] The task of an economic and social order is to ensure that this pursuit of individual interests brings about socially acceptable results so that, for example, no monopolies come into existence, but that economic and political entrepreneurs must always be afraid of losing their positions if they fail to observe the interests of their consumers or voters.

This may sound as if only a reasonable constitution were required to make sure that the politicians orient themselves by the voters' interests. Actually, however, even the best (political) constitution can guarantee this only partially, just as the best economic constitution cannot completely avoid the coming up of monopolistic situations. ANTHONY DOWNS employs quite a number of very restrictive assumptions in order to achieve his result that the government must obey voter preferences (more exactly of the 'median voter') when making its policy. So this model does not only presuppose a two-party system with the voters having single-peaked preferences, but, in addition, that there is complete symmetry between government and opposition, insofar as the voters are fully informed both about the government's policy and about the opposition's alternative programme and, moreover, that there are permanent elections.[43] If these assumptions are relaxed, quite a different picture may appear. In his theory of the *political business cycle*, WILLIAM D. NORDHAUS (1975) showed that a vote-maximising government may – contrary to voters' wishes – not stabilise the economic development, but might even deliberately produce business cycles in order to improve its re-election chances. At the beginning of the electoral period, it will attempt to reduce inflation by means of restrictive monetary and fiscal policy at the cost of a rise in unemployment. Towards the end of the electoral term, it shifts to an expansionary policy in order to

[41] The example of the baker is first to be found with ADAM SMITH (1776, p. 27). (See below *Chapter 7, Footnote 8.*) The idea to apply it to politicians is from JOSEPH A. SCHUMPETER. After discussing the social end of politics he continues: "But in order to understand how democratic politics serve this social end, we must start from the competitive struggle for power and office and realize that the social function is fulfilled, as it were, incidentally – in the same sense as production is incidental to the making of profits." (1942, p. 282.)

[42] Rather late this was also realised by MILTON FRIEDMAN who, like most economists, used to adhere to the contrary perspective, the 'Public Interest Approach'. (See M. FRIEDMAN (1986).)

[43] See G. KIRCHGÄSSNER (1985a) for a discussion and critique of these assumptions.

reduce unemployment by (increased) economic growth. If inflation reacts to that with delay, it becomes possible to reach a combination of low unemployment (high economic growth) and relatively low inflation at the time of the election, which improves the chances of re-election. Such a policy was pursued, for example, during the first REAGAN administration in the years 1981 – 1985.[44] Of course, there may have been other motives, too, for this policy apart from that of maximising the re-election chances.

It has been criticised that the government in this model behaves myopically, i.e. it only considers the current electoral period and does not take into account the time after the next election. However, a cycle is created in this model as long as the government reckons at all with the possibility of not being re-elected, even if it does not fully concentrate on the current legislation period but takes into account that it will have to bear the long-term consequences of its present policy in future periods (and at future elections). However, in this case the cycle will be less pronounced.[45]

In the Nordhaus-model, the government is striving exclusively for its re-election, it is focusing all its energy on gaining additional votes. At least as long as its re-election prospects are not really endangered, there is no reason why it should do so. On the contrary, it will try to satisfy its own interests, respectively the interests of its clientele, but without endangering its re-election. Thus, DOUGLAS A. HIBBS (1977) takes up an older, often formulated hypothesis according to which left wing governments will give priority to full employment before price stability, whereas right-wing governments try to bring about price stability even at the expense of additional unemployment.[46] This leads to a 'partisan model' of the political business cycles.

There are, however, also other serious problems connected with the model of the political business cycle. This applies especially to the expectations formation process that is assumed for the private economic agents. The assumption of 'adaptive' expectations in the original model of WILLIAM D. NORDHAUS (1975) implies that the economic agent can be fooled

[44] The economic development of the United States during these years can be described by the following figures: (i) Growth rate of real GNP: 1981: 1.9; 1982: -2.5; 1983: 3.6; 1984: 6.4. (ii) Unemployment rate: 1981: 7.6; 1982: 9.7; 1983: 9.6; 1984: 7.5. (iii) Inflation rate (GNP-Deflator): 1981: 9.7; 1982: 6.4; 1983: 3.9; 1984: 3.8. (All in percentages.) Source of the data: *Statistical Abstract of the United States*, 1987, p. 391, p. 417, p. 455.

[45] See for this G. KIRCHGÄSSNER (1983a).

[46] See for this the classical contribution by E.S. KIRSCHEN et al. (1968). – See also D.A. HIBBS (1992, 1994). As far as the government behaves in this way, according to the results of RAFFAEL DI TELLA and ROBERT MACCULLOCH (1999), it is following the preferences of its clientele.

permanently and systematically. This is in obvious contradiction to the economic model of behaviour presented above. Meanwhile, however, it was shown that such cycles are more likely to arise if the economic agents have adaptive expectations, but they can also appear under 'rational' expectations.[47] This holds as long as there is a difference between the long-run and short-run trade-off between any two variables which are relevant to the voters' decision and can be influenced by the government, and as long as the government cannot be completely sure to be re-elected which leads to additional discounting of events in future legislation periods.[48] A government that cannot exclude that it will be defeated might, for example, make some expenditure (which favours its own clientele) before the election if wanting to make sure that these expenditures are undertaken at all.[49]

In a series of papers, ALBERTO ALESINA has (together with several co-authors) developed a model of the political business cycle where governments have their own objectives, voters are rational (in the sense of JOHN MUTH (1961)) and, nevertheless, a cycle in real variables is created.[50] As in the model of DOUGLAS A. HIBBS (1977), a left-wing government will give priority to full employment and a right-wing government to price stability. Thus, a left-wing government will – ceteris paribus – follow a more expansionary policy than a right-wing government. Real effects, especially (short-run) deviations of the unemployment rate from its long-run equilibrium level, result in this model from expectational errors. The 'surprises' which are necessary to create such errors result from the ex ante-uncertainty of the election result. This uncertainty is especially relevant whenever long-term contracts are to be made. When concluding a labour contract which lasts over the electoral date, employees, for example, do not know who will lead the next government. They will calculate a 'mean' (expected) policy. Thus, if a left-wing government is elected, they face an expansionary shock, and a recessionary shock if a right-wing government is elected. This leads to short-run deviations of the unemployment rate from its 'natural' level, while the rate of inflation is consistently higher for left wing than for right-wing governments.

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[47] See, for example, U. LÄCHLER (1984), G. KIRCHGÄSSNER (1984, 1986) as well as F. V. D. PLOEG (1987). – In these models, the concept of 'rational expectations' in the sense of JOHN MUTH (1961) was used, which was dealt with above.

[48] See for this G. KIRCHGÄSSNER (1983a).

[49] See for this the model in G. KIRCHGÄSSNER (1984, pp. 19ff.). RON SHACHAR (1993) shows that such cycles can have real effects.

[50] A detailed description of this model is given in A. ALESINA and H. ROSENTHAL (1995). For empirical evidence, see F. CARLSEN and E.F. PEDERSEN (1999).

However, with respect to this model, there are serious theoretical objections, too. In many cases, it is known well in advance who will win the elections. Thus, the leeway for 'surprises' is rather small. The main problem is, however, the inconsistency of voter behaviour. If voters really have rational expectations, then they should not hold the government responsible for the development of real output. But then, why should the government try to influence real output? Second, if the government, nevertheless, tries to influence real output, the individuals should either wait for concluding contracts until after the election or conclude wage contracts contingent on the election outcome. But neither happens. Moreover, the empirical evidence for this model is relatively weak. The same holds, however, for the competing models, too.[51] Besides others, the reason for this might be that in all these models, the government is presupposed to be fully informed about voters' preferences and about the policy alternatives including all their consequences, and that it can control the economic process quasi-mechanically according to its ideas. The actual possibilities of a government are largely overestimated by these assumptions. Therefore, these models of 'optimal government behaviour' can show the structure of certain policies, but can hardly serve to explain actual government behaviour.

If one starts from 'realistic' assumptions about the government's information and its leeway for economic policy, one might presuppose only that the government knows the short-run impact of its economic instruments on the economic situation, that it knows into which direction certain changes of economic variables influence its re-election prospect, and that it can assess its momentary re-election chances via opinion polls which are regularly carried out on its behalf. If one assumes this state of information, one gets to a class of models of 'actual government behaviour' as developed by BRUNO S. FREY and FRIEDRICH SCHNEIDER, and investigated empirically for quite a number of countries.[52] In these models, two situations are distinguished for government behaviour: If according to popularity polls the government's re-election chances are smaller than a certain threshold value, the government will focus its attention on improving its re-election chances. It will pursue a policy of 'vote maximising'. It performs this by making an expansive economic policy similar to the one derived in the

[51] More recent surveys of these models are given in W.D. NORDHAUS (1989), M. GÄRTNER (1994, 2000), M. PALDAM (1997) and, with special reference to unemployment, G. KIRCHGÄSSNER (1996).

[52] See, for example, B.S. FREY and F. SCHNEIDER (1978) for the United Kingdom, (1978a) for the United States and (1979) for the Federal Republic of Germany, as well as W.W. POMMEREHNE and F. SCHNEIDER (1983) for Australia.

Nordhaus model, progressively stronger, the nearer the election date. If, however, a government can expect to be leading distinctly the opposition in the forthcoming election, it can afford to act according to its own (ideological) ideas, respectively to those of its clientele without endangering its re-election. In such situations, as in the HIBBS- and ALESINA-models, left-wing governments will give priority to full employment over price stability, whereas right-wing governments try to bring about price stability even at the expense of additional unemployment. This policy of 'ideology maximising' takes place disregarding the long-term consequences and, as long as the re-election does not seem to be endangered, also independently of the voters' interests. The traditional assumption made implicitly or explicitly in the theory of economic policy (stabilisation policy) and in macroeconomics that the government is on its own behalf interested in stabilising the economic development, must therefore be dropped. Of course, there are constellations where it is in the interest of the government to stabilise. But there are also situations in which the government on its own accord acts in a destabilising way. If this is to be prevented, the government's action leeway has probably to be restricted by means of constitutional rules. This is demanded by, for example, GEOFFREY BRENNAN and JAMES M. BUCHANAN (1980).[53]

Governments, respectively politicians, are, however, not the only agents in the political process, whose behaviour is to be explained. It is not less important to comprehend the behaviour of the bureaucrats who are respon-

[53] The 'constitution' of the Federal Republic of Germany, the 'Grundgesetz', contains such a restriction: According to article 115, paragraph 1 the revenues from credits "must not exceed the expenditure for investments as they are determined by the budget". (This rule, however, has been rather weakened by an amendment which says that deviations from the rule are "admissible for the purpose of preventing a disturbance of the economic equilibrium". As there are nearly always arguments for the existence of such a disturbance, this regulation has factually ceased to be effective.) The German Central Bank Law ('Bundesbankgesetz') for the period before 1999 as well as the Maastricht Treaty (since 1999) contain another restriction: The independence of the Central Bank is guaranteed in order to discipline politicians. – Of course, this does not mean that the managers of the Central Bank are presumed to behave as benevolent dictators and that they know what 'social welfare' is. The point is 'only' the 'division' of power in order to safeguard that monetary policy is largely independent of the government's (short-term) interests of re-election and ideology and thus to assure price stability. (For a political model of central bank behaviour, see B.S. FREY and F. SCHNEIDER (1981). Surveys are given in G. KIRCHGÄSSNER (1996a) and M. GÄRTNER (2006).)

sible for carrying out policies as well as the behaviour of interest groups, if they try to influence the political process (according to their interest).

From an economic perspective, bureaucrats are mainly managing directors or employees in specific firms: state bureaucracies. They can be assumed to strive for the same goals as the employees in private firms, for the highest possible income and agreeable working conditions. There are no reasons for assuming differences in the motivation. In contrast, the conditions under which these aims can be pursued, are, however, very different. This holds especially for the top managers in state bureaucracies compared to those in private firms. Private firms usually work in competition with each other, and they must sell their products on a market. This implies a pressure to produce at low costs. A state bureaucracy, however, is usually the only supplier of its goods, and does not sell these goods on a market which determines the prices, but is financed primarily or even completely by taxes. Thus, it is not the consumers of these goods and services who determine the extent of the production, but (necessarily) their political representatives. Of course, politicians are interested in an efficient working bureaucracy, because a badly working one reduces their re-election chances. They, therefore, try to control it. But an effective control is difficult because the information is distributed asymmetrically: Politicians are less informed than bureaucrats as to how an efficient production of public services may look, and bureaucrats are not interested in passing this information to politicians.

Another problem arises by the fact that neither the employees nor the managers of the bureaucratic firm participate in the profit directly or indirectly; they are paid according to given schematic salary charts. It is usually not possible for them to increase their income by reducing costs in order to increase the efficiency of production. Rises in salaries, which deviate from the usual rules, are only possible, if the number of employees increases due to an expansion of the department so that they can climb up the next rung on the salary ladder. Therefore, they are interested in expanding the production of the bureaucratic firm as largely as possible. WILLIAM A. NISKANEN (1968, 1971) developed a model for this situation, in which the top managers of public enterprises are supposed to have output maximising as their objective, in contrast to the assumption of profit maximising for managers in private firms. But output is certainly only one element in the objective function of the managing directors of public enterprises, whereas working conditions are another one. The latter should be the more

important, the less it is possible for public employees to improve their promotion chances by means of an expansion of the department.[54]

These reflections reveal that we find quite similar problems with bureaucrats as with politicians. In both cases we cannot assume – as is usually claimed in public – that their personal aim is improving 'social welfare', whatever this may be, when we ask for the motivation behind their behaviour, but we have to assume that it is their self-interest they pursue, when fulfilling their public tasks. One can even go further and presume that bureaucrats and politicians try to get their jobs because they are convinced that they can pursue their own interests especially well, when being active in the political area respectively in the public administration. Of course, there are limits to the pursuit of self-interest. In a democracy, these limits are given at least by the fact that the politicians, respectively the parties to which they belong, want to be re-elected. This implies a pressure on the politicians and, via those on the administration, not to deviate too much from the voters' demands. But the control is difficult in both cases because of the asymmetric distribution of information: the information is to be found rather with the people who are to be controlled than with the controllers, and the former are hardly interested in passing on this information.

4.1.3 The Theory of Interest Groups

Politicians and bureaucrats are, however, not the only political entrepreneurs. The same applies to the leading members of interest groups. They, too, generally occupy these functions because they hope to get benefits for themselves. So their sublime objectives that they claim in public are to be questioned as well. This is especially the case if they pretend that the demands of their interest group are in the public interest. When judging such claims critically, one will frequently notice that these are just 'advertising arguments', which serve to carry through the particular interests of the respective group within the political process.

What is interesting about pressure groups is, however, not only the question whose interests they actually represent, but also the question how it is possible to organise such groups that – more or less successfully – act in the political process. MANCUR OLSON (1965) dealt with this question in his "*Logic of Collective Action*". This book, which belongs to the classical contributions of the economic theory of politics (or 'Public Choice'), be-

[54] As to surveys as well as to more recent developments see, for example, W. ORZECHOWSKI (1977), K.O. MOENE (1986), R. WINTROBE (1997), or T.M. MOE (1997).

sides the books by KENNETH J. ARROW and ANTHONY DOWNS (and JAMES M. BUCHANAN and GORDON TULLOCK (1962)), had probably the largest impact on the discussion in the social sciences of all these seminal contributions. The traditional assumption was that pressure groups can be regarded as autonomous subjects in the political process, and that their interests are identical with those of their members (respectively of the corresponding representative member). Such an approach is hardly compatible with the conception of methodological individualism. Of course, one might imagine that an aggregation is made which is similar to that with respect to *the* consumers or *the* producers. But there is an essential difference. In the typical 'economic' aggregates, single individuals act, and the 'behaviour' of the aggregate is derived from *individual* actions. With pressure groups, however, representatives of the individuals act, and they just claim that their actions are derived from the interests (preferences) of their members. Therefore, aggregation is not possible in the same way. In addition, the typical economic aggregates imply that each individual bears the costs of his actions. This does not require a formal organisation. Pressure groups, however, produce a public good when they act in the interest of their members. There, however, an incentive problem arises: single members (individuals) have the possibility of behaving as free riders. They can benefit from the services produced by the pressure group even if they do not bear parts of the production costs. As a consequence, the willingness (of rational, self-interested individuals) to contribute to these costs is small. Subsequently, the respective pressure group may not be established at all, or if it is established, may not have the necessary means to pursue its aims.

Trade unions may serve as a good example for showing this. The public good, which they produce, is the amount of wages negotiated with the employers. If they have negotiated and achieved a wage increase for a certain industry, this might benefit all workers in this industry, disregarding whether they are organised in the trade union or not. The trade union leaders will, therefore, try to negotiate contracts with 'closed shop' rules, i.e. regulations which determine that certain services will not be provided to workers who are not organised in the respective trade union. This is, however, not possible in a political system like the Federal Republic of Germany or Switzerland which guarantees the 'negative coalition freedom': labour contracts which imply that employees who are not members of this trade union have less benefit than union members are illegal. Consequently, the individual workers have a very small incentive to join a trade union, because they can benefit from the successful work of trade unions without paying membership contributions. Thus, it might not be possible to establish trade unions at all or at best very weak ones which mostly con-

sist of idealists. Due to the low rate of organisation, there would hardly be any positive prospect of successfully supporting the workers' interests against the employers.

In such a situation, a pressure group may try to reach a guarantee for its existence by the government. This is, for example, the case whenever the practising of a certain profession is bound to the membership of a corresponding professional organisation, and if this organisation has the possibility to exclude individuals who do not pay their membership fees. In many countries, this applies to physicians or to certified attorneys. An interesting example are the student organisations (trade unions) in the Federal Republic of Germany. After the Second World War, membership was mandatory. During the sixties and seventies, these organisations saw themselves more and more as political (and only to a minor extent as service) organisations and had a pronounced left-wing orientation. As a reaction to this, many state governments made membership voluntary. The leaders of these organisations fought to keep the mandatory membership because they anticipated correctly that many students would behave as free riders (and perhaps also because they feared that many students would leave the organisation because they did not support their political orientation). Today, there are far fewer students' organisations with mandatory membership, and their impact is drastically reduced.

It is, however, not always possible to make the government guarantee the organisation of a pressure group by means of public sanctions. Trade unions, for example, do not have such mandatory memberships, but, nevertheless, are rather influential pressure groups. What possibility do they have to overcome this 'free-rider behaviour'? Here, MANCUR OLSON's 'side-product theory' (1965, pp. 132 ff.) can be applied, which is especially relevant to large pressure groups. Such groups can try to produce two goods at the same time, the public good which is to the benefit of all people concerned, disregarding whether they are members of the pressure group or not, and an additional private good, the consumption of which may be bound to a membership.[55] Everybody who wants to benefit from this private good must become a member of the pressure group and contribute financially to the production of the public good as well. This holds, however, only as long as the interest group is the only supplier of this private good and/or can offer it at a lower price than potential competitors can.

[55] It does not necessarily have to be a private good; it might also be a public good in the narrow sense. That means a good where there is no rivalry of consumption but where exclusion is possible. What is important is the fact that free-rider behaviour can be prevented due to the possibility of exclusion.

The most important private good which trade unions can offer to their members is a 'strike insurance': In the case of a strike, the trade union compensates part of the wage-loss to its members. In this field the trade unions are the only suppliers; everybody who wants to insure himself against wage-loss, must join the union. One can wonder why there are no private insurance companies supplying this product. The reason may be the essential advantage which trade unions have compared to all other potential suppliers: They cannot only – like all the others – determine the conditions of the insurance, but can furthermore decide if and when there is an insurance case, i.e. when a strike is to take place and when not; and they can determine this depending on the amount of their 'strike-fund'. A private entrepreneur who offers such insurance but has no such possibility would, therefore, be taking a risk which would be considerably higher and hardly calculable in comparison to the trade unions.

Automobile clubs such as the AAA in the United States, ADAC in Germany and TCS in Switzerland are another example of such interest groups. In the political arena they represent the interests of the car drivers. As far as they represent the interests of all drivers, disregarding whether they are organised in such a club or not, the clubs offer a public good. But only very few car drivers would be willing to bear the costs voluntarily. The 'feeling of solidarity' required for this is probably to be found even less with car drivers than with industry-workers. The reason why these clubs nevertheless have numerous or sometimes even several million members is again to be seen in the private side-product which they offer. They act as an insurance company for their members. They take over, for example, (part of) their costs resulting from car breakdowns. Some drivers appreciate such an insurance so much that they take out such a policy and, thus, become a member of the respective organisation even though they reject its political line.[56] Here again, the question arises as to why no other entrepreneurs go into this market: they might only offer the private goods and could do this cheaper due to lower overall costs. The reason may be seen in the fact that the costs of producing this public good are rather small compared to the costs of the private side-product: the private good alone could not be produced at distinctly lower costs.[57]

[56] More recently, 'alternative' automobile clubs have been established which offer about the same private goods as the traditional clubs, but which, however, pursue a policy against (private) automobile traffic, like, for example, the traffic clubs in Switzerland (VCS) and in Germany (VCD).

[57] In addition, there is the fact that only few big suppliers can survive permanently in this market. An entrance to the market requires considerable initial investments (inter alia the establishment of a service network) so that the incentive is

What are, however, the results if interest groups have an impact on the political process?[58] In principle, all interest groups can try to influence directly the public bureaucracy, the parliament and/or the government, and nearly all of them make use – with varying success – of these possibilities. On society as a whole, this might have a positive impact, but also a negative one. Traditional approaches in economics and political science concentrated mainly on the positive aspects, like, for example, the role interest groups play in articulating demand for public goods. Without denying this, the economic theory of politics is – in contrast – more concerned with the negative impact of interest group behaviour especially on the allocation. There are two different approaches. The 'rent-seeking' approach, started by GORDON TULLOCK (1967), mainly discusses static aspects. MANCUR OLSON, however, in his second famous book about "*The Rise and Decline of Nations*" (1982), which is an attempt to develop a theory of long-run growth of democratic societies, is mainly concerned with dynamic consequences of interest group behaviour: his main argument being the negative impact these groups have on long-run economic growth.

If individuals employ their resources to put through their interests, they have two basic possibilities in a democratic society: They can try to reach their objectives via the market, which is the usual way to seek for private goods, or they can try to use the political process to seek for public goods. To maximise his/her utility, a rational individual will use both ways, and it makes sense socially, to always employ the way that has minimal (social) transaction costs.

There is, however, also the possibility of using the political process to seek for private goods. One might, for example, try to get special regulations, which give a monopoly position to an individual or to a firm as a supplier of a specific good. One might also try to obtain public subsidies for private goods. In this latter case, 'indirect' externalities in the sense of HOLGER BONUS (1980) are created: utility is still private, but costs are externalised by public financing, even though consumption rivals and exclusion is possible. Examples of such indirect externalities are subsidies for public theatres and opera houses. To exercise such influence on the political process is in most cases less relevant for single individuals, but more for certain formal or informal interest groups ('clubs'). The main purpose

too small to enter into this market as long as the suppliers have so far been able to produce at relatively low costs. Theoretically speaking, this is a market with high entry costs and increasing returns to scale. Only a few large firms can survive here.

[58] A survey of the empirical results concerning the impact of interest groups is given by J. POTTERS and R. SLOOF (1996).

is redistribution in favour of special individuals or groups by receiving rents: it is 'rent-seeking'.[59]

One might assume that this is one of the usual redistributive activities in democracy, i.e. a movement along the Pareto-frontier. The specific allocative problem of rent-seeking is first that the indirect externalities created lead to overconsumption and, thus, to allocative distortions. Even more important is, however, that the resources which the individuals or interest groups invest to receive these rents are socially wasted, because the same resources could be used to produce goods. Thus, rent-seeking results in 'social waste'; it is a movement away from the Pareto-frontier.

To make it possible that interest groups can actually exercise an influence on political decisions, political decision-makers (politicians and/or bureaucrats) are required after all, who admit and convey this influence. And they will hardly admit such an influence only because they consider the demands of a certain interest group as especially justified. They will accept such demands if they expect advantages for themselves; this might be a stronger position within their party or improved re-election chances. Due to the co-operation of some parties with certain interest groups, the latter might be able to realise in a parliamentary democracy demands which would never have a chance to achieve a majority within the population, i.e. if there were a referendum on this question in a direct democracy.

It is not easy to limit rent-seeking activities, because in many cases they are not only in the interest of the (members of the) interest groups but also of the government and/or the public bureaucracy.[60] Thus, it might be obvious to call for constitutional limitation for the government as GEOFFREY BRENNAN and JAMES M. BUCHANAN (1980) do. JAMES T. BENNETT and THOMAS J. DILORENZO (1984) point, however, to the fact that in the past such limitations have often proved to be ineffective. Not only private agents, but also governments often evade these by going 'underground'. A

[59] The classical contributions are GORDON TULLOCK (1967), ANNE O. KRUEGER (1974) and RICHARD POSNER (1975). Surveys on this literature are given by R.D. TOLLISON (1982), M.A. BROOKS and B.J. HEIJDRA (1989) as well as S. NITZAN (1994). Similar literature, but mainly concentrating on problems of international trade, discussing 'Directly Unproductive Profit-Seeking (DUP) Activities' was developed by JAGDISH N. BHAGWATI et al. (See, for example, J.N. BHAGWATI and T.N. SRINIVASAN (1980) or J.N. BHAGWATI (1982).) For a comparison of both approaches, see M.A. BROOKS and B.J. HEIJDRA (1988). – Many of the important contributions to this area are collected in R.D. TOLLISON and R.D. CONGLETON (1995).

[60] Consequently, in the (up to now only few) papers about the political economy of rent-seeking, it is assumed that the interest groups offer bribes to the government to make it pliable. See, for example, H. URSPRUNG (1990).

major additional problem with such proposals is that they have to be approved in the political process, which opens additional possibilities for rent-seeking.

Compared with these (often only partial) rent-seeking approaches, MANCUR OLSON (1982, 1984) makes a much more general claim. He does not strive for a microtheory, but for a macrotheory with a microeconomic foundation. He is, therefore, not satisfied with static welfare analyses, but his intention is to explain the temporal development of certain important macroeconomic variables, especially the growth rate of real income and the unemployment rate. One of his most important objectives is the development of a theory of involuntary unemployment to explain the stagflation which we have been able to observe in many countries since the seventies.[61] He (correctly) blames the equilibrium approaches of New Classical Macroeconomics for blindness to the problem of involuntary unemployment, but takes from them the idea of rational expectations. He considers the New Keynesian Approaches to be more relevant and accepts their assumption that real wages are less flexible with respect to wage reductions than to wage increases. However, he misses in this theory an explanation for this inflexibility.

His approach to explain too high (or: downwards fixed) nominal wages first looks like a variant of the Insider-Outsider-Approach of labour markets: It is the interaction of the special-interest groups of employers and employees which leads to too high (or inflexible) wages and, thus, to unemployment.[62] However, not only with respect to his claim, but also in his approach he goes much further.[63] On the one hand, trade unions and employers' associations are not the only special-interest groups in his model (or distributional coalitions; these terms are used almost synonymously by

[61] See for this also M. OLSON (1995).

[62] See M. OLSON (1982, pp. 201f.). – For the Insider-Outsider-Approach according to which unemployment is generated because job owners (insiders) enforce too high wages which reduces the demand for labour and leads to a situation where the unemployed (outsiders) do not get a job at the prevailing wage see, for example, A. LINDBECK and D.J. SNOWER (1988) or the survey by P.J. SANFEY (1995).

[63] His claim is to show that his theory "explains involuntary unemployment without at any point contradicting anything we know about microeconomics and the effect of the incentives facing individual decision-makers. No other macroeconomic or monetary theory succeeds in doing this." (MANCUR OLSON (1982, pp. 214f.).) And in 1984, he writes: "The argument in this paper also offers the first theoretical justification for the previously ad hoc assumption of the modern or 'disequilibrium' school of Keynesian economists – that the analysis of the macroeconomy must begin with the disequilibrium prices in the system." (p. 320.)

MANCUR OLSON).[64] On the other hand, these distributional coalitions try to secure their special interests with the help of the government. This can finally lead to high, involuntary unemployment, because: "The more extensive the special-interest groups and the non-market-clearing prices lobbying and cartelization bring about, the greater the variations in the rates of return for similar workers and capital. The greater these variations, the more it pays to search for higher returns. This extra search, however, is not a socially efficient expenditure on the gathering of information, and it is required only because of the special-interest groups, so it also generates involuntary unemployment. Some time is spent in job queues because of the non-market-clearing prices and wages, which further increases involuntary unemployment." (1982, p. 202.)

The extent of this involuntary unemployment depends on the structure of the society, more precisely on the number, size, and influence of the special-interest groups acting in it. Large, all-encompassing interest groups which have to consider the interest of society as a whole will hardly demand measures which reduce drastically long-run economic growth. The larger, however, the number of comparatively small groups with rather special interests and the stronger their influence on the political process, the higher – ceteris paribus – involuntary unemployment will be.[65] If one assumes that individuals in a democratic society have the possibility of organising themselves in groups to gain influence on the political process, but that this process is rather slow, one arrives at his basic thesis that each society with unchanged borders enjoying continued stability will gradually shift in time from a situation where markets, including the labour market, normally clear, i.e. where full employment prevails, to a situation where (especially in recessions) markets do not clear, which results in involuntary unemployment.[66] Brought into a short formula this says: The longer a democratic society exists within unchanged borders, the more special-interest groups gain influence on the political process, and the lower will therefore be – ceteris paribus – economic growth and the higher unemployment.

MANCUR OLSON (1982) himself does not make formal tests of his hypotheses, he also hardly presents them explicitly (in a testable formulation).[67] Instead, the evidence he presents are plenty of examples, of which

[64] For a definition of 'distributional coalitions' or 'special-interest groups', see M. OLSON (1982, pp. 43ff.).

[65] There, MANCUR OLSON speaks of 'exclusive' in contrast to 'inclusive' groups. (See also M. OLSON (1965, p. 36ff.).) – The same argument was used to describe the different behaviour of British and German trade unions.

[66] See M. OLSON (1982, p. 216).

[67] This also holds for his later papers (1984, 1995).

the two most important are comparisons of the economic development between developed industrial countries and comparisons between the U.S. states. Considering the economic development of the industrial countries after the Second World War, the three losers, Japan, the Federal Republic of Germany, and Italy, had significantly higher growth than the winners, which did not experience such a structural break, especially the United Kingdom. And in the recent past of the United States, the (older) states of the East and the Middle West had lower growth than the (younger) states of the West and the South.[68]

However convincingly such examples are presented and however evident they might appear at first glance, they cannot substitute formal tests. Nevertheless, it is possible to derive from MANCUR OLSON's work several interesting and testable hypotheses. Thus, soon after his book had been published, such tests were performed by others in a series of papers. Mainly it is asked whether the age of the democracy has a significant impact on the real growth of the national or domestic product or on the unemployment rate.

The empirical results which have been derived are rather mixed and do not allow unambiguous conclusions.[69] The main reason for this might be that it is the influence of the special-interest groups which depends on the age of a democracy, but it is not this age itself which is, according to MANCUR OLSON, responsible for the decline of a nation. Thus, to use the age of a democracy as the explanatory variable is – technically speaking – a misspecification. It would make more sense to measure directly the strength of the interest groups and to use this as the explanatory variable in the regression equation. However, this is hardly possible. Moreover, FREDERIC L. PRYOR (1983, 1984) did not get significant results either when making such an attempt with the help of dummy variables.

Nevertheless, the argument that it is the influence of special-interest groups which can lead to a sclerosis of a democratic society, which results in (increased) unemployment, cannot simply be dismissed. Good examples are agriculture, but also the 'old industries', in Europe especially coal and steel. The influence of such interest groups and the economic and social problems which are (at least partially) created by their influence are too evident to be overlooked. This certainly holds, even if it is not possible to present statistical evidence for a significant relation between the age of a democracy and the unemployment rate or the growth rate of real income.

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[68] See, for example, M. OLSON (1995, p. 597).

[69] F.L. PRYOR (1984, 1987) and J. QUIGGIN (1992), for example, do not find evidence for this hypothesis, in contrast to K. CHOI (1983), P. BERNHOLZ (1986) and especially E. WEEDE (1986, 1990) who find supporting evidence.

By considering the behaviour of politicians, bureaucrats, and special-interest groups, the economic theory of politics has by no means been discussed completely here. But this was not the intention.[70] However, the examples presented should have made clear that within this approach answers are given to the questions "Who shall rule?" and "How does the political process function?", which deviate considerably from the traditional answers of political science. Therefore, they might be surprising for many. So far, these answers are not only achieved by integrating political and economic elements into the analysis, but mainly by consequently applying the economic model of behaviour. All agents, whether they are politicians, voters, bureaucrats, lobbyists or private agents, i.e. all individuals, independent of their role in the political process, are regarded as utility maximisers who behave rationally within their given action leeway. Thus, the boundary between political science and economics becomes a convention without any methodological relevance. This also becomes clear because of the fact that this theory was developed equally by economists and political scientists, and the individual contributions can hardly be attributed to the authorship of a political scientist, or an economist. Here the frequently demanded interdisciplinarity works quite excellently. Furthermore, there have been quite a number of new findings for political science, which seemed hardly achievable with the traditional approach. It is, for example, relatively easy to explain by means of the economic theory of politics why voters change from one party to another in certain situations, which used to be a considerable problem for traditional political theory.[71]

The economic theory of politics does not only have effects on political science, but also on economics, especially in the field of macroeconomic theory, respectively the theory of economic policy. Macroeconomic developments cannot be comprehended correctly without considering the behaviour of the economic authorities, i.e. the government and the central bank in particular. Of course, the instruments which can be influenced by these agents can be assumed to be exogenous and their development might be excluded from explanation. As already mentioned above, this is the approach chosen by traditional macroeconomics. If one, however, really wants 'to understand' macroeconomic developments, one also has to strive to understand and explain why the economic authorities have acted in a particular way and not differently in certain situations. Thus we need an economic theory of government behaviour, in other words we enter the economic theory of politics, and we obtain new (alternative) explanations for macroeconomic phenomena such as the above mentioned theory of the

[70] For quite recent developments see, for example, T. BESLEY (2007).
[71] See for this, for example, K. LIEPELT and A. MITSCHERLICH (1968).

political business cycle, or new political and economic explanation for the development of government deficits and of public debt during the period of Keynesian-oriented economic policy.[72] What is 'political' about these explanations is the fact that the political restrictions of the economic authorities are taken seriously as well, whereas the 'economic' quality consists of the use of the behavioural model (and, of course, also of the respective context in this case). The 'gains' of interdisciplinarity are not distributed one-sidedly here either.

4.2 The Economic Analysis of Law

Now the political area has been separated from WALTER EUCKEN's 'data' and subjected to economic analysis, it is close at hand to do the same with the field of law as well. Members of the legal profession are used to taking laws for granted. During their education, they learn according to which legal rule certain behaviour is to be judged. Thereby, they always deal with individual cases. Dogmatics and exegesis are in the centre of their activity, and when they evaluate laws, they usually do this with respect to their compatibility with higher-order norms or laws or, if one wants to go a step further, with general conceptions of justice. Unlike them, economists are mainly interested in the effects of laws: What is the impact of different legal norms on human behaviour? In normative terms, one can also ask how certain legal rules should be designed so that the objectives pursued can be achieved in the best possible way. And finally, the question is raised within the framework of New Institutional Economics as to how certain legal institutions came into existence, for example, why certain kinds of contracts and not others have been developed for certain purposes.[73]

But why should this be a specific economic question? After all, lawyers have always been analysing the effects of laws. Furthermore, an independent sub-discipline of the social sciences has been established with 'sociology of law' which deals explicitly with such questions.[74] Therefore, nothing seems to indicate a specific economic question apart from the cases

[72] See for this J.M. BUCHANAN and R.E. WAGNER (1977, 1978). For a survey about politico-economic approaches to explain the growth of public debt, see A. ALESINA and R. PEROTTI (1995).

[73] See for this, for example, G. GÄFGEN 1983, V. VANBERG (1983, pp. 50ff.), O.E. WILLIAMSON (1985) as well as R. RICHTER and E.G. FUROBOTN (1998).

[74] For contributions to the sociology of law see, for example, W.M. EVAN (1980) or A. PODGÓRECKI and CH. J. WHELAN (1981).

where the law in discussion regulates explicitly economic problems (in the ordinary language usage), like, for example, antitrust law.

Let us take criminal law as an example. This law does not deal with economic questions, at least not at first glance. Let us assume that certain activities, be it theft or dumping secretly sewage into a river, are prohibited by law. The jurist will divide all concerned by the law up to those who keep and those who do not keep to it and, therefore, must be punished. This division may turn out to be very difficult in some cases and may require a great deal of judicial knowledge. From the economist's view, however, it is irrelevant whether a certain person keeps to a law or not. The economist asks whether, or under which conditions, a *rational* individual will keep to such a law. This individual will weigh the utility and the costs of a legal offence against each other: On the utility side there is, for example, the saving of costs by not purifying certain sewages. On the side of the costs there is the expected punishment: the amount of the fine and the trouble connected with a penalty, multiplied by the probability that punishment will be imposed. It should be plausible that a fine smaller than the cost savings which can be achieved by the criminal offence will not prove to be very effective in most cases. This holds even more the smaller the probability is that a fine will actually be imposed.

What is economic in such an analysis is just the consistent application of the economic model of behaviour. The individuals concerned by a legal regulation are assumed to behave rationally in the above mentioned sense. The introduction of a legal regulation changes their action leeway and, therefore, generally, also their behaviour. But this does not imply that individuals will observe the law according to its meaning or even literally.

Apart from some predecessors, the economic analysis of law started with the classic contribution of RONALD COASE on "The Problem of Social Cost" written in 1960. In a famous theorem named after him, he showed that under certain circumstances, the assignment of (property) rights to two contracting parties is irrelevant for the allocative result which is finally negotiated between these (two) parties. In other cases, however, the question to whom the property right of a certain good like, for example, clean air, is assigned, is crucial for the result. RICHARD A. POSNER (1972) goes in his book about the "*Economic Analysis of Law*", which has become *the* standard work, beyond that position. He asks to what degree the various legal regulations of the American legal system serve 'efficiency', i.e. to what extent they are formulated in such a way that the objective pursued can be achieved with the smallest usage of social resources.[75]

[75] For critical discussions of the economic analysis of law, see J.L. COLEMAN (1989) or L. KAPLOW and ST. SHAVELL (1999).

Within the economic analysis of law, a certain kind of costs is of major importance which was hardly considered in traditional economic analysis: transaction costs. Thus, the fact is taken into account that costs arise if contracts are concluded, respectively, if transactions are carried through.[76] These costs depend largely on whom the legal order assigns the property right of something being subject to a contract. In an extreme case, these costs can even be prohibitively high so that the respective contract is not concluded, although it would – apart from transaction costs – be in the mutual interest of all those affected. Therefore, the task of a legal order which aims at efficiency and thus at saving social resources as much as possible, is to attribute the property rights to the contracting parties in such a way that transaction costs are minimised.

Information costs are of similar importance.[77] A contract will be the more advantageous to both contracting parties, also ex post and not only ex ante, the better both parties are informed of the contents of the contract, respectively its subjects at the date of conclusion. However, as already mentioned when dealing with 'New Microeconomics', information is usually not distributed symmetrically to the contracting parties, and collecting additional information may be connected with very different costs for them. Therefore, it seems to be sensible to organise the legal order in such a way that an agent in possession of this information has an incentive to pass it on, and, if additional information is required, this is done by that agent who has to pay the smallest information costs.

4.2.1 Legal Regulations in Environmental Policy

This all might sound very theoretical. It has, however, far reaching consequences with respect, for example, to environmental law. Clean air is a scarce good. We need it to breathe, i.e. as a consumption good in the economists' language, but also for the production of many goods, i.e. as a production factor. Traditionally, however, it is considered to be a free good; everybody has the (nearly) unrestricted right to pollute it. This has

[76] Traditional economics generally assume that transactions can be performed without costs and, therefore, without the expense of additional resources. The 'Transaction Costs Economics' goes back to RONALD COASE (1937). KENNETH J. ARROW (1970) and OLIVER E. WILLIAMSON (1979, 1985), in particular, made further important contributions. See also O.E. WILLIAMSON (1989) and M. DIETRICH (1991) for discussions of this approach. Many original contributions are collected in O.E. WILLIAMSON and S.E. MASTEN (1995).

[77] Information costs are often considered as part of the transaction costs. Here, however, the term 'transaction costs' is always used in the more narrow sense.

led to an 'over-consumption' of clean air, i.e. to a considerable amount of air pollution.

If we start from the status quo, as does the major part of environmental law, we assign the property right of clean air to those who are polluting it today. Let us assume, for example, that there is a large electric power station in a certain region which fires coal with high contents of SO_2 and NO_X. The victims of this highly concentrated pollution are the people living in this region, who, however, also use the electric power from this station. One might (theoretically) assume that, to prevent this damage, these people 'buy' the clean air from the power station, i.e. they merge and make a contract which requires that the power station desulphurises and denitrogenises its exhausts, and that the costs are borne by the population of the region.[78] For the people living in this region clean air is, however, a public good (in the wider sense): consumption rivals, but nobody can be excluded. Therefore, such a contract will not take place. If the power station has the property right of clean air, it is extremely difficult to organise the people as one common party to this contract. Every one of these many individuals has an incentive not to be part of the contract. Otherwise, he has to bear costs without getting any direct benefit, because his contribution is so small that the overall result is at best influenced marginally. If he behaves 'rationally', he will behave as a free rider. As this holds for all individuals living in this area, such a contract will not be concluded if all behave rationally. The final reason for this outcome are the transaction costs which, in this case, are prohibitively high.

One might raise the objection that not all individuals behave like free riders. There are just a number of citizens who are committed to the preservation of the natural environment without having a noticeable (personal) benefit from it. This argument is, however, not relevant for this situation. If such a contract is concluded, each of the individuals involved has to bear considerable (monetary) costs. This burden is the higher, the smaller the

[78] At first glance, such a contract might seem to be 'unjust' because the victims and not the polluters have to pay these costs. This consideration overlooks, however, that even if the power station were to bear their costs in the first instance, they would finally be transferred to the population via higher prices for electric energy. The only difference, which might occur, relates to the distribution of the costs among these people. The question which of these two channels of distribution would be 'more just' remains open. Moreover, in such a situation it is often not clear who is really responsible for the pollution: Is it the power station or is it – finally – the consumer of electric energy? See for this 'symmetry in causation' the famous contribution of RONALD COASE (1960) as well as the discussion of its relevance for environmental policy by M. ADAMS (1989) and G. KIRCHGÄSSNER (1990).

share of those people of the population who are willing to pay. A small, highly motivated minority is not able to bear these costs based on purely economic reasons. Even if, and what is to be expected, only a (considerable) part of the individuals behave like free riders, it becomes too expensive for those citizens who are willing to make some voluntary contribution. Thus, it is not astonishing that we hardly find such contracts in reality.[79]

To improve the situation, the property right of clean air might be given to each single inhabitant in this region. If the power station wants to produce electric energy, it would have to buy the clean air from the population. But now a similar problem arises. Every one of the many individuals knows, that he can get the highest price if all others have already made their contracts with the power station. Then he is in a veto position which he can exploit. Because everybody knows this, every rational individual will only be willing to start negotiations once all others have already signed the contract. Thus, also in this situation, no contract will be concluded. The air remains clean, but no electric energy can be produced for this region.[80] Once again, high transaction costs prohibit an 'optimal' solution from being reached.[81]

Environmental legislation can be introduced which restricts, as is usual today, the emission of the power station to a maximum level. The power station's property right of clean air is not suspended by this, but restricted. An alternative possibility is that the government takes over the property right of clean air and gives it to an 'environmental protection agency' (which is part of the public bureaucracy) from which the power station can buy it, be it through charges which are proportional to the emitted pollution or by buying licences. In all these cases, the transaction cost problem can be solved if the environmental protection agency takes the position of the general population in making the contract. If this agency had the same information about the available technologies for pollution reduction and about their corresponding costs, the same result could be achieved independently of whether regulations, charges, or licences are employed. In

[79] See, however, the example of Kleinblittersdorf mentioned in *Chapter 5 (Footnote 59*) which shows that rarely, but sometimes, contributions are made which are not very small.

[80] In contrast to the 'Commons' situation where everybody has the right to pollute, such a situation is called 'Anti-Commons'. While with respect to 'Commons' the misallocation results from overusing the resource, 'Anti-Commons' leads to under-utilisation. See for this M.A. HELLER (1998) or J.M. BUCHANAN and Y.J. YOON (2000).

[81] In this situation, the 'optimal' result cannot be reached if only a few citizens behave rationally according to their self-interest.

fact, however, this information is nearly exclusively with the power station, and if regulations are used, the power station has no incentive to pass on this information to the public authorities. This holds especially, if the environmental protection agency tries to tighten up the regulations according to an improved 'state of the technology'. The power station will be 'silent' in such a case and it might prove very difficult for the agency to get such information from it (or from elsewhere).[82] Moreover, if bureaucratic regulations (a policy of command and control) are used and if it keeps to this regulation, the power station has hardly any incentive to develop and introduce new technologies which take more care of the environment, as they are connected with additional costs and provide no additional benefits for the firm.

The situation looks quite different, however, if the power station itself has an incentive to reduce the emission, as is the case when charges or licences are used. The introduction of a new technology which reduces the emission is profitable for the firm because it saves money for charges or licences. Thus, the profit motive itself leads the power station to look for new ways of pollution reduction, and it will use all available information. The public agency does, however, not need such information. If it intends to reduce the emission further, it only has to reduce the number of licences or to increase the charges. Both ways are possible without technological knowledge about the possibilities for emission reduction.[83]

This example from environmental regulation should have made it clear which relevance transaction and information costs have when the effects of legal proposals are to be evaluated. One might go even further and claim that legal regulations are mostly necessary if transaction and/or information costs are high: If there are neither relevant transaction nor information costs, the institution of voluntary (private) contracts is largely sufficient to rule social life, as long as the 'freedom to conclude contracts' is assured and the legal order makes it possible to push through claims which have been agreed on in contracts. In most cases additional legal regulations are not necessary. Moreover, with respect to legal regulations, it should also have become clear that in most cases, it is not helpful to solely rely on the 'good will' of the people concerned, but that they should be designed in such a way that it is in the personal self-interest of all individuals con-

[82] Thus, we face again a situation with asymmetric information.

[83] We do not discuss here the control problems the public authority faces and the information problems connected with it. Such problems arise, however, with all kinds of environmental policy measures, be it command and control, charges or licences.

cerned to reach the aim for which the law has been enacted.[84] This implies that for analysing the proposed effect of legal regulations, the economic model of behaviour is employed. Moral categories certainly play an essential role in the process of enacting a law, but they are hardly relevant for the analysis of the effects of legal regulations.

It should not be overlooked, however, that the application of the economic model of behaviour in legal questions always takes place under limited information. This holds for the social scientist who analyses such regulations in the same way as for the legislator. For this reason, no 'ideal' laws are to be expected. The economic model can help to better assess ex ante the effects of alternative legal regulations; it will never be possible to cover all effects completely.[85]

Up to now, our discussion has related to public law. The economic analysis of law can make important contributions to this area.[86] In the past, however, it was much more concerned with private law.[87] There, the analysis of liability rules played a prominent role. In the following, this is demonstrated by using environmental liability law as an example.[88]

4.2.2 Environmental Liability Law

Traditional (legal) considerations of environmental liability law centred on the question of who is liable to compensate *after* damage has occurred. It has to be identified whether and for whom damage occurred, who is going to take the responsibility for this damage and how this damage can be compensated. This is an ex post-consideration, and it is a distributional question. The economic perspective, on the other hand, is an ex ante-perspective. The problem under consideration is not to distribute the burden of damages after they have occurred but to prevent their occurrence (if it goes beyond a certain, accepted limit) by reducing emissions (which are

[84] This does, of course, not mean that the legal regulation itself is in the interest of all individuals affected. But even if a specific regulation is directed against my personal interest, it might nevertheless be in my self-interest to keep to this regulation (in order not to be sanctioned) and to contribute, so that the aim of this law is reached.

[85] See for this also *Sections 6.3 and 7.2* below.

[86] See for this, for example, S. ROSE-ACKERMAN (1994) as well as the contributions in CH. ENGEL and M. MORLOCK (1998).

[87] See, for example, the basic papers of ST. SHAVELL (1980, 1984, 1985, 1987) as well as the contributions by M. ADAMS (1985) and A. ENDRES (1991).

[88] See for this also G. KIRCHGÄSSNER (1992a).

a side product of every industrial production) below a tolerable limit. Thus, the main task is prevention and not removal of damages.

That environmental liability law can have an important allocative (preventive) role in the context of environmental policy, besides the economic and bureaucratic instruments, relates again to an informational problem or a problem of informational asymmetry, respectively: Contrary to the emitting firms, the public authorities often do not possess the necessary information to use their instruments in an optimal way.

There are mainly two problem areas where the usual instruments are not sufficient and which can be handled by a (correspondingly suited) environmental liability law at least partially. First, accidents, which might cause considerable damages, can occur even if those who operate a plant keep to all prescribed security measures. Second, even during the usual operation of a plant, approved by the public authorities, damages can occur if, for example, new materials are used. Of course, it can be demanded that the ecological tolerance is checked in advance, but this could never be proved with absolute certainty. The obligation to compensate damages creates strong incentives for those who cause such damages to reduce the possibility that they may happen as far as possible. However, this only holds if damages also have to be compensated when they occur during the lawful and professional operation of a plant. Would the government have to compensate damages in such a situation, most incentives to avoid such damages would disappear.

Liability can be constructed by two different principles: liability for negligence and strict liability. With liability for negligence, the polluters who cause the damage are liable only if they did not take adequate care (which is demanded by the law and/or the courts). With strict liability, the polluters are always liable, unless the victims themselves did not take appropriate care. If the levels of care are fixed in an 'optimal' way, i.e. so that total (social) costs are minimised, both liability rules can lead to the same allocative result.[89]

This presupposes that on both sides care is necessary and that the public authorities know both parties' possibilities of taking precautions. In the

[89] For this argument, we assume that we are able to decide who the 'offender' and who the 'victims' is/are. Because of the 'symmetry in causation' already mentioned above, this is not always an easy task: Besides damage to nature, damage can only occur if somebody exists who is a potential victim: The victim is insofar in the same way causal to the damage as the offender. Thus, in many cases, the identification of the offender and the victim is by no way trivial: it presupposes certain value decisions. Concerning the most relevant questions of environmental policy this, however, does not cause major problems.

case of environmental damages, however, those who are potential victims have hardly any or even no possibility at all to take precautions against such damages, and the public authorities often have considerable difficulties in knowing which measures of care could be possible and make sense on the side of the potential offenders. This holds for accidents (catastrophes), but in most cases also if pollution is emitted into the air or the water during the normal operation of a plant which keeps to all regulations. In such situations, strict liability has allocative advantages.

The two liability rules also have different distributional effects. While in the case of liability for negligence the victim usually has to bear the damage as long as both sides take their mandatory precautions, in the case of strict liability, the offender has to bear it.[90] This difference, which at first sight is only a distributional one, can have allocative consequences as well. If such damages are by-products of a production process, they have to be added to the production costs of the respective product. However, this only happens if (because of the strict liability rule) such damages have to be compensated by the producer, even if they occur during the normal operation of a plant and even if all security regulations are observed. If this is not the case, the respective product will – if there is competition – be supplied at a too low price and the quantity sold will, therefore, be too large from an economic point of view. This implies that there will be too much environmental damage even from a purely economic perspective. If, on the other hand, the costs of such damage have to be added to the (purely economic) production costs, according to the polluter pays principle, it may even be the case that the production has to be closed down because it is no longer profitable.

Up to now, our considerations with respect to strict liability are based on the assumption that the offender has to compensate the whole damage. Whether this is the case or not depends upon – besides others – whether and to what extent a proof of causality can be made, which again depends on the distribution of the burden of proof. It also depends upon whether the damage can be insured or not.

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[90] It is possible, however, that the burden is at least shifted partially. If, for example, product liability is designed as strict liability, this can lead to higher costs, which increase the product price, because the producer has to contract liability insurance. This may imply that for the consumers the (expected) costs are ex ante the same as if liability for negligence held. Nevertheless, ex post there is a different distribution of the burden among the consumers. However, such shifting is not always possible. A car driver can, for example, not shift his insurance premia to the pedestrians he (potentially) injures.

For single individuals, liability limits may be given by their limited wealth, by statutory liability limits or by the casualty insurance. Insurance is often demanded because of the limited wealth of the potential offenders. An argument in favour of statutory liability limits which is often brought forward is that otherwise insurance would not be possible.

Liability limits reduce the expected burden of damage a potential offender would have to bear. Therefore, they influence his calculations and lead to allocative distortions. The same holds if not every damage has to be compensated, i.e. if there is a certain (positive) probability that the offender can evade the compensation of damage once it has occurred. This is the case if, for whatever reason, victims do not assert a claim (in court).

If damages are insured, liability is not restricted to the limited wealth of the offender. This has not only distributional consequences (which are desired) but also allocative effects. An insurance which goes to such a limit that the potentially occurring damages can actually be compensated, has the effect that because of the liability premia, the goods and services produced become more expensive. Therefore, certain risky techniques like the usage of super-tankers or tankers with unsatisfactory security techniques become more expensive compared to more secure techniques. This leads – ceteris paribus – to a reduction of accidents and, therefore, of possible environmental damages.

If the insurance premium and the payment obligation of the insurer are independent of the precautions of the potential offender, then he has no incentives to take on avoidance costs. Thus, we come to a typical situation of 'moral hazard'. One possibility to encounter this is to make insurance premia depend on avoidance measures. Thus, the problem to acquire information and to check that security regulations are observed is shifted from public authorities to the managers of (private) insurance companies. In this situation, however, those who operate the plants (or vehicles) have at least some interest to supply information of how damages can be prevented in order to get a reduction of their premium. Moreover, bonus/malus-systems can provide additional incentives for avoidance measures.

One main reason for the small effect liability law has had so far, with respect to environmental problems, is the fact that it is rather difficult to prove a causal connection between actions, for example by a commercial firm, which has an impact on the environment, and damage which has occurred somewhere else. Usually, liability law assumes that there is *one* offender and *one* victim. The action of the offender (causer) has to be causal for the damage to the victim. Therefore, in order to establish a claim for compensation, it has to be proved that (i) a (natural or legal) person has

suffered damage, (ii) that a certain action of the offender took place, and (iii) that exactly this action was causal for this damage.

With respect to environmental damage, the situation is often quite different. There are many victims and possibly also many polluters. Moreover, many cases of damage have 'complex causes', which implies that it is impossible to denote a single action as the cause of (or as the necessary condition for) damage. This holds especially for summation- and distance-damages, for which tree damages caused by the emission from millions of motor vehicles are a typical example: It is impossible to prove that a certain tree has been damaged by the emission from a certain vehicle. In such situations, liability law is overcharged with respect to the prevention as well as to the regulation of damages. The latter can at best be done by the government which – using petrol taxes – can indirectly shift the burden to compensate for these damages to those who caused them.

There are, however, also cases where it is impossible to present a classical proof of causality but where, nevertheless, a single polluter or small group of emitters which can be isolated is (with high probability) responsible for the damage. This holds, for example, if some firms are responsible for polluting the air, the water or the soil of a certain area with harmful substances, and when these substances have caused certain illnesses. In such a situation, the firms might be liable according to their share of emissions or there might be joint liability.

So the question still remains open of how it can be proved that a certain substance has caused certain damage. Especially with respect to damages which result from long-term impacts of harmful substances, it is in many cases impossible to prove that a certain substance, or even a certain substance which has been emitted by a certain firm, was causal for this damage. In many cases, it is at best possible to obtain a statistical proof, i.e. it is possible to show with statistical methods that some illnesses occur significantly more often in the surrounding area of a plant than in other areas. However, damage compensation can be demanded only if the damage is – with outweighing probability – caused by the corresponding firm or, if there is joint liability, the group of firms. What, however, does 'outweighing probability' mean exactly? The leeway of a court is rather wide in such a situation. The necessity to provide a proof of causality is, therefore, a considerable and sometimes unconquerable hindrance against a successful use of the liability law as an instrument of environmental policy.

If one wants to provide a proof of causality one is often, again, confronted with the informational asymmetry which is typical for environmental problems: Most of the relevant information is concentrated on the polluter, and in most cases he has no interest to disclose it. Thus, a right of the victim to get information from the polluter but also from the public au-

thorities is demanded. However, in many cases this might not be sufficient. Thus, reliefs up to the *reversal* of the burden of proof are demanded. This can, however, never be a total reversal; that would make no sense because it would imply a too strong liability. But if there exists a well-founded presumption that certain damage has been caused by one or by a group of polluters, it might make sense to demand from the potential offender to prove that the damage has not been caused by him. Of course, the reference to a 'well founded presumption' or a similar legal construction opens again a considerable leeway for the decisions of judges.

Preconditions for the effectiveness of the liability law as an instrument of environmental policy are, therefore, that environmental liability is – at least in the relevant cases – strict liability and that the burden of proof is alleviated for those who are damaged insofar as statistical proof of causality is accepted, and if there are well-founded presumptions, the burden of proof is reversed. Without these alleviations to obtain proof, environmental liability will soon be a blunt and hardly effective instrument, even if it is strict liability. These alleviations open a considerable leeway for the courts, but without such a leeway it is impossible to have an effective environmental liability law.

The development of environmental policy employing liability law and compensation for damages has taken place especially in Japan.[91] The main reason was the rather heavy air and water pollution during the fifties and sixties, which caused severe illnesses among the population. The main change of the policy happened in the course of four major lawsuits which took place in the years 1967 to 1973, and when all finally ended successfully for the complainants.

In the course of this jurisdiction, liability for negligence has largely been substituted by strict liability. Firms are also liable for damages which are caused by an ordinary operating plant which keeps to all regulations. Finally, alleviations have been introduced which make it easier for the victim to establish proof. Statistical investigations into the relation between the burden of certain pollutants and the illnesses caused by them have been accepted by the courts as proof of causality, even if in detail, no exact proof of causality could be performed. Moreover, it has been accepted as sufficient if there was a high probability that the pollutants were emitted by a certain plant. In order not to be liable, the operator of this plant had to prove that he was not responsible for the emission. Compared with the rules held before in Japan (as well as in nearly all other Western democracies) these were revolutionary new principles of jurisdiction which did not only have the effect that the firms involved had to pay considerable com-

[91] See, for example, S. TSURU and H. WEIDNER (1985).

pensation but that they also started to make strong efforts to reduce their emissions. Thus, compared with other countries, the Japanese environmental policy has been much more influenced by 'law' created by courts than by laws and regulations enacted by the parliament or the public bureaucracy.

This may lead to the assumption that the economic analysis of law is mainly suited to analyse those areas of the law which are closely connected with economic processes, which belong to the common law or the law of public regulation. This is true insofar as the main focus of the analyses has so far been on areas which, according to our ordinary language, are described as 'economic' ones. The economic analysis of law extends, however, over the fields of the common law and the law of public regulation. The economic analysis of criminal law,[92] for example, does not only apply to the economic model to analyse the behaviour of criminals, there are theoretical contributions about the pros and cons of different kinds of punishment[93] as well as several empirical papers about the deterrent effects of such punishment, including capital punishment.[94]

4.2.3 Economic Analysis of Fighting Illegal Drugs

As the example of the threat of punishment for trade in and possession and/or consumption of illegal drugs like heroin or cocaine shows, the aim of the application of the economic model is not only to investigate the effects of those kinds of punishment which are in use today, but also to look for 'better' policy measures.[95] That sometimes even severe punishment is threatened for the possession of and, in particular, for the trade in illegal drugs could not prevent that in many countries, like the United States, Germany, or Switzerland, the consumption of such drugs has increased considerably during recent decades. The traditional policy to fight against this is the demand for more police and more severe punishment. How far such policy measures can be successful is highly questionable, especially if one is not prepared to accept the final consequences of such a policy, to threaten with capital punishment the possession of even rather small amounts of illegal drugs, as some Asian countries do. It should, therefore, at least be worth asking whether there are no other policy measures which

[92] The economic analysis of crime and punishment goes back to GARY S. BECKER (1968). For an introduction see, for example, R.B. FREEMAN (1999).

[93] For a survey, see S. CAMERON (1988).

[94] See, for example, I. EHRLICH (1975), but also W.S. MCMANUS (1985) and J.J. DONOHUE and J. WOLFERS (2006).

[95] See for this, for example, W.W. POMMEREHNE (1993).

might – at least in the long-run – be more successful in reducing illegal drug consumption.

From an economic point of view, the market for illegal drugs is first of all a market like any other market, too, with supply and demand. The higher the price is which can be realised on this market, the higher will – ceteris paribus – be the supply, and the higher the price consumers have to pay, the lower will – again ceteris paribus – be the demand. On this market, the two 'fundamental laws of demand' hold, too, and there will be equilibrium at a market clearing price. If supply is increased for some exogenous reason, the price declines. This leads to an increase of consumption and – following this – also to an increase in the number of 'drug-deaths'.

The special features of this market are given by the structures of the supply side and especially of the demand side. Because trade in illegal drugs is threatened by severe punishment, a drug dealer, calculating his costs, does not only take into account the pure production costs as, for example, the costs of the imported raw material and the manufacturing costs, but also a risk premium. For the level of this risk premium, two elements are decisive: the level of the punishment and the probability that this punishment will be imposed, which again depends on the costs which are raised to reduce this probability as far as possible. Traditional police measures intend to raise the level of this risk premium. This leads to a price increase, which reduces demand. In addition, it is hoped that at least for some of the dealers, this business becomes unprofitable and they, therefore, drop out of the market.[96]

That these results could not be reached to the extent to be hoped for, depends on the special structure of the demand side. We have to distinguish two groups of drug consumers, the 'novices' and the 'addicted'. These two groups react rather differently to price increases (they have rather different price elasticities): A price increase will induce a considerable reduction in the demand of the novices (who are not yet addicted); they react similarly as with respect to (almost) all other goods. The addicts, however, will hardly reduce their consumption, because they are dependent on it. They will try to increase their efforts to obtain the necessary money to satisfy their 'needs' for such drugs. This might, for example, lead to increased criminal activity or to an increase in their willingness to engage in prostitution. Because of these different reactions, there is a tendency that with rais-

[96] As JAMES ANDREONI (1991) has shown, the level of the punishment has to be in a 'reasonable' relation to the criminal act. If the punishment is too strong to counteract the low probability of detection, the probability that a penalty is imposed might decline, which reduces the desired deterrence.

ing prices, the addicts will partially drive the novices out of the market. This might in the long-run lead to a reduction of drug consumption.

The drug dealers, however, understand this mechanism. They have an interest to have as many addicts as customers as possible, because large profits can only be achieved with those consumers. Because their clientele is, however, continuously reduced, be it by death or by voluntary or enforced exits from the 'scene', the dealers are always trying to get some of the novices hooked. This would be more difficult if, because of rising prices, the consumption of the novices should decline. As a counter-strategy it is, therefore, 'rational' for the dealers to give novices drugs as cheaply as possible, sometimes even free of charge, thus getting them addicted as quickly as possible in order to later have the possibility of exploiting them economically. A price increase which is caused by public policy measures is, therefore, above all, transferred to the addicts and much less to the novices.

Such a strategy could not be performed in a traditional market, because competition among dealers would prevent it. The addicts could leave their dealer and try to get their drugs more cheaply from someone else. Due to the threatened sanctions this is, however, very risky. To avoid this risk, trust has to be built up between the dealer and the consumer. This allows an exploitation of consumers which is not (or at least much less) possible on a competitive legal market.

This situation can only be broken up if the demand of addicts with their high willingness to pay is prevented on the illegal market. If this could be realised, the illegal drug market would (at least to a far extent) break down; it would possibly even cease to exist. From the point of view of the drug dealers, it would then no longer make sense to 'invest' in novices and to sell them drugs cheaply or even free of charge, because they would drop as demanders once addicted. This can, however, only happen if they get their drugs (or at least a substitute) from another source. The 'economic' proposal by, for example, WERNER W. POMMEREHNE (1993, 1995) of how to fight illegal trade in drugs, which is realised at an early stage in Switzerland, is, therefore, to register the drug addicts and to provide them daily from the state or an authorised public organisation with their 'necessary' amount of drugs, which they have to consume under controlled conditions.[97] For many people this proposal might seem to be unacceptable, but it has several major advantages compared to the traditional policy; the main advantage being that the market for illegal drugs largely vanishes. It

[97] This does not have to be free of charge; the addicts may just pay the 'production costs'. Because there is no risk premium involved, this would be much cheaper than today's 'market price'.

would no longer be possible to realise huge profits on this market as is done today. By the same token, this would also reduce the economic basis of organised crime. Of course, it needs to be taken into account that the 'criminal entrepreneurs' would shift their activities to other fields. Nevertheless, the net-benefit for the whole society would certainly be positive (and negative for those entrepreneurs). Because it would no longer be profitable to 'invest' in novices, it is to be expected that in the long-run, drug consumption could also be reduced.[98] This could be enforced by the fact that the registration of the addicted could ease their care and, therefore, also the possibility of exit. Moreover, because the addicts would no longer be forced to spend considerable amounts of money on drugs, criminal activities to obtain this money as well as prostitution would also decline. And because the publicly provided drugs would be clean, the health condition of the addicted as well as their ability to sustain a job could be improved considerably.

This implies in no way that it would not make sense within such a strategy to threaten the (illegal) drugs trade with punishment. A controlled provision of drugs for people who are addicted is something rather different from a complete liberalisation of trade in such drugs.[99] There should also be no illusion about the possible success of such a strategy: Even if the number of drug addicts and especially drug deaths could be reduced in the long-run, this addiction would vanish as little as the addiction to alcohol or nicotine. It is not a question of how this problem could be made to disappear completely, however desired (from a normative point of view) such a situation might be, but 'only' to limit it as far as possible. However, even for such a purpose, the policy and legal measures employed today are totally insufficient.

This example of the market for illegal drugs shows how the effectiveness (or the non-effectiveness, respectively) of policy and criminal law measures to reach specific given social ends can be investigated by using the economic approach, and how, in addition, proposals for alternative measures can be made which are better suited to reach those objectives. It is not the (primary) task to call in a kind of normative analysis these objec-

[98] A counter-effect might, however, result from the fact that for some (potential) novices, the entrance might appear to be less dangerous than today, because the drugs can be bought more cheaply later on.

[99] A proposal for a complete liberalisation has, for example, been made by JEFFREY MIRON and JEFFREY ZWIEBEL (1995). Because of its highly problematic implications, however, such a policy is not only less advantageous, but also much harder to be accepted in the political process. For a comparison of these two strategies, see W.W. POMMEREHNE (1993, 1995).

tives themselves into question, even though the answer to the normative question – whether one should strive for these objectives – cannot remain untouched by the results of the positive analysis. The main task is still to discuss whether the policy measures (employing criminal law) used today, are adequate to reach these objectives.[100] Again the starting point is the economic model of behaviour, i.e. the different agents are seen as utility maximisers under constraints, even if – as in the case of our example with the drug addicts – the objective function and/or the restrictions might be rather special.

Both cases, environmental legislation as well as the illegal drug problem, entail typical microeconomic concerns. The first example tackled problems which are in the centre of 'New Microeconomics' – informational asymmetry and information costs – while the problem in the second example was 'only' to grasp correctly the special structure of the demand side of a specific market. In answering such questions there is no systematic border between law and economics. In performing his analysis, the economist has to take into account the legal regulations as a certain kind of restriction on human behaviour, while the people the from the legal profession might hardly be able to get by without applying the economic model when analysing the effects of specific legal regulations. Again, we find quite a natural integration of two social sciences which have traditionally been seen to be quite different subjects. This also becomes obvious by the fact that scientists from both, the economics and the law faculties, are engaged in the special sub-discipline 'law and economics' which today is especially important in the United States.[101]

4.3 Economics as an 'Imperial' Science

The economic analysis of law and the economic theory of politics are just two examples which show how the economic approach has been transferred in recent years to traditional areas of other social sciences.[102] From a methodological point of view, 'economic' only means the application of the economic model of behaviour. Thus, it might be better to speak of an

[100] According to the 'bridge principle' "ought implies can", which is discussed below in *Chapter 7*, it does not generally make sense to strive for objectives if there are no means available to reach them.

[101] See for this also R.A. POSNER (1987) or C. KIRCHNER (1988).

[102] DAVID J. RAPPORT and JAMES J. TURNER (1977) show that there are also economic models in the natural sciences. This holds especially for biology, which is discussed below in *Section 8.3*.

application of 'methodological individualism' (or of the rational choice approach) in those sciences. In many cases, however, economists have themselves started to perform such analyses. This spread of economists and economics to – from a traditional point of view – 'foreign fields' is partly seen as 'economic imperialism'.[103]

Such an imperialism is not unusual in the social sciences. This is obvious for law. Because legal regulations exist for (nearly) all aspects of human life, it is also necessary to have the corresponding judicial investigations. As mentioned above, 'sociologies' have also been developed for nearly all aspects of human life, be it the family, the economy, health, religion, sports or suicide, to name just a few. Presumably, there is no area for which there exists an 'economics' today and for which there does not already exist a corresponding 'sociology'. But the Marxian political economy has been 'imperialistic' in this sense as well; its approach was applied to nearly all aspects of human life.

While traditional economics has mainly concentrated on economic questions in the narrow sense, modern economics has caught up with law and sociology and has become 'imperialistic'. Thus, today we have, for example, corresponding to the sociology of the family, also economics of the family, especially developed by GARY S. BECKER.[104] And like other 'new' economics, to some extent, it meets bitter resistance. Of course, nobody likes others to invade his district, and economics has been and still is "aggressive in addressing central problems in a considerable number of neighbouring social disciplines, and without any invitation." [105] Correspondingly strong is the occasional reaction, whereby the scientific discussion sometimes turns into pure polemic.

But in the economic profession itself, especially with its older members, these invasions into neighbouring social sciences have not been undisputed either. GEORGE STIGLER characterises this in 1984 in the following way: "The senior members of the economics profession have not been enthusiastic for the extension of their domain. This may be documented by the fact that none of the leading exponents of this extension, Coase or Buchanan or Becker – has been elected President of the American Economic

[103] See for this also G. STIGLER (1984), L. HIRSHLEIFER (1985), G. RADNITZKY and P. BERNHOLZ (1987), K. HOMANN and A. SUCHANEK (1989) or E.P. LAZEAR (2000).

[104] For the economic theory of the family see, besides G.S. BECKER (1981), the critical discussion of Y. BEN-PORATH (1982), M.T. HANNAN (1982) and W. MEYER (1987). For a Marxist political economy of the family see, for example, G. ROHWER (1985) and the criticism of B. SICHTERMANN (1985)

[105] GEORGE J. STIGLER (1984, p. 311). See also G. FLEISCHMANN (1988, pp. 22f.).

Association, although in the past an adequate number of less distinguished economists have been so honoured. The selection process has been dominated by established members of the profession and they have made their attitude clear." (p. 311.) As the award of the Nobel Prize for Economics to these three economists, which has since happened, shows, this attitude has at least more recently changed somewhat.

That the individualistic approach is often not welcomed in other social sciences, is partly due to the fact that the promoters of this approach are supposed to practise an apology of the market. This might hold for some proponents, but this is their personal conviction, and is logically independent from whether the economic approach is a suitable method to analyse social problems or not. More important is that it is often assumed that the proponents of the economic approach would declare in their imperialistic behaviour other approaches as useless or even as illegitimate for the investigation of social phenomena. It is correct that there are several statements which go in this direction.[106] However, this does not hold for all proponents of methodological individualism. Especially, the adherents of the philosophy of science of critical rationalism, on which methodological individualism is mainly founded, can hardly support such a position, because theoretical pluralism is one of the central methodological claims of this concept.[107] KARL-DIETER-OPP (1979), for example, points explicitly to the power of collectivist approaches in sociology. But not only the new individualist approaches have to be evaluated against the power of the (established) collectivist approaches, the same holds the other way round. And as KARL DIETER OPP (1979) has shown as well, in such a comparison the collectivist sociological approaches are not especially successful.[108] And in addition, the support of the economic model of behaviour does in no way mean that there should be no other social science besides economics. Even such a radical proponent of the economic approach as GARY S. BECKER, points to the complementary necessity of economics with sociology and psychology (1976, p. 14).

On the other hand it has to be seen that the application of the economic model of behaviour outside economics implies a change of the paradigm,

[106] See, for example, the remarks of KARL BRUNNER and WILLIAM H MECKLING (1977) about traditional sociology.

[107] On the other hand, the claim for theoretical pluralism is rejected by other programmes in philosophy of science, like constructivism. See, for example, F. KAMBARTEL (1976, pp. 83ff.), and for a critical discussion of this position, G. KIRCHGÄSSNER (1982, pp. 80ff.).

[108] The same holds for economics, if macroeconomic approaches without a microfoundation are seen as collectivist approaches.

to use the terminology of THOMAS S. KUHN (1962). From the point of view of traditional economics, a leading paradigm is applied to new fields. From the point of view of the neighbouring disciplines, a new paradigm comes up which is in competition with the one which was previously leading. The discussion has shown that with this new approach it is possible to tackle problems which seemed to be reserved so far. Where and how far this new paradigm of the social sciences will be successful, and perhaps even become the leader also in those other social sciences, remains to be seen. If this happens, it will certainly not be because all adherents of the old paradigm will be convinced. THOMAS S. KUHN (1962) has in his contribution on "*The Structure of Scientific Revolutions*" re-assured the old conviction of MAX PLANCK , who speaks in this context of "a fact which at first sight might appear somewhat strange": "An important scientific innovation rarely makes its way gradually winning over and converting its opponents: it rarely happens that Saul becomes Paul. What does happen is that its opponents gradually die out and that the growing generation is familiarized with the idea from the beginning" (1933, p. 299). This will not be different with respect to the application of the economic model of behaviour in the social sciences, because progress in the social sciences also depends on, as JOSEPH A. SCHUMPETER has noticed, old professors dying out.[109]

[109] See for this G. STIGLER (1984, p. 311).

5 Low-Cost Situations and Moral Behaviour

Up to now, everything seems to have worked quite well: our model of individual behaviour has been successfully applied not only in economics but in other social sciences, especially political science and law, as well.[1] Nevertheless, we have not tried to explain the behaviour of some of the most important actors in these fields: that of voters and of judges. One might apply this model here as well, but then immediately the question arises: What are the costs and the benefits to a voter or a judge when making a certain decision? This is not easy to answer – at least at first glance – because, for example, whether a voter decides for party A or for party B has an effect neither on himself nor on the electoral outcome.

This points to the fact that one of the basic implicit assumptions of economic theory – and of our examples from the political and judiciary fields as well – is that decisions matter: wrong decisions have a negative impact (a loss of possible utility gains) on the decision-maker. This assumption is uncontroversial for nearly all 'economic decisions', be it production or consumption decisions. For example, a wrong investment will lead to large losses for the investor; in the worst case he will lose his whole wealth. In such situations, there are strong incentives for individuals to behave rationally and self-interestedly. However, once the economic model of behaviour is applied to other areas, this assumption is no longer uncontroversial. In the political and judicial spheres, there are many situations where the decision has almost no impact on the decision-maker. With respect to such 'low-cost decisions', two types can be distinguished:[2]

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[1] This model of behaviour has also been successfully employed in many empirical studies. However, the empirical application has (at least up to now) not proved as successful as some proponents of this approach believe. For a critique of the empirical work in selected areas see, for example, D.P. GREEN and I. SHAPIRO (1994).

[2] See for this in more detail G. KIRCHGÄSSNER (1992). – Low-cost situations have until now only rarely been discussed in (economic) literature and, if at all, mostly with respect to voting decisions. See J.M. BUCHANAN (1954), J.C. HARSANYI (1969), G. TULLOCK (1971), G. BRENNAN and J.M. BUCHANAN (1984), G. BRENNAN and L. LOMASKY (1984, 1985, and especially 1993), H. KLIEMT (1986), as well as G. BRENNAN and A. HAMLIN (2000). In sociological litera-

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(i) The decision of the single individual is irrelevant for the individual himself and for all other individuals, but the collective decision is relevant for all individuals (Low-Cost Decision Type I).

(ii) The decision of the single individual is irrelevant for the individual himself, but it is highly relevant for a single other individual (or for a group of other individuals) (Low-Cost Decision Type II).

A standard example of the first type is the voting decision. There are many papers that ask whether it is rational to vote, as the individual does not influence the outcome.[3] However, more important is the question whether voters decide rationally between the alternatives, once they have decided to participate. Up to now, this question has been discussed in only very few papers.[4]

Judiciary decisions, especially those of Supreme or Federal Courts, are an example of the second type of decision. Traditionally, such decisions are analysed from a normative point of view: judges should behave as impartial spectators. Sometimes, as in "*The Theory of Moral Sentiment*" by ADAM SMITH (1759), it is assumed that they actually (attempt to) behave as "impartial and well-informed spectators" (p. 130 (III.2.32)), following their own consciences (and with responsibility towards the "allseeing judge of the world" (131 (III.2.33)). But aside from this kind of 'public interest approach', from a positive point of view there is – based on the economic model of behaviour – only rather limited literature about judiciary decisions.[5] In his "*Economic Analysis of Law*", for example, when discussing the U.S. law system, RICHARD A. POSNER (1972) implicitly assumes that judges attempt to maximise social welfare, i.e. (in his understanding) economic efficiency. But why should any judge want to maximise efficiency? After we have abandoned the behavioural assumption of benevolent dictatorship for politicians and bureaucrats, why should we keep (or even re-introduce) it for judges?

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ture such situations have been analysed with respect to environmental behaviour by A. DIEKMANN (1996) as well as A. DIEKMANN and P. PREISENDÖRFER (1991, 1992).

[3] See, for example, J.H. ALDRICH (1997) and M.P. FIORINA (1997) as well as surveys of earlier papers in T. SCHWARZ (1987, *Footnote 14*) and in J. STRUTHERS and A. YOUNG (1989).

[4] See, for example, G. BRENNAN and J.M. BUCHANAN (1984), G. BRENNAN and L. LOMASKY (1984, 1985, and especially 1993), as well as H. KLIEMT (1986).

[5] See, for example, W.M. LANDES and R.A. POSNER (1980), R. GELY and P.T. SPILLER (1990), or G. LEVY (2005). MATHIAS DEWATRIPOINT and JEAN TIROLE (1999) developed an economic theory of advocates. But these do not act in low-cost situations.

In such low-cost situations, the behavioural restrictions on which economic explanation usually relies, have no or at best only a small impact on the decision, while the preferences of the decision-makers gain influence. Therefore, the motivational assumption of self-interest, as discussed (and defended) in *Chapter 2,* is in such situations no longer sufficient to explain the behaviour of (rational) individuals; additional motivational assumptions are necessary. This is the point where moral behaviour can come into play, i.e. behaviour that is oriented towards certain (social) norms.[6] To prevent this, one might try to avoid such low-cost situations as far as possible but, as is shown below, this is not possible in many relevant cases. This has consequences for the application of the economic model for explanatory purposes as well as for policy purposes.

In the following, we first look in greater detail at low-cost situations in the political and judiciary spheres. Then we shall define and characterise 'moral behaviour', and distinguish it from 'hidden self-interest' as described in *Chapter 2*, which only looks like moral behaviour. Certain conditions have to hold before moral behaviour of a large number of citizens can be expected. Such behaviour (of many citizens) is, however, necessary for the well functioning of a modern democratic society with an economic market order. On the other hand, despite this important function, it implicates several political as well as methodological difficulties. In the following we will deal with these problems.

5.1 Low-Cost Decisions in the Political and Judiciary Spheres

As described above, "*The Economic Theory of Democracy*" by ANTHONY DOWNS (1957) brought about a radical change of paradigm for political science. This does not hold only for government, but also for voter behaviour. There are two decisions, which have to be taken. If a voter participates, he must decide to which party (or candidate) he will give his vote. Before this, however, he has to decide whether he wants to participate at all. A rational voter will participate if, and only if, his net benefit is positive, i.e. the benefit exceeds the cost. As initiated by ANTHONY DOWNS (1957, pp. 36ff.) and further developed (and formalised) by WILLIAM H. RIKER and PETER C. ORDESHOOK (1968), a voter's expected net benefit R is determined by balancing the benefits B which are expected to be re-

[6] K.D. OPP (1993) speaks in this context of 'soft' in contrast to 'hard' (economic) incentives.

ceived if the preferred party (and not the opposition) or candidate is successful, weighted with the probability P that the voter will decide the election by his vote, against the costs of the voting act, C, which result from the time he needs to participate and also to inform himself. Thus, we get the following expression for R:

$$R = P \cdot B - C.$$

If R is positive, rational individuals will participate, otherwise they will abstain. This approach is based on the so-called 'decision hypothesis': Individual participation is motivated by the assumption that the single vote might be influential or 'decisive'. This probability is the higher, the closer the expected outcome. Therefore, one of the empirically testable hypotheses of this model is that turnout should be higher, the closer the expected outcome of an election (or referendum).

In a large electorate, as, for example, in the case of general elections, the probability that a single vote will be decisive is infinitesimally small.[7] Thus, expected benefits are basically zero and can be neglected. In comparison to this, the costs of participation are high, even if they are low from an absolute point of view.[8] Therefore, R should be negative, and as a consequence one should expect participation rates close to zero. But the more individuals abstain from voting, the higher the expected benefits from voting, because the probability of being pivotal increases. This again creates an incentive to vote. But due to the fact that numerous individuals will make similar calculations, the probability of being decisive will again decrease. Thus, in large electorates, this model is consistent with a small, but not with a medium or high participation rate.

In reality, however, we observe high turnout rates in many general elections, be it elections to the German Bundestag or to the British House of Commons. This indicates that voters, if they participate, are 'irrational'.[9]

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[7] See A.J. FISCHER (1999) for a method to calculate the probability of being decisive.

[8] This also holds for the game theoretic approaches as developed in TH. R. PALFREY and H. ROSENTHAL (1983, 1985). Under full information and additional extremely unrealistic assumptions, it is possible to derive equilibria with a turnout which is not (close to) zero. However, these equilibria break down as soon as the assumptions become a little more realistic, if, for example, there exists uncertainty about the preferences and costs of other voters.

[9] See for this A. DOWNS (1957, pp. 36ff., pp. 260ff.) as well as G. TULLOCK (1967, p. 110ff.). The arguments which ANTHONY DOWNS puts forward in order to explain voter participation nevertheless as rational behaviour are, however, hardly convincing. For a critique see, for example, B. BARRY (1970a). – This paradox is one of the main starting points of the critique by DONALD P.

The discrepancy between the lack of economic incentives to vote and the high participation rates observed in many elections is known as the *'Paradox of Not-Voting'*: A theory which tries to explain voting as rational behaviour comes to the conclusion that the voting behaviour observed seems to be irrational.[10]

One might try to 'save' the economic approach by assuming that voters systematically overestimate their influence on the electoral outcome. However, this is hardly compatible with the basic assumption of rational behaviour (or, more exactly, in this case of rational expectations).

In order to avoid this paradox, WILLIAM H. RIKER and PETER C. ORDESHOOK (1968) reformulated ANTHONY DOWNS' model. According to their conception utility is not only derived from a certain electoral outcome but also from participation itself, independent of the outcome. Thus, to the investive component, $P \cdot B$, they added a consumptive component, D, which can be interpreted as the utility a voter receives from meeting his civic duties.[11] Thus, we get the following relation for the expected net benefit of participation:

$$R = P \cdot B + D - C.$$

This relation has no (straightforward) implications on the level of the participation rates; the critique mentioned of the original formulation does not hold anymore. However, it still holds that P, and by the same token $P \cdot B$, are infinitesimally small. Thus, in nearly all relevant cases the relation actually reduces to

$$R = D - C.$$

given that $P \cdot B \approx 0$. But as long as there are no explicit assumptions on the concrete factors determining C and D, this model is tautological or at least trivial. Taking into account that C and D should not vary too much with respect to different elections of the same type, this relation cannot explain

GREEN and JAN SHAPIRO (1994) of the rational choice approach applied in Political Science.

[10] See for this, for example, HOWARD MARGOLIS: The problem is, "that we must account for the observation that people make contributions to what they perceive as the public interest (as by perceiving and acting upon a duty to vote) in contexts where the return to the individual appears inconsequential and the effect on society is so microscopic as to be invisible. How can this be reconciled with the notion of rational, utility-maximizing individuals which proves so potent in analyzing economic behaviour?" (1981, p. 266).

[11] See W.H. RIKER and P.C. ORDESHOOK (1968) for further explanations. Similar ideas can already be found in A. DOWNS (1957, pp. 262ff.). For critical remarks on this approach see R. ZINTL (1986).

different turnouts for such elections. Moreover, accordingly, the act of voting is mainly determined by 'sociological' factors, which is not necessarily consistent with an (economic) model of rational voting behaviour.[12]

To avoid this, JOHN A. FEREJOHN and MORRIS P. FIORINA (1974, 1975) propose a game theoretic model of voting behaviour, a 'minimax-regret-model'. Voters accept some small, but definite costs, *C*, in order to avoid a large loss, *-B*, even if the probability of the latter is very small. Such a large loss would occur if not the preferred party or coalition won the election but the opposition, solely for the reason that the individual voter did not participate. In this game theoretic approach, the only objective of the voter is to prevent the worst possible outcome. Thus, the probability that something occurs does no longer play any role; only the possibility matters. All voters who are able to discover a difference between the two parties will participate.

This model is, however, not consistent. The worst case for an individual voter might not be that the preferred party or coalition does not win the election (but the opposition), but rather that he himself could be killed in a traffic accident on his way to the polling station. (Moreover, the probability of the latter might be much higher than the probability of being the decisive voter.) As in the original model of ANTHONY DOWNS, the rational voter does not participate in this model either.[13]

A series of further attempts to 'save' the economic model of voting behaviour in a way that participation can be interpreted as an investive activity are also not very convincing.[14] On the other hand, there are a considerable number of empirical papers that investigate whether expected closeness has an impact on the election turnout. Most papers come to a positive conclusion.[15] Nevertheless, it still remains difficult to explain the (high) turnout level on the basis of the economic approach.

If despite the positive costs voters nevertheless participate in an election, this must have reasons which are not directly related to individual utility maximisation. A rational voter will recognise that the investment value of voting is zero. In *Chapter 2* it has already been mentioned that

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[12] See G. KIRCHGÄSSNER (1980). For further critique, see B. BARRY (1970, pp. 13ff.), J.A. FEREJOHN and M.P. FIORINA (1974, 1975), G.S. STROM (1975), as well as R. ZINTL (1986).

[13] Critique of this model along such lines is put forward by G.S. STROM (1975) as well as by some other participants in a discussion in the *American Political Science Review* 69 (1975, pp. 914 – 919).

[14] See, for example, T. SCHWARZ (1987).

[15] See, for example, the papers mentioned in *Footnote 3* or, with special emphasis on the Federal Republic of Germany, G. KIRCHGÄSSNER and A. MEYER ZU HIMMERN (1997) as well as L.P. FELD and G. KIRCHGÄSSNER (2001).

another reason for participation might be social pressure.[16] But despite of the fact that such pressure can exist for many voters, this argument is hardly sufficient to explain the high turnout rates in many countries with democratic political systems. If, for example, in Switzerland on average about 40 percent of the electorate participate in referenda, it is hardly plausible that exactly those 40 percent should be under especially strong social pressure. If, however, neither a strong economic utility calculus nor the existence of social pressure is sufficient to motivate the participation in a referendum or an election, the reason for such behaviour has to be somewhere else. As WILLIAM H. RIKER and PETER C. ORDESHOOK (1968) have correctly seen, only the 'consumption value' can count. Consequently, they see in the satisfaction people get from fulfilling their civic duty one of the basic motivations for electoral participation.[17] Thus, this consumption value may depend on following social norms.[18] 'Soft incentives' like social pressure within a certain group can force people to obey such rules. Because it imposes costs, following such rules is, however, not in the genuine self-interest of the individual. But the costs for such 'moral' behaviour, in this case for the act of voting, are rather low. Therefore, the main difference between usual economic decisions and the voting decision is not that moral rules are inexistent for economic behaviour or that self-interest is not relevant for voting decisions, but that costs of following social (moral)

[16] See for this R. ZINTL (1986) or A. SCHRAM and F.A.A.M. V. WINDEN (1991).

[17] If, for example, a candidate in a contested district is able to appeal especially strongly to this civic duty and – in this way – to mobilise voters, this consumption value might also depend on the expected closeness of an election (and also on its importance). Thus, the empirical results concerning the closeness hypothesis are compatible with this 'consumption approach'. For this 'mobilisation hypothesis', which is an alternative to the 'decision hypothesis' originally put forward by ANTHONY DOWNS (1957), see G. KIRCHGÄSSNER and J. SCHIMMELPFENNIG (1991), G. KIRCHGÄSSNER and A. MEYER ZU HIMMERN (1997) or G. KIRCHGÄSSNER and T. SCHULZ (2005), as well as the literature mentioned there.

[18] See for this also P. MEEHL (1977). - A similar argument was put forward by HOWARD MARGOLIS (1981, 1982). In his model, voters have two different utility functions, individual and group-interested ones, and the 'ultimate preferences' which govern their actual behaviour are some kind of combination of these two utility functions. Voter participation implies in this model that the individual follows the group-specific and not the individual preferences. Moreover, such behaviour is consequentialist from a group-specific point of view, but not from an individual one. (See also A. EDLIN, A. GELMAN and N. KAPLAN (2007).)

rules, if this implies a deviation from self-interested behaviour, are usually high in economic decisions and rather low in voting decisions.[19]

However, still more interesting than the turnout problem is the question for which party or candidate people will vote. The answer from traditional political science as well as from the economic theory of voting behaviour following ANTHONY DOWNS (1957) is clear: the voter will choose the party or the candidate from whose policy he expects higher benefits. The question mainly discussed in literature is not whether this is true but only what the variables influencing the expected utilities of the two parties are.

But why should a rational voter behave in this way once he has recognised that his vote does not count? A 'wrong' decision does not impose any costs on him.[20] As the single vote does not influence the outcome at all, the costs of a 'wrong' decision are essentially zero. If we follow HARTMUT KLIEMT (1986), the voting decision is taken behind a "veil of insignificance". On the other hand, the costs of a collectively wrong decision can be very high, in some cases even dramatically high for some individuals. But nevertheless, the costs of a 'wrong' decision are still much smaller than those with respect to the participation decision. There might be social approval or pressure which forces people to participate, but as long as voting is secret, there exist no such incentives with respect to the decision between different parties and candidates. Thus, we have here the typical situation of a type I low-cost decision.

If we assume that people nevertheless vote according to their (subjectively perceived) interests, the only reason for this could be psychic costs which occur if they deviate, i.e. in this case if they vote against their own interests (or against the interests of their social group or class). The theory of cognitive dissonance already mentioned in *Chapter 2* tells us that psychic costs occur if the actual behaviour of individuals is in dissonance to their own moral values and/or the moral values of their peer groups. Thus, people might vote for those candidates or parties they think they should support. These will often be those parties which (at least officially) represent their class or group interests: workers will vote for Social Democratic

[19] We do not investigate here how social norms emerge. However, as, for example, KARL DIETER OPP (1979) shows, this can also be explained by the economic approach. See also the contributions in M. HECHTER, K.-D. OPP and R. WIPPLER (1990).

[20] This question was first raised by G. BRENNAN and J. BUCHANAN (1984) and is discussed extensively by G. BRENNAN and L. LOMASKY (1993).

parties, Catholics for Christian Democratic parties, and so on.[21] Moreover, if an individual has internalised that he should tell the truth, voting against his own interests can impose psychic costs on him. The same applies even more for feeling (together with others) responsible for a defeat of the preferred party.[22] If we can accept this argument, there are at least 'soft incentives' for the individuals to vote according to their own interests. It can also explain why people do not vote randomly, but react to perceived changes of actual party policies and/or party programmes in a systematic, predictable manner. Without such a 'psychological' assumption, however, the results of popularity or voting functions, for example, could not be explained by the economic approach.

But as only soft incentives work in this direction, they are in competition with other soft incentives. This holds especially, if we do not look at actual voting decisions but at the answers in popularity polls. 'Expressive voting' may provide the individual with more psychic benefit than answering according his own interests. The voter may wish to punish the preferred party for deviating in its actual policies from the ones which had been promised before the election, even if he knows that he will vote again for the same party at the next election.[23] This can explain why there are systematic differences between actual voting results and the results of popularity polls, causing a so-called 'electoral cycle', which means that the support for the governments decreases after the election and increases again before the next election. Such a cycle has often been observed.[24]

The fact that moral rules can play an important role in such a situation has been convincingly argued by GEOFFREY BRENNAN and L. LOMASKY (1985). With reference to the "Theory of Moral Sentiment" by ADAM SMITH (1759), they argue that on the point of voting, people have much more regard for others and are less self-interested than in the market

[21] Problems with this argumentation can, however, occur if voters belong to different social groups with different value systems, like, for example, Catholic workers.

[22] Note that for this argumentation it is unimportant whether the behaviour of the single individual is decisive for the social outcome or not: one essential of moral evaluations is that they are (on the individual level) not purely consequentialist.

[23] In such a situation, voters can also behave strategically, hoping to force the party back in the direction of their own preferred policy. For a detailed discussion of expressive voting, see G. BRENNAN and L. LOMASKY (1993), G. BRENNAN and A. HAMLIN (1998, 2000) or PH. JONES and J. HUDSON (2000).

[24] For the electoral cycle, see the classical contribution of C.A.E. GOODHART and R.J. BHANSALI (1970) as well as the survey in G.T. SOLDATOS (1994).

place.[25] This becomes especially clear if we switch from voting decisions to referenda. If the moral rule requires income redistribution from the rich to the poor, (some) people will vote for redistributional measures even if the imposition of such a policy is against their (financial) self-interest.[26] Knowing that one's own decision does not matter at all makes it cheap to follow the acknowledged moral rule. On the other hand, if the redistributional measure is rejected by the majority, hardly anyone of those who voted for it feels himself obliged to follow this norm privately and to spend voluntarily the same amount of money on the poor. In other words: there is no total crowding out of private charity by public redistribution.[27]

At first glance, the situation might seem similar for political decisions. They usually have no direct effect on the income or the utility of the deciding politicians. Therefore, political decisions might seem to be determined solely by their preferences, and in view of this, it is important that they have 'benevolent' preferences. If one assumes that the democratic process selects people with benevolent preferences for top political jobs (or at least works in this direction), such considerations can lead to the public interest approach of politics or, what is equivalent, to the concept of democratic government as a benevolent dictator.

However, as explained in the previous chapter, this view is inherently wrong. Governmental decisions are typically not low-cost decisions but are investment decisions: they influence the re-election chances of the party(ies) in power, and the outcome of the decisions can, therefore, have considerable influence on the future utility of the politicians. Insofar there is no difference from typical economic decisions, especially from investment decisions. It is not without reason that – following JOSEF A. SCHUMPETER – we speak of a 'political entrepreneur'. Nevertheless, there is one important difference between the political and the economic entrepreneur, which has methodological consequences. As explained in *Chapter 2*, in most cases we are not interested in individual decisions but in the collective decision, i.e. the aggregation of individual decisions. However, if governments (or public bureaucracies) take decisions, there is usually only one

[25] See also G. BRENNAN and L. LOMASKY (1984).

[26] See for this the analysis of the referenda about the Swiss old age pension system in the canton Basel-Landschaft by W.W. POMMEREHNE and F. SCHNEIDER (1985). – For a detailed discussion of the 'moral' reasons for redistribution, see G. BRENNAN and L. LOMASKY (1993, pp. 41ff.).

[27] According to B.A. ABRAMS and M.D. SCHMITZ (1984, 1987), in the U.S. this kind of crowding out is below 30 percent, i.e. redistribution with an amount of one U.S. Dollar reduces private charitable contributions by less than thirty cents. See for this also J.S. FERRIS and E.G. WEST (2003) as well as T.A. GARRETT and R.M. RHINE (2006).

decision unit and, therefore, also only a single decision. This holds, independent of the concrete decision process in the government and/or the bureaucracy. Thus, the construction of a typical agent is at least not without problems. Individual preferences and subjective evaluations play an important role in such situations, and there is no aggregation which could lead to a balance in the direction of a typical behaviour pattern. But it still holds that – in principle – restrictions which change provide incentives for systematic behavioural changes. This holds the more, the stronger the restrictions are binding, i.e. the less the leeway is in which politicians are able to perform an ideologically oriented policy.[28]

The specific characteristic of voting decisions or, more generally, of type I low-cost decisions, is that not the individual, but the collective decision matters for the deciding individual. Judiciary decisions are different insofar as the single individual (or a small group of judges) determines the collective outcome, but is himself not at all influenced by it. Yet, it is essential for the independence of the judiciary power that no such influence exists. Judges ought to have no personal interest in the result of their decision; this is a necessary prerequisite for something like 'justice' to function.[29] 'Wrong' decisions might be corrected by higher courts, but as long as the decision lies within the range of legally possible outcomes, the deciding judge will at least have no pecuniary loss from such a decision.[30]

The situation might seem similar for governmental decisions. Members of governments usually have no direct pecuniary loss from a wrong decision either, even if such a decision is criticised by an audit office or if it is suspended by a supreme court. This analogy might be correct in the United States as far as judges are elected (partly by the people) and want to be re-elected.[31] In other systems, like in the Federal Republic of Germany, however, judges, once they are elected, will remain until their legal period of

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[28] This is the reason why we can explain vote-maximising behaviour of governments but not ideologically oriented behaviour; the latter can be at best predicted by using past behaviour. See for this, R. ZINTL (1989) or G. KIRCHGÄSSNER (1989).

[29] Contrary to judges, advocates have a strong personal interest in the outcome. For a respective theory, see M. DEWATRIPONT and J. TIROLE (1999).

[30] On the effects of judiciary independence see, for example, F.A. HANSSEN (1999, 2000, 2004), L.P. FELD and S. VOIGT (2003, 2004), or R. LA PORTA et al. (2004). The problem is, however, that there might be a trade-off between independence and accountability of judges. See for this, for example, T. BESLEY and A. PAYNE (2003), E. MASKIN and J. TIROLE (2004), or S. VOIGT (2005).

[31] For the different procedures to elect judges in the U.S. states and for the impact which these procedures have on the independence of judges and on the number of cases, see F.A. HANSEN (1999).

office is over and/or they resign.[32] If they do not violate the law, nobody can dismiss them. Of course, many young judges, like other people, will try to work their way up, and their chances will be better the less decisions are suspended by higher courts. But there still remains a wide leeway for many decisions. And the older judges become, the higher up they are – ceteris paribus – within their hierarchy and the more important are, therefore, their decisions, but at the same time the fewer chances they have for further promotion and the weaker are the corresponding incentives.

One might compare the situation of a judge with that of a bureaucrat in the public administration. They are also not personally affected by the consequences of their decisions, and their independence is also necessary for the functioning of a modern legal state. However, the leeway of bureaucratic decisions is usually much smaller than that of judiciary decisions. And superior bureaucrats and/or politicians have much more influence on the future career of bureaucrats than on those of judges. Bureaucrats can be dismissed or at least transferred to other departments if they make 'wrong' decisions. And this is the easier, the higher a bureaucrat is within the hierarchy and, therefore, the more influential he is.[33]

The very pure cases of type II low-cost decisions are those of supreme courts, especially if the judges are elected for life, as this is the case in the United States. Once somebody is in such a position, future career considerations can no longer play an important role. Thus, those judges have a considerable leeway to decide according to their own ideas. Of course, all judges have to decide according to the law, and laws are usually formulated in a way that leaves only little leeway for the judges. However, sometimes politicians, who may have high costs of 'wrong' decisions, pass on their responsibility to people with low costs, especially to supreme or constitutional courts.[34] Thus, their leeway can be extremely large: these courts

[32] This situation is nearly the same in Switzerland, besides the fact that the aspect of the election is of somewhat more importance than in Germany.

[33] There is another basic difference between judges and bureaucrats. Bureaucrats can supply their services rather independently from demand, whereas judges can produce decisions only if they are asked. This difference is especially relevant if in some areas the legal frame can be made of (parliamentary) laws, bureaucratic provisions and/or judicial law. Parliamentarians and bureaucrats can act if they intend to, whereas judges have only a possibility of influencing such a legal area if a case is brought before the court and if this area is not totally determined by parliamentary laws. Why politicians might have incentives to leave such areas open to judicial decisions is discussed in W.M. LANDES and R.A. POSNER (1975).

[34] In the member countries of the European Union such decisions are also partly shifted to its institutions.

sometimes abolish laws which have passed the parliamentary process, and sometimes they even create new laws (or they restrict the range of future legislation – according to their interpretation of the constitution – to such an extent that there is hardly any room left for parliamentary decisions).[35] Once a case is brought before such a court, there are only very few restrictions for its decision power. These judges are - to some extent - dictators; they can make decisions largely according to their own ideas, even in democratic societies.

This might be the reason why the concept of the benevolent dictator has been applied to judicial decisions, even by such economists who strongly reject this model for governmental decisions. As mentioned above, in the economic analysis of law, it is usually implicitly assumed that judges try to make decisions in order to promote efficiency. But why should any judge be interested in efficiency? Why should he follow this kind of public interest approach? Given the individual motivation of the acting persons, there are no good reasons to believe that judges behave differently from politicians.

But what are the incentives for judges (or courts) to make 'good' decisions? "We assume that judges, like other people, are rational maximisers of their satisfactions, which include not only pecuniary income but other things which people value, such as leisure, prestige and power."[36] However, their current income is not affected by the low-cost decisions judges make. The desire for leisure might provide an incentive for judges to make 'revision-proof' decisions, because otherwise a case might come back and would have to be dealt with again. However, it hardly can provide sufficient incentives for judges to look for more than a purely formal correctness of their decisions. Power considerations, i.e. to have the possibility to make (important) decisions according to one's own ideas which have to be accepted by others, can certainly play an important role for people to strive to become a judge. Accordingly, W.M. LANDES and R.A. POSNER (1980) develop a 'power theory of judicial behaviour'. However, once a judge is in his preferred position, what role can power considerations play to decide

[35] In the Federal Republic of Germany, this holds especially for the Federal Constitutional Court (Bundesverfassungsgericht) and for the Supreme Labour Court (Bundesarbeitsgericht). The Federal Constitutional Court can cancel laws which have been decided on by the majority of both chambers of the German parliament, the Bundestag and the Bundesrat, if they contradict its – by no other institution controllable – interpretation of the federal constitution (Grundgesetz). The Supreme Labour Court decides because of the inactivity of the German parliament with regard to large areas of German labour legislation.

[36] W.A. LANDES and R.A. POSNER (1980, p. 369).

in one direction or another? Correspondingly, the empirical evidence in support of their theory presented by the two authors is rather weak.[37] Thus, the only really relevant factor which remains is prestige, which may be related to the future career and, therefore, also to future income.[38] Such prestige exists especially within the social peer group. This is formed by the community of judges and by its corresponding scientific community, the professors and students of law, but it might also be related to the political sphere. If the decisions of a judge are often suspended or, what is especially important for supreme court decisions, are criticised by leading academics, his prestige could be on the decline. This holds especially, if such decisions are discussed in public. Nobody likes to be called incompetent publicly, for example in newspapers. However, as long as such a critique comes (only) from the political opponent and not from those who were responsible for electing this judge into his current position, such a critique can be irrelevant or even improve prestige in the relevant groups.

Granting or withholding prestige is one kind of social pressure. There are some other kinds of social pressure which can be exerted on judges as well. The legislator might threaten to reduce the leeway, especially of supreme courts, if the latter make decisions which are contrary to the intentions of the legislator.[39]

However, compared to traditional economic decisions with their monetary consequences, the costs which can be imposed on the decision-maker by such social pressure are rather small. The less important such external pressures are, the more weight internal pressures gain, i.e. the more important become the preferences of the judges and especially the moral rules to which they feel obliged, and the available information. They determine the judicial decisions to a large extent. There are hardly any possibilities to influence these decisions by providing hard (economic) incentives and, moreover, there are only few possibilities with soft incentives. Therefore, in analysing judicial decisions with the economic model of behaviour, we come into both problems together which we find with respect to political decisions. As with respect to voting decisions, the outcome does not matter for the decision-maker and, therefore, preferences and moral rules play an

[37] Actually, according to their earlier paper (W.M. LANDES and R.A. POSNER (1979)), they measure the output of courts by precedents, and they investigate, for example, how the citations of such precedents depend on certain other variables.

[38] For the impact of career aspects on judicial decisions see, for example, G. LEVY (2005).

[39] This might also reduce their prestige. See for this R. GELY and P.T. SPILLER (1990).

important role. And, as with respect to governmental decisions, at least for higher and especially for supreme court decisions, we do not have a representative actor but have to analyse single, unique decisions. Thus, the circumstances are not particularly well suited for applying the economic model of behaviour, and it is no surprise that these decisions have so far not been analysed by using this approach. It is rather difficult to do so.

Besides the public opinion which probably also has an impact on the decision of judges, there are other actors who are especially interested in the outcome of supreme court decisions: politicians (the government and political parties) and pressure groups.[40] Under totalitarian regimes, politicians exert massive pressure to obtain the decisions demanded. Since there exist no hard incentives to make (according to the law) 'correct' decisions, these pressures can often be successful.[41] In democracies with separation of powers, however, this possibility does (hopefully) not exist. Providing information is the only (legally) possible direct way to influence the court. Parties as well as pressure groups will make use of this as far as possible. Before a decision is made, they will provide information about the possible effects of the outcome, whichever direction the decision takes. Still, this way is sometimes not very successful, if contradictory information is provided by opposing parties or groups.

Another way to influence the general tendency of decisions, not in specific cases, is to influence the selection of the judges. If it is true that their decisions are mainly determined by their preferences, and if the traditional assumption of the economic model that preferences are constant over time is at least approximately true for judges, one is able to predict the direction of a judge's future decisions as soon as one knows his preferences (the moral rules to which he feels obliged). Thus, it is important to choose the

[40] For a discussion on how much the decisions of the United States Supreme Court depend on changes of the public opinion, see W. MISHLER and R.S. SHEEHAN (1993, 1994) as well as H. NORPOTH and J.A. SEGAL (1994). – How much such changes influence judicial decisions also depends on how the judges are elected. HENNING BOHN and ROBERT P. INMAN (1996) present evidence that formal fiscal restraints in U.S. states which were decided by the people were successful, especially if they were controlled by constitutional courts of the states. Judges who were directly elected by the citizens rather than being nominated by legislators enforced balanced budget rules more consequentially: In the period from 1970 to 1991, in those 21 U.S. states where the judges had been elected by the citizens the budget deficits were on average 96 U.S. Dollar per capita smaller than in those 15 states where they were nominated by the government or the parliament.

[41] Moreover, totalitarian regimes can change the law and in this way get the results for which they strive.

judges 'correctly', and this holds especially for members of supreme courts who are usually elected by the government. Information about the preferences can be derived from earlier decisions and from the political groups or law schools with which a candidate is affiliated. Therefore, using this information, politicians and pressure group leaders will try very hard to get their candidates elected. Trade unions, for example, have great interest in the composition of the Federal Labour Court, state governments in the composition of the (state) administrative courts, and the central government in particular in the Constitutional Court.[42]

Therefore, if we are to analyse how judicial decisions come about, one should look at the selection mechanisms by which judges are elected. There are three different mechanisms available, all of which are used in democracies: (i) selection by the public bureaucracy, which actually comes close to self-selection, as the responsible public officials have often been judges themselves or have at least the corresponding qualifications, (ii) selection by elected politicians, the parliament and/or the government or by a committee whose members themselves were chosen by the government, and (iii) democratic election by the public. All three procedures have advantages and disadvantages which will, however, not be discussed here.

Members of the Board of the Central Bank are in a similar position as judges of Supreme Courts.[43] Their decisions have virtually no impact on their own well-being either,[44] but they can have a strong impact on the development of the whole economy. Whereas the impact on the average individual might usually be small, for some individuals it might have even dramatic consequences, if, for example, a firm has to be closed down due to a rise in interest rates caused by central bank policy.[45] And again, there are other people in addition to the public who are especially interested in the outcome of these court decisions: besides economic agents and their

[42] On the process for electing federal judges in the United States see, for example, T. STRATMANN and J. GARNER (2004), B. GOFF (2006), L.B. SOLUMN (2005) as well as some other papers in issue 2 of *Cardozo Law Review* 25 (2005).

[43] The same holds for members of auditing courts. For an economic theory of auditing courts see B.S. FREY (1994).

[44] There is one notable exception: The income of the leading managers of New Zeeland's central bank depends on the development of the price level. If the actual inflation rate deviates considerably from the alleged range between zero and two percent, the president of the central bank can even be dismissed. See for this, for example, G. ILLING (1997, p. 131f.).

[45] The main difference to judicial decisions is, of course, that the central bank managers do not personally know those people who are strongly influenced by their decisions.

pressure groups, politicians (political parties) in particular try to have some impact on these decisions by selecting the 'right' people.[46]

5.2 Moral Behaviour: Definition and Classification

But what do we mean if we say that voters or judges (or even central bank managers) are behaving 'morally' in certain situations? Using ordinary language, we might speak of moral behaviour if any 'good' action is done for its own sake and not to in order to achieve a certain goal.[47] Such moral behaviour may be advantageous to the individual: then, such actions are even performed from pure self-interest. In such a situation, there is no problem at all. Therefore, one of the strategies in economic or social theory to handle the problem of moral behaviour is to show that all behaviour which is usually called 'moral' is indeed performed out of self-interest; one has to look only somewhat more carefully to detect that this is the case.[48] But even if one does not hold this view, it is a meaningful strategy to set the incentives for individual behaviour in such a way as to make moral behaviour (as far as possible) unnecessary, i.e. that the individuals show the desired behaviour if they follow their self-interest.

The problem behind this definition of moral behaviour is to establish criteria for when an action shall be called 'good in itself' and should, therefore, be performed 'for its own sake'. And why should any action be performed 'for its own sake' at all? If one starts from given (divine) norms which demand certain behaviour, then such actions are never performed for themselves, but to comply with these norms. But why should one comply with such a norm? This is answered differently by different religions, but all of these answers transcend the scientific discourse: references on trans-human authorities can be motivating arguments for many people, but

[46] There is a whole pile of literature concerning partisan impacts on central bank policy, especially for the U.S., but also, for example, for Germany. However, the empirical results are up to now far from being conclusive: There are many studies which find such an influence, but also many which deny it. Moreover, if such an influence is to be found, it is more in the objective than in the instrument variables. This, however, seems paradoxical: how can a central bank successfully pursue such a policy if it is not reflected in its instruments? For this discussion see, for example, G. KIRCHGÄSSNER (1996a) or R. VAUBEL (1997).

[47] For such a definition, which takes up an idea of ARISTOTLE, see, for example, O. SCHWEMMER (1985, pp. 35ff.) or A. ANZENBACHER (1995). For the meaning of 'good' in philosophical literature, see also J.L. MACKIE (1977, p. 50ff.).

[48] See, for example, D. GAUTHIER (1986) and – for a critique of this position – J.L. ARNI (1989a) as well as P. KOLLER (1994).

they cannot serve as arguments in a scientific discourse. Thus, the only possibility which remains is the reference to the interests of other individuals as, for example, IMMANUEL KANT (1785) in his famous "*Categorical Imperative*", Utilitarianism, and also JOHN RAWLS (1971) in his "*Theory of Justice*" do. But then, moral behaviour becomes quite close to or even identical with altruistic behaviour. Correspondingly, in the following we therefore use both expressions synonymously.[49]

One might speak of altruistic behaviour whenever an action is performed which imposes costs on the actor and which increases the benefits of others but not (or at best marginally) the benefit of the actor himself; because of the costs, the net-benefit of the actor is even diminished. Thus, an individual is behaving altruistically if he makes a positive contribution which increases the utility of another individual, and if this contribution imposes costs on the individual. The individual might, however, receive a (psychological) benefit from his contribution, if he spends a certain amount of money and/or time on a 'good purpose'.[50]

Even if such altruistic behaviour is rather the exception than the rule, it should be more frequent if there are strong emotional relations between the acting persons, for example, within a family. If behaviour within such communities is to be explained, it does not make much sense to assume strictly self-interested behaviour of all agents as, for example, GARY S. BECKER (1974, 1981) does in his economic theory of the family.[51] Actu-

[49] Usually it is stated that the Categorical Imperative is a deontological concept not taking into account the consequences of an action, while Utilitarianism is a teleological, consequentialist concept. However, can you really "Act as if the maxim of your action were to become by your will a universal law of nature" (I. KANT (1785, 421) if you expect detrimental consequences of such an action? Insofar, in a meaningful interpretation, the categorical imperative has also a teleological component.

[50] A formal representation of this definition is – following J. ANDREONI (1988, 1989, 1990) – given in G. KIRCHGÄSSNER (2001). In this way it is possible to integrate moral (or altruistic) behaviour in the model of homo oeconomicus. He can also strive for long-term political objectives, for example, by participating in elections and referenda. There, it is not necessary to develop an additional concept of 'homo politicus' to allow for "long-term constitutional and ecological interests" as MALTE FABER, REINER MANSTETTEN and THOMAS PETERSEN (1997, p. 482) did. For a critique of this concept see P. BERNHOLZ (1998).

[51] One might interpret such behaviour as self-interest in the long-run and, therefore, as 'prudent' behaviour (in the sense defined below), because hardly any such community will exist in the long-run if one party always only gives and the other always only receives. Nevertheless, such an assumption is hardly compatible with the reality in many families.

ally, he also assumes altruism: The husband, for example, weighs up whether the utility he gains by reading a book at night, is greater than the utility loss his wife will suffer by being disturbed while sleeping. After weighing up the pros and cons he will decide for or against reading a book.[52] Despite the fact that it is correctly criticised that the adoption of altruism is ad hoc and theoretically hardly founded, in this case, it has to be admitted that the behaviour of both partners can hardly be described without such an assumption.[53]

In this context, JAMES ANDREONI (1988, 1989, 1990) distinguishes between 'pure' and 'impure' altruism. Altruism is 'pure' if the individual takes only the utility (or benefit) of others into account: payments, for example, are made only to improve the situation of somebody else.[54] On the other hand, if altruism is 'impure' the donor gets some personal (psychological) benefit (*warm glow*) just from the act of giving, independently of the receiver's benefit.[55] This distinction is important as soon as we consider the effect of public welfare on private charity. If altruism is pure, contributions from private charity should shrink to the same extent as public welfare expenditure increases; there should be – in the terminology of economists – total crowding out of private by public charity. If altruism is impure, there should be only partial crowding out. Because – as mentioned

[52] See G.S. BECKER (1974, p. 178; 1981, p. 179).

[53] For further examples, see M. PRISCHNING (1983); for a general critique of this approach see Y. BEN PORATH (1982) and M.T. HANNAN (1982).

[54] The formal representation of altruistic behaviour by the maximisation of a utility function subject to restrictions given in G. KIRCHGÄSSNER (2001) indicates that altruistic behaviour can be handled like a positive external effect (of consumption), where the individual makes a voluntary contribution. See also A.K. SEN who, however, speaks in this context of 'sympathy' instead of 'altruism': "In the terminology of modern economic theory, sympathy is a case of 'externality'." (1977, p. 96.) A similar distinction to the one between pure and impure altruism is employed BY DOMINIQUE J.-F. DE QUERVAIN et al. (2004, p. 1257). They speak of 'altruism in the biological sense' if an action is costly and confers utility only to other individuals. This includes pure and impure altruism. Contrary to this, 'altruism in the psychological sense' if the action itself does not produce a psychic (hedonic) reward to the agent. Thus, it corresponds to pure altruism in the sense of J. ANDREONI (1988). – For the different concepts and definitions of altruism see also E.L. KHALIL (2004).

[55] HOWARD MARGOLIS (1982, p. 21) uses in this context the distinction between 'Participation-Altruism' and 'Goods-Altruism'. In the first case the donor obtains a benefit because he is performing a morally good action, while in the second case he benefits because additional goods are provided to other individuals. For empirical evidence, see, for example, J.R. VIDERAS and A.L. OWEN (2006) as well as J. KONOW (2006).

above – we hardly ever observe total crowding out, altruism, where it exists, might nearly always be impure.

Up to this point, only the individual level has been taken into account. However, more relevant are situations where moral behaviour results in voluntary contributions to the provision of a public good in large groups (in the sense of MANCOR OLSON (1965)). As far as the contribution of the single individual at best marginally influences the provided amount of this public good, the (direct) benefit which he draws from *his own contribution* is negligibly small. The standard example of such behaviour, which has been largely discussed in the literature, is electoral participation as discussed above.[56] A high turnout supports the stability of a democratic political system, one of the most important public goods in Western societies.[57]

The number of contributors who are necessary to secure the provision of the public goods varies in different situations. In the case of electoral participation, many contributors are necessary, and their costs are rather low. On the other hand, in the peaceful East German revolution of 1989, when the 'heroes of Leipzig' started the famous 'Monday demonstrations' which were one of the important events towards the final breakdown of the old regime, there was (in the beginning) a small number of people who, however, bore high risks and acted as core of the movement, which was later on joined by (many) others who bore considerably lower risks. Thus, only few contributors were necessary in the beginning. In the extreme case, for example, the killing of a tyrant, only one single individual might be necessary. Such a situation has the basic structure of a volunteer's dilemma game introduced by ANDREAS DIEKMANN (1985) with the small but important difference that the payoff for the co-operating individual is negative: He has to bear the costs of (potentially) losing his life, and in this case might not even benefit from the improved political situation.

Considering these different situations, four different 'ideal types' of altruistic individuals can be distinguished, depending on whether the costs of this behaviour are high or low, and whether the public good is provided or not:

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[56] See, for example, H. MARGOLIS (1982, pp. 82ff.).

[57] In fact, 40 percent might be a 'high' turnout rate. As the examples of Switzerland and the U.S. show, it is not necessary for the stability of a democratic system that regularly more than half of the electorate participates in elections or referenda. On the other hand, in these countries, too, the acceptance of democratic decisions and, thus, the stability of the democratic system, might be endangered if the participation rate fell, for example, significantly below 10 percent.

(i) *The 'average moral human being'*: He acts in situations where many have to contribute to allow for the provision of the public good. He expects that many others contribute voluntarily, and he contributes as well.[58] Thus, the public good is provided. The costs he has to bear are, however, rather small. They are (more than) offset by the moral satisfaction derived from the participation in the provision of this good.

(ii) *The hero*: He acts in situations where it is sufficient for the provision of the public good that only one or at least not many people make contributions, but the costs are rather high for those individuals. As far as he himself is able to consume the public good, the hero derives direct personal benefits from his own behaviour. However, compared to the total cost of his action, his own personal benefit is comparatively low.

(iii) *The idealist*: He knows that many have to contribute, and that (almost) all others do not contribute. Thus, the public good is not provided. He himself, nevertheless, makes a contribution, but his costs are rather small.

(iv) *The fanatic*: He also knows that the public good is not provided and that, therefore, his large personal contribution is in vain. For others, therefore, his contribution does not make sense. Nevertheless, he acts.

In each democratic society, there certainly are – according to this classification – some idealists and some fanatics; they are, however, not necessary for the well functioning of these societies. On the other hand, heroes can – in specific situations – have a very strong impact. Such behaviour can, however, hardly be expected from many people, even if it might be necessary in some situations. The average individuals' propensity for moral behaviour is probably rather low: Minimal moral standards can only be demanded, if a large part or even a vast majority of the population is expected to behave morally. Thus, the essential difference between these two categories is that the hero is acting in a high-cost and the average moral human being in a low-cost situation. [59]

[58] His motivation to contribute may stem from reciprocity considerations, although this does not necessarily have to be so.

[59] There is, however, also at least one example where many citizens of a local community made non-negligible contributions to a public good: The citizens of Kleinblittersdorf, a small German town near the French border, collected more than 3.5 million DM to (successfully) prevent the construction of a waste incin-

That we mainly consider the situation where individuals make voluntary contributions to a *public* good, is justified by the social importance of such behaviour. Because not all public goods which are necessary for the well functioning of a modern democratic society can be financed via coercive contributions by the state, we have to rely on voluntary contributions from many citizens. That such behaviour occurs in some instances should be undisputed, as the example of high participation in many elections shows.

Closely related to moral behaviour is intrinsically motivated behaviour.[60] We speak of intrinsically motivated behaviour if an action is performed for its own sake and not (or at least not predominantly) as a means to an end, i.e. if it is totally (or at least mainly) a consumptive and not an investive action. Because this is usually the case for moral behaviour as well, the latter is in many cases (also) intrinsically motivated. JAMES ANDREONI (1989, 1990) denotes exactly those situations as 'impure' altruism. 'Pure' altruism in not intrinsically motivated but only acts upon the consequences for others; the behaviour has no consumptive component. On the other hand, there is a whole range of intrinsically motivated behaviour in human life which has nothing to do with moral behaviour at all. This situation is given whenever an action has neither (intended) consequences on others nor is instrumental for other objectives of the individual himself but the sole intention of the individual is to receive the consumption benefit. A classical example of this is mountain climbing. Intrinsically motivated and moral behaviour are, therefore, not identical; nevertheless, moral behaviour is often also intrinsically motivated.

The moral behaviour considered here should also not be confused with 'prudent' behaviour. Prudent behaviour is one which might (like moral behaviour) be in the interest of other individuals and sacrifice one's own short-run interests, but can be justified with respect to the long-run interests of the agent.[61] It is, for example, prudent for a businessperson to build up a reputation that he keeps to the rules of the 'respectable merchant' because this will simplify to make deals in the future. It is also prudent to accept that public goods are provided by the government and financed by co-

erator, whose operation would have constituted a local public bad. The average contribution per person was about 800 DM. Though this is an exceptional case which can hardly be generalised, it shows that – in clear contrast to standard economic theory – sometimes even contributions are made which are not to be counted as very small. For a description and analysis of this example, see L.P. FELD, W.W. POMMEREHNE and A. HART (1996).

[60] For a discussion of intrinsically motivated behaviour and its implications for economic processes, see, for example, B.S. FREY (1992a, 1993, 1997).

[61] See for this distinction also R.H. FRANK (1988, p. 39).

ercive taxation. The acceptance of 'voluntary' redistribution is also a kind of prudent behaviour, if, for example, this redistribution can be understood as insurance.[62] Generally, such behaviour does not demand voluntary contributions to the provision of a public good; all that is needed is that people accept that coercive contributions are raised and that they pay these contributions in order not to be sanctioned.

Whether moral behaviour can also be interpreted as reciprocal behaviour depends on the definition of *reciprocity* applied.[63] In a narrow sense (and as used in *Section 2.4* above), this means that a (costly) action is performed with the expectation that the partner will perform a corresponding action in return. Thus, the total action has an expected positive net-utility for both (all) actors. Insofar, reciprocal behaviour is prudent in the sense defined above and cannot demand a special moral quality. In a more general sense, however, which is often used today, reciprocal behaviour is behaviour which follows a reciprocity norm, whether it results in a net utility gain for the actor or not.[64] A reciprocity norm is an instruction to act, which, in the interest of the common good,[65] imposes on all individuals mutual duties which have to be observed even if this is – in certain situations – costly for the people acting. Thus, reciprocity norms are insofar consequentialist as the reason for imposing these norms is that it is advantageous for all members of a society if everybody observes them. Typical examples are requests for voluntary contributions to the provision of a public good.

As defined above, moral behaviour is reciprocal behaviour in this second sense, as long as the norms which are followed are reciprocity norms. In particular, the action of the average moral human being is reciprocal, presumably also the action of heroes. On the other hand, it is open whether the behaviour of idealists and fanatics can also be considered as being reciprocal. Of course, they might also follow reciprocity norms. However, if they know that they are lonesome, i.e. that they cannot expect any reward from others, they might have quite different motivations, and their behaviour can no longer be considered as reciprocal.

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[62] According to H.-W. SINN (1997), the majority of the publicly provided services belongs to this category of voluntary redistribution.

[63] On the role of reciprocity in experimental economics and its function in economic processes see E. FEHR and S. GÄCHTER (1998, 2000, 2002).

[64] See the basic paper on norms of reciprocity by A.W. GOULDNER (1960), but also J. CARPENTER and P.H. MATTHEWS (2004) and A. FALK and U. FISCHBACHER (2006).

[65] For the role of the common good in the economic approach, see G. KIRCHGÄSSNER (2002).

The experiments of the dictator game show that there is behaviour guided by reciprocity norms even in situations when the individuals cannot expect any return.[66] Many players are willing to transfer a considerable part of the money they receive to an anonymous second player, despite the fact that they cannot expect any return. Because it is extremely unlikely that they will play the same game at any time again, reputation cannot play any role either. Following the definition given above, such behaviour is reciprocal in the wide, but not in the narrow sense.

Moreover, as has been shown in experiments, too, there is also reciprocal behaviour which does not benefit but – at least prima facie – harm those who are directly affected by it. Thus, it cannot easily be understood as altruistic behaviour. This holds whenever the second player rejects the offer of the first one in the second round of the ultimatum game because he considers the proposed distribution of money among the two players as being unfair.[67] In this situation, the first player is punished because he has violated a social norm and/or he did not meet the expectations of the other player. Such behaviour, however, imposes costs on the second player, without providing any direct benefit. He might, however, rationalise his action as a voluntary contribution to a public good. Similarly as with Tit-for-Tat, in this situation it holds that agents are more likely to be cooperative if they have to anticipate such a reaction. In situations where a public good should be provided, incentives to behave in this way increase the common welfare. Punishment in the ultimatum game can, therefore, be understood as a voluntary contribution to motivate others to cooperate. In this sense, it is moral behaviour. ERNST FEHR and SIMON GÄCHTER (2002) call this "altruistic punishment", and they show that the willingness to co-

[66] The dictator game was – in a specific version – first carried out by DANIEL KAHNEMANN, JACK L. KNETSCH and RICHARD H. THALER (1986). In the first round, one of the two players gets a certain amount of money. He can decide how to split it between the two. In the second round, the money is given to the two players according to this proposal. The second player has no possibility to object. – In a field experiment, the existence of reciprocal behaviour (in the wide sense) without any expectation of a return is shown by B.S. FREY and S. MEIER (2004).

[67] The ultimatum game goes back to WERNER GÜTH, ROLF SCHMIFTBERGER and BERND SCHWARZE (1986). As in the dictator game, in the first round one of two players gets a certain amount of money. He can decide how to split it between the two. In the second round, however, the second player can decide whether to accept this offer or not. If he does not accept it, none of the two gets anything. On the ultimatum game, see also R.H. THALER (1992, pp. 21ff.), W. GÜTH (1995), I. BOHNET and B.S. FREY (1995), J. GALE, K.G. BINMORE and L. SAMUELSON (1995) as well as E. DEKEL, J.C. ELY and O. YILANKAYA (2007).

operate is much greater if such punishment is possible than if it is excluded.

5.3 Conditions for Moral Behaviour of Many People

Which conditions, however, have to hold that average moral human beings behave according to moral rules and that such behaviour has social consequences? In the following, five such conditions are discussed. Of course, this list is incomplete, and these conditions are necessary rather than sufficient. And even if all five conditions hold, it is possible that individuals do not behave morally (but opportunistically). On the other hand, even if only one of these conditions does not hold, moral behaviour will not occur and/or not have any effect, unless the acting individuals are heroes, idealists or fanatics.

If we start from the modern version of the economic model discussed in this book, the utility function of homo oeconomicus is principally open: altruism has its place in it in the same way as self-interest.[68] The question is, however, which motivation is dominant and effective. As mentioned above, the costs of moral behaviour are not to be too high. Thus, we come to our first condition:

Condition 1: The individuals have to be in a 'low-cost' situation.

The motivation to make an – even very small – contribution to the provision of a public good might usually be given only if the individuals can expect that the public good is produced. Thus, we come to the second condition:

Condition 2: The public good for which voluntary contributions are to be made has to be produced, even if a large part of those individuals who are affected (and have a personal benefit if it is produced) do not contribute.

Even in low-cost situations, this is not necessarily the case. Two different situations have to be distinguished:

[68] This does not hold only for the modern version. ADAM SMITH already pointed not only to self-interest (1759, p. 304; 1776) but also to sympathy, of which he believes that even "the greatest ruffian, the most hardened violator of the laws of society, is not altogether without it." (1759, p. 1). For the position of ADAM SMITH, see also R.H. COASE (1976).

(i) The public good is provided, even if a considerable share of the individuals does not contribute. This is, for example, the case with electoral participation. As the examples of Switzerland and the United States show, even if only half (or even less) of the electorate participates, the legitimacy of the result and, therefore, of the political system is not endangered.

(ii) The public good is not provided, even if only a small part of the individuals makes no contribution. This is the case, for example, with respect to the public good 'traffic safety' on German motorways. If in Germany (almost) all car drivers observed the recommended speed limit of 130 kilometres per hour, traffic safety would be much higher on motorways. Actually, most car drivers observe this limit (for different reasons). Only few drivers, however, who (distinctly) exceed it are sufficient to lead to the well known hectic and, therefore, to reduce traffic safety to a considerable extent. Without (government) intervention, this public good cannot be provided. In the extreme case, one single individual who does not contribute may already be sufficient to prevent the provision of a public good.

Reasonably, moral behaviour can be expected only in the first situation. Of course, there are car drivers who voluntarily observe a maximum limit of 130 or even of 100 kilometres per hour. However, the number of these idealists is so small that it is hardly relevant.

Generally, it has to be assumed that individuals will only act in a moral way if other individuals do not have undue profits from it. The motivation to make voluntary contributions to the provision of a public good will, for example, hardly be given if others have an advantage but the public good is not produced. Thus, we come to a third condition which is closely connected to the two previous ones:

Condition 3: Moral behaviour cannot be exploited by other individuals.

Moral behaviour can most of all be exploited by opportunistic behaviour of others, if, for example, a contract which was implicitly concluded, is broken. In the model of the 2x2 prisoner's dilemma, this means that one of the two players defects despite an agreement to co-operate. Incentives to behave in such a way are especially given if the individuals are not in a low-, but in a high-cost situation. Such exploitation might happen due to deliberate actions of other individuals but also as a consequence of (anonymous) market forces. An entrepreneur who, for example, because of moral considerations pays higher wages or invests more in environmental facilities than his competitors, will (in a competitive economy) have to offer his products on the market at significantly higher prices. Only few consumers

are, however, prepared to pay a higher price for the same product only because the supplier behaves in an especially moral way. There are some niches, of course, which can be filled by a limited number of such suppliers. Most of those entrepreneurs are, however, thrown out of the market by competition. If moral behaviour can be exploited, it is to be expected that there will be individuals who will try to do so. In nearly all cases, for two reasons such attempts lead to breaking off moral activities. First, only few individuals are willing to bear large costs of their own moral behaviour (there are only few heroes), second and more important, at the latest, the budget restriction will enforce this breaking off.

On the other hand, moral behaviour cannot always be exploited. The perhaps most prominent example to show this is again electoral participation as discussed above. Moreover, it is not limited to low-cost situations. And even on a market, moral behaviour cannot always be exploited. The (few) consumers mentioned above who are willing to pay a higher price for goods which are produced under certain social and/or ecological conditions are hardly exploitable. Independently of the question of the exploitability of such behaviour in such situations, it also holds that there will be less moral behaviour, the higher – ceteris paribus – its costs are.

So far the conditions were related to the external situation in which moral behaviour takes place, and they mainly took into account the amount of the individual contributions and whether the public good is finally produced. But even if all these conditions hold, the motivation for moral behaviour can still be missing. This is the case, for example, if individuals – even despite contrary statements – in a concrete situation do not assess the moral demands which are brought forward against them as being (morally) justified. Thus, we come to the fourth condition:

Condition 4: The individuals have to assess the moral demands to which they are to be obliged as (also in the long run) being morally justified.

This first of all implies that they assess these demands themselves as in principle being morally sound. As explained above, (at least some) citizens vote for redistribution measures, which they assess as being ‘just’, even though this reduces their personal income. Secondly, however, they have to accept that they themselves are the addressees of these demands; they have to consider compliance with such rules as their personal duty. As soon as this is not (or no longer) the case, they will hardly be willing to make a voluntary contribution (any longer). In the area of environmental policy it could, for example, be observed that the participation of voluntary actions (for example, of the cleaning of shores of rivers and lakes) decreased considerably in time. While there was a (comparatively) high will-

ingness to participate when the problem was first noticed, this willingness decreased when such actions were repeated again and again and it became obvious that this would become a permanent problem. Thus, the perception the individuals had of this problem changed. What at first had been accepted as being a moral duty of the single individual became later on a task of the state, which has to be performed by the government, respectively its agencies.[69] Quite generally it can be maintained that individuals are willing to provide help (behave morally) for catastrophes especially if these have been unexpected. If they were, however, expected to happen and if the responsible agencies had not undertaken the necessary preventive measures because of laxity, the willingness to help was often much smaller.[70]

Individuals might also delude the demand following morals rules if the intrinsic motivation which is necessary to follow them is not given or has been crowded out by extrinsic incentives. It may happen, for example, that actions which up to now have been performed for their own sake, in the future will only be performed if there is a financial incentive, once such an incentive has been provided in one single case. This 'motivation crowding-out effect' is well known in psychological literature,[71] but was only more recently taken into account by economists.[72] Thus, we come to our last condition:

Condition 5: If intrinsic motivation is necessary that individuals behave morally, it must not be crowded out by extrinsic incentives.

Such crowding out cannot only be caused by financial incentives; intrinsic motivation can also be destroyed by regulations. In literature, two cases are discussed. The first case concerns the instruments of environmental policy. It has been asked whether the use of economic instruments, i.e. of instruments which assign a price to the use of the natural environment, reduce voluntary contributions of the individuals to preserve it. If this happens, the use of such instruments, which is often demanded by economists, might even deteriorate the situation of the natural environment.[73] The

[69] See for this W.J. BAUMOL and W.E. OATES (1979, pp. 282ff.).

[70] That individuals behave differently in this way has social benefits because it prevents too strong incentives for moral hazard which in this situation would mean that the willingness to help is exploited.

[71] See, for example, E.L. DECI (1971, 1975) as well as the contributions in M.R. LEPPER and D. GREENE (1978).

[72] See especially B.S. FREY (1997, 1997a) but also E. FEHR and S. GÄCHTER (2002a) as well as E. FEHR and B. ROCKENBACH (2003)

[73] See, for example, ST. KELMAN (1981) as well as H. WECK-HANNEMANN and B.S. FREY (1995).

probability that this will happen is, however, rather small. The reason for this is that those (economic) decisions which have the most relevant environmental consequences are not low-cost decisions. Whether the emissions of a plant are to be reduced or not has in most cases considerable financial consequences. Thus, moral behaviour cannot be expected in such situations. Moreover, it would be exploitable and, therefore, not stable in the long run. Moral behaviour has in the area of environmental policy more importance for the private household, for example, by separating materials to ease their recycling. As experiences in the Federal Republic of Germany show, even there monetary incentives as, for example, to save costs of garbage disposal, seem to play a more important role than moral considerations. Moreover, such behaviour has virtually no impact on the solution of those environmental problems which are today the most pressing ones and which are of a global nature. Insofar, a crowding out of intrinsic motivation by the use of economic instruments of environmental policy is theoretically possible but hardly of any social relevance.

This is quite different with respect to the second case, working moral. An employer can govern the production process by strict control. On the other hand, he can trust his employees and give them (some) leeway. In many situations absolute control is impossible. This renders opportunistic behaviour possible.[74] Then, the employer can only trust his employees and hope that they feel responsible for their given tasks and perform them correctly. In most situations, it is neither possible to do it without trust but nor without control. There exists strong empirical evidence that too much and/or too strict control, which is (in most cases correctly) interpreted by the employees as a lack of trust, crowds out intrinsic working motivation and – in this way – reduces productivity.[75] How far this is the case depends on the kind of activity. Standardised activities are usually easy to control, and the intrinsic motivation to perform them might be rather small. The more independent an activity is, however, and the more it demands creativity, the more detrimental too much control can be. However, that it is not without problems to totally dismiss controls and financial incentives even for such activities, shows the example of German university professors. They are very independent and their activity demands a high degree of creativity. Despite some recent improvements they are, however, at least in the economic profession, largely underrepresented on the international research scene. The reason might be that the intrinsic motivation is not

[74] Here we have again a situation with incomplete contracts.

[75] See, for example, R. CONGLETON (1991), B.S. FREY (1993, 1994, 1997, 2000), CH. DE NEUBOURG and M. VENDRIK (1994) as well as the survey in D.M. HAUSMAN and M.S. MCPHERSON (1993, p. 683f.).

strong enough and extrinsic incentives did until recently hardly exist (and are still rather weak).[76]

The importance of these conditions for moral behaviour can be clarified using the entrepreneur as an example. Under which conditions or in which situations can we expect that entrepreneurs act morally? This is a central question for all business ethics. As explained above, if we want to expect that many individuals behave morally, than we have to concentrate on low-cost decisions. Because most of the relevant entrepreneurial decisions do not belong to this category and because moral behaviour could be exploited in these situations, moral considerations can at best play an inferior role. Against this argument it is often interjected that environmental measures or social measures which benefit the employees might be in the long-run interest of a firm. Therefore, there might be no conflict between behaviour which exhibits social and/or environmental responsibility and the interest of the respective company. This statement might be true in many cases, but then this is not morally (or intrinsically) motivated behaviour but behaviour which is in the (long-run) interest of the entrepreneur: it is prudent behaviour. This does not impair that it is also desired for moral reasons, but it cannot be taken as evidence for moral behaviour (in the strict sense as defined above).

5.4 On the Social Necessity of Moral Behaviour of 'Average Human Beings'

Even if it is not the intention to question the existence of neither moral behaviour nor the problems which result from it for the application of the economic model of behaviour, it might nevertheless be asked whether such behaviour has any social relevance.[77] It could be possible that we discuss behaviour which exists but has no social relevance at all. At least since ADAM SMITH (1776), the justification of a market order or an exchange

[76] Moreover, especially for business professors, extrinsic incentives go in another direction, namely to consulting. This makes it possible to earn considerable additional income which is impossible with publications in international journals. – The importance of extrinsic incentives should also not be underestimated in the arts, an area where most people believe that intrinsic motivations pay a very prominent role. For example, famous artists have tried very hard to get as much financial reward as possible for their work. For examples, see B.S. FREY and W.W. POMMEREHNE (1989, pp. 137ff.).

[77] On the social relevance of non-self-interested behaviour, see also E. FEHR and U. FISCHBACHER (2002).

economy has been mainly provided by the argument that such an order will lead to a socially optimal (or at least generally acceptable) situation if all individuals pursue their self-interest.[78] On the other hand, there might hardly exist major doubts on the ability and willingness of human beings to pursue their self-interest. Already the moral philosopher ADAM SMITH writes: "We are not ready to suspect any person of being defective in self-ishness." (1759, p. 304.) If self-interest is sufficient to achieve a socially acceptable result, moral behaviour is socially dispensable.

If one takes into account that moral behaviour is primarily a problem of low-cost situations, one might try to avoid such situations as far as possible. It is not necessarily the case that people behave morally in such situations. As already JAMES M. BUCHANAN (1954) mentioned, because of the lack of personal consequences, they might behave irresponsibly.[79] On the other hand, as discussed above, in (modern) democratic societies such situations cannot be avoided totally:

(i) Electoral participation might be increased by providing incentives. There might be, for example, as in Australia, a fine for un-excused absenteeism. However, the decision of a (secret) election cannot be influenced in such a way. If the voters made their decisions irresponsibly (purely randomly), any result might occur. This could undermine the legitimacy of the democratic political order. Thus, for the provision of the public good 'democratic political order', moral behaviour of the decision makers (voters) is necessary.

(ii) The rules according to which decisions are taken in a democratic society can generally be fixed before they have to be applied. However, in conflicting cases 'referees' are necessary who 'correctly' interpret these rules. They can be expected to do so only if they have no personal interest in the solution of the conflict. Correspondingly, every attempt to influence the decision of a judge in a certain direction by providing strong (financial) incentives is – in modern societies under the rule of the law – seen as 'corruption' and threatened with severe punishment: the judges are required to make their decisions solely according to the law (or its dominating interpretation, respectively). Because the law, however, often provides a considerable leeway for judicial decisions, moral behaviour of the judges is necessary for the provision of the public good 'legal security'.

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[78] An earlier literary version of this argument is to be found in the "*Fable of the Bees*" of the philosopher BERNARD DE MANDEVILLE (1714). For the history of this idea, see A.O. HIRSCHMAN (1977, pp. 16ff.).

[79] See for this also G. BRENNAN and J.M. BUCHANAN (1984).

Moral behaviour is, however, in a modern society already necessary at a much more basic level. MICHAEL BAURMANN shows that "at least to keep its own legal order … every society depends on a sufficient amount of voluntary conformity to norms and, therefore, actual moral of its members." (1996, p. 2).[80] And AMARTYA K. SEN (1977) has shown many examples in his paper about the "rational fool", that purely self-interested behaviour of individuals would lead to severe problems in a market society. The general problem behind his examples is contract loyalty. The basic elements of market economic orders are contracts which are made voluntarily by both (all) parties, and where all parties have to keep their obligations. However, as mentioned above, contracts are necessarily incomplete, because not all possibilities can be anticipated and be taken into consideration. This makes opportunistic behaviour possible if the breaking of such a treaty provides benefits for one of the parties.

When contracts are concluded, it is usually tried to exclude situations where opportunistic behaviour is profitable as far as possible. This can be done, for example, by agreements on fines for the breach of a contract. Because of the uncertainty about the future development and the incompleteness resulting from this uncertainty, and because of the costs which arise from the working out of an increasingly detailed contract, it is, however, generally necessary to restrict such fines to situations where opportunistic behaviour would lead to large gains (and where, therefore, opportunistic behaviour is very likely). In such situations, the motivation of self-interest would in most cases dominate. If the breaking of a contract leads, however, only to a small gain (or, if the keeping of the contract causes only low costs, respectively), average moral individuals (according to our definition) will keep to the contract. This does not hold, of course, for strongly opportunistic individuals: they breach every contract, as long as this is (in the long run) advantageous to them. If in making a contract one always had to assume that the other parties were opportunists, many contracts would not be concluded. Thus, a modern market economy could hardly function. The (justified) assumption that the other parties of a treaty behave 'morally' in such situations is a precondition for the well functioning of any market economic order.[81]

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[80] See also his final remark : "A society with a democratic, legal and liberal order cannot survive if all citizens follow only their own self-interest." (1996, p. 658.) – See for this also TOM R. TYLER (1990, 1997) who shows that the adherence to legal rules depends in many cases upon whether the individuals have internalised the respective rules and less on the fear of punishment.

[81] Of course, contracts are also made without moral behaviour, i.e. if all individuals behave purely self-interestedly. However, the amount of these contracts

If there are repeated transactions between the same parties, opportunistic behaviour might be rather unproductive. The individual will the more be able to conclude contracts which are (ex ante) profitable, the higher his reputation, i.e. the more the other parties can depend on contracts being kept. This does not hold if a contract is concluded only once between parties and if they do not have the possibility of getting information about the reputation of the other party.[82] Of course, it can never totally be excluded that such information is spread randomly or that at any later time it is intended to make a contract with the same party. However, only an extremely risk-averse (and purely self-interested) individual would generally be prevented from opportunistic behaviour by such considerations, i.e. from breaking a contract. On the other hand, many individuals keep to contracts in such situations; the story in ARMATYA K. SEN (1977) is intended to show just this. Such moral behaviour makes the trust of the other transaction parties possible and, therefore, the well functioning of a market economic order.[83]

That moral behaviour might be necessary for the well functioning of a modern society seems scandalous to many modern 'enlightened' individuals. Moral behaviour has been preached in the past mostly by religious institutions, in Europe especially by the Christian churches. Even if the constitution of a country explicitly refers to a certain religion, as in Germany and Switzerland to the Christian religion, the norms of such a religion can no longer claim general, mandatory nature in a modern pluralist society. Moreover, many people assess the Christian view of the world as outdated and being no longer relevant for modern human beings.[84] The many attempts, however, which have been made since the period of the Enlightenment, to scientifically create an (objective) moral and to give it a foundation which is generally obliging, have to be judged as failures: the problem of the final foundation (of value statements) cannot be solved, if

might hardly be sufficient for the well-functioning of a (modern) market economic order.

[82] Under such conditions, the 'market for lemons' described above may arise.

[83] That trust has a major function in modern market societies has recently again been taken more into account. See, for example, the theoretical papers by W. GÜTH and H. KLIEMT (1994) and G. BRENNAN, W. GÜTH and H. KLIEMT (2003), the sociological book of F. FUKUYAMA (1995), the experimental results of I. BOHNET (1997), the contributions by C. ENGEL (1999) and S. GÄCHTER, B. HERRMANN and C. THÖNI (2004), as well as the empirical results of E. GLAESER et al. (2000). On the difference between trust and reciprocity see J.C. COX (2004).

[84] See, for example, H. ALBERT (1968, pp. 146ff.).

one does not want to be caught in the 'Münchhausen trilemma'.[85] Considering this, the attempt is plausible to prove moral behaviour as being unnecessary. To do so, one only has to show that morality is *always* only hidden self-interest.

In fact, quite a lot of what is disguised as moral behaviour, might be hidden self-interest. As PETER M. BLAU writes: "An apparent 'altruism' pervades social life; people are anxious to benefit one another and to reciprocate for the benefits they receive. But beneath this seeming selflessness, an underlying 'egoism' can be discovered; the tendency to help others is frequently motivated by the expectation that doing so will bring social rewards. Beyond this self-interested concern with profiting from social associations, however, there is again an 'altruistic' element or, at least, one that removes social transactions from simple egoism or psychological hedonism. A basic reward people seek in their associations is social approval, and selfish disregard for others makes it impossible to obtain this important reward." (1964, p. 17.) This does not mean, however, that all apparently moral behaviour is hidden self-interest, as is attempted to be shown in certain contract theories like, for example, by D. GAUTHIER (1986).

How far it is possible to reveal apparently rational behaviour as hidden self-interest depends on the situation in which moral behaviour seems to be advisable. It is – without doubt – often possible. On somebody who does not intend to participate in an election or referendum, social pressure might be exerted. Thus, the participation might be explained using the motivation of self-interest. That a judge makes decisions, which are morally acceptable, might be explained by the interest in his career. And to explain why treaties are kept, one might rely on reputation effects.

As shown above, such an argumentation does, however, not lead very far. Of course, there is social pressure to participate in an election or referendum, but first of all this pressure is hardly sufficient to explain the very high turnout rates, for example, for general elections in Germany. Secondly, such pressure cannot be built up for the electoral decision itself. That judges have a personal interest in their career prospects, is obvious. But many decisions, which are within the given legal leeway, have at best marginal influence on their future career. Moreover, this leeway generally increases, the higher a judge is within the hierarchy. At the same time, however, his future career possibilities naturally decrease. Thus, those judges with the largest decision leeway are exposed to the smallest external incentives. And to argue for the effectiveness of reputation effects, one has to suppose that such effects can play a role as in repetitive situations. If

[85] See also J.L. MACKIE (1977, pp. 97ff.).

it is not possible to refer to the experience of others, reputation can play no role for one-shot transactions.[86]

For many people, such a purely verbal argumentation might not be convincing. This holds especially for the third situation we considered, the possibility of opportunistic behaviour. Such problems can be captured formally by game theoretic models. Therefore, in most contract theoretic approaches that have recently been developed, it is attempted to provide stronger arguments by employing game theory.[87]

In game theory, our problem is usually modelled as an n-person iterative prisoner's dilemma. The question is whether in such a situation moral behaviour might be profitable, i.e. whether there is a (stable) solution where the agents co-operate. In most cases, this question has been investigated (only) for two person games. According to the definition given above, in such a situation co-operative behaviour might not have any special moral or ethical quality, at least as long as it is (in the long-run) personally advantageous to both agents; it is just 'prudent' behaviour. If, however, co-operative behaviour is even in such a situation no dominant strategy, then it is no longer possible to consider moral behaviour generally as hidden self-interest.

The classical solution to this problem for a finite number of iterations is well known. In the last round it is not rational for both agents to co-operate. Thus, we can find a backward-solution for the whole game: If it is not rational to co-operate in the last round, it is also not rational to co-operate in the second last round, etc. Thus, non-co-operative behaviour (defection) is the dominant strategy for the whole game.[88] This would change only if there were an infinite number of iterations or if in each round of the game the probability of another round were sufficiently high.

As mentioned in *Chapter 2*, ROBERT AXELROD (1984) showed in an experiment that even for a finite and known number of iterations, 'Tit for Tat' was a unique dominating strategy compared to a large number of other strategies.[89] This result seems to contradict the formal game theoretic solution: defection does not seem to be the dominant strategy any more. However, DAVID M. KREPS et al. (1982) have shown that this only holds

[86] For a critique of the reputation argument, see also R.H. FRANK (1988, pp. 68ff.).

[87] See besides D. GAUTHIER (1986) and the game theoretic critique of this approach by K. BINMORE (1993), for example, also G. BRENNAN and J.M. BUCHANAN (1985), R. HEGSELMANN (1992) or V. VANBERG and J.M. BUCHANAN (1988).

[88] See for this, for example, E. RASMUSEN (1989, pp. 88f.).

[89] See for this also J. ANDREONI and J.H. MILLER (1993).

under certain conditions with regard to the other players. If there is among the possible partners a sufficient number of individuals who co-operate (or play Tit for Tat), and if the player knows this, Tit for Tat is dominant; otherwise defection is (still) the dominant strategy.

If the share of those co-operative players is not known, it is sufficient that a large enough share of players assume that there are sufficient many other players who co-operate. Then, self-interest will lead them also to co-operation, and Tit for Tat becomes again the dominant strategy. Thus, the players need not have the correct information about the behaviour of the others; it is sufficient when many have expectational errors in the same direction, i.e. that they overestimate the number of altruistic players. On the other hand, it hardly makes sense to let the functioning of a democratic society depend on systematically wrong information of a sufficient number of individuals. Thus, one has to admit that successful co-operation depends on a sufficient number of individuals who co-operate and behave in this sense 'morally'.[90]

To state it from a somewhat different perspective: By co-operation a player can build up a reputation, which he might lose again by defection. Only if he has a (high enough) reputation as a co-operative player can he expect other players to co-operate. Thus, such reputation games require that the players learn to know each other and/or that the players can obtain information about the reputation of the other players from third parties.[91] In one-shot games between anonymous parties, reputation can trivially play no role.

This implies, however, that the reference to possible reputation gains or losses is not sufficient to unmask moral behaviour as *always* being generated by hidden self-interest, even if Tit for Tat was the only solution to the iterative prisoner's dilemma.[92] Moreover, there are two additional problems. First, it has been shown in experiments that individuals play co-operatively also in one-shot games, where defection is the dominant strat-

[90] Actually, JAMES ANDREONI (1995) found in experiments that, when playing public good games, a considerable part of the co-operations can be traced back to moral reasoning. – On the role of moral behaviour for the solution of the iterative prisoner's dilemma see also R. HEGSELMANN (1992).

[91] How far co-operation comes about in such dilemma situations (but also in 'pure' distributional conflicts) depends to a large extent upon how much communication takes place and/or whether the players are able to mutually identify themselves. See for this besides I. BOHNET (1997) also I. BOHNET and B.S. FREY (1994, 1995).

[92] According to the Folk-Theorem, under rather general assumptions, there can be almost any solution for infinitely repeated games. See for this, for example, E. RASMUSEN (1989, p. 92).

egy. Second, we still have the problem of the rational fool pointed to by ARMATYA K. SEN (1977): people act morally even in situations where reputation cannot play any role.

An even more fundamental objection has been raised by PETER KOLLER (1994). Using a simple model of an asymmetric iterative game where each player has three strategies, he shows that individually rational behaviour does not lead to a solution that – according to his view – corresponds to generally accepted moral principles. Even taking into account reputation effects and long-run behaviour, the player in the weaker position is systematically exploited in this model, and the 'social optimum', i.e. the situation with the highest average payment, is systematically missed. Such asymmetric situations are, however, often given in reality. Thus, PETER KOLLER speaks of a basic conflict between individual rationality and morality, and he concludes that every attempt to defend "the basic statement that moral behaviour might be founded in the well-thought self-interest of each person" is "doomed to failure for fundamental considerations." (1994, p. 283.) Even if one does not follow this strong proposition,[93] it remains that the attempt to show that moral behaviour is unnecessary by using the means of game theory, (until now) has not been successful.

The discussion by PETER KOLLER (1994) also shows that the problem of moral behaviour can be only partly discussed using the iterative prisoner's dilemma. The situation might be totally different if the players have more than two strategies, if the positions of these players are asymmetric, and if a large number of players is acting anonymously with each other. Extending the prisoner's dilemma, RUDOLF SCHÜSSLER (1990) has investigated several other social dilemmas. How far in such situations co-operation evolves spontaneously among self-interested players, depends very much on whether or not a player can stop the (bilateral) interaction with a certain other player and look for a new one. If defection can be punished by breaking off, co-operation will be much more likely to evolve than if such a break off is not possible.[94]

Wherever we have the problem of the common provision (and consumption) of (public) goods, a "decentralised and voluntary solution" can be

[93] The problem with this argument is that the (unique) moral solution is set equal to the co-operation optimum, i.e. to the maximum sum of payments, without taking the asymmetry of the starting conditions into account. In such situations, other behaviour might also be seen as moral. On the other hand, rational individuals would, behind the veil of ignorance, choose this solution, at least as long as they follow the utilitarian concept of expected utility maximising as proposed by J.C. HARSANYI (1955).

[94] See for this also U. Mueller (1990).

shown to be theoretically possible, using game-theoretic arguments, but it is "extremely unlikely for practical reasons."[95] Even where a break off or an exclusion of the defective individuals is possible, such goods can be provided only via a central solution. If no exclusion is possible, then even the following holds: "Only the usage of power, violence or threat can lead to a solution among rational egoists."[96] Because, however, as explained above, at least for some public goods which are crucial for the well functioning of a modern democratic society, such means are not available, the provision of these goods depends again on the moral behaviour of (a large part) of the individual citizens.

But even if *within* one generation co-operative behaviour, which leads to contributions to the provision of public goods, could be derived from pure self-interest, it would remain totally open as to how such arrangements could be made *between* generations.[97] Why should self-interested individuals make any sacrifices in favour of future generations? Why should they, for example, not use up non-renewable natural resources? In a simple growth model, EDMUND S. PHELPS (1975) has shown that in the absence of ethics the game-theoretic equilibrium is not unique. To find a solution that is acceptable also for future generations, we again have to rely on moral behaviour. This has consequences, for example, for environmental policy. Environmental problems that concern only the current generation can – in principle – be handled by internalising external effects. Self-interested individuals will agree on the corresponding policy measures (including the necessary sanctions) because they expect a net-benefit. If measures are taken which (solely) favour future generations, like, for example, a reduction of CO_2-emissions, today's generation is suffering a net loss. Without a moral motivation, people living today will not agree to such measures. Actually, measures to reduce CO_2-emissions are much more difficult to put through politically than, for example, measures to clean lakes or rivers.[98]

[95] R. SCHÜSSLER (1990, p. 144).
[96] Ibid., pp. 144f.
[97] See for this also the discussion about the "just savings principle" in J. RAWLS (1971, pp. 319ff.).
[98] For altruism between generations, see also P.-A. JOUVET, PH. MICHEL and J.-P. VIDAL (2000).

5.5 The Role of Heroes in Political and Economic Processes

The next question is whether, besides this moral behaviour of average individuals, we also need heroic behaviour as defined above. If we look at economic literature, the role of heroes is rarely discussed, and where it is discussed, the examples, which are given, hardly fit the criteria stated above. They are mostly prominent politicians and bureaucrats who did nothing else but what they were elected and/or paid for, even if they did this in an excellent way, and they were all personally highly rewarded.[99]

This is different for the examples presented by ROBERT H. FRANK in his "*Passions Within Reason*" (1988).[100] For him, the existence of such behaviour is clear evidence that at least some people do not behave according to the usual assumption of self-interest, even in situations in which such behaviour is very costly and has little or no benefits for the agent him-/herself. However, most of his examples refer to interactions between two (or at most very few) persons, and he does not ask the question whether such behaviour of at least some people is necessary for the well-functioning of the economic (and/or political) process. Moreover, the willingness for such behaviour strongly decreases with the size of the group.[101]

On the other hand, there are examples of people who are recognised as heroes in public opinion and fit our definition. This is mostly the case if people attempt to overthrow a dictatorial regime and to install democracy.[102] One prominent example is VACLAV HAVEL. By becoming the president of the Czech Republic, he benefited certainly from his engagement in the human rights movement of his country during the seventies and eighties, but during this period, when he was imprisoned, he could not have expected to ever receive major personal benefits. Another example are the 'heroes of Leipzig', who, in the peaceful East German revolution

[99] See, for example, the examples given by TH. HAVRILESKY (1991) or A.C. HARBERGER (1993). On the other hand, GORDON TULLOCK (1987) considers also people who might fit our criteria.

[100] See R.H. FRANK (1988, p. 212f., pp. 231ff.).

[101] See for this already J. DARLEY AND B. LATANÉ (1968) as well as I.M. PILIAVIN, J. RODIN and J.A. PILIAVIN.

[102] Such situations are analysed by GORDON TULLOCK (1987). He admits that there are some people who, especially for religious reasons, "are willing to take great risks or sacrifice their lives to benefit other people" (p. 66). He also acknowledges that their incentive to take action against a dictator is infinitesimally small because they are providing a public good (p. 63f.). However, he believes that most coups are performed by people who have strong private interests to overthrow the old regime and to come into power.

bore serious risks by participating in the famous 'Monday demonstrations' which were one of the important events for the final breakdown of the old regime. They did not get, and also could not expect to get, an additional personal benefit from these actions for themselves.[103] A last example are those people who tried to assassinate ADOLF HITLER during the Nazi regime, especially those who organised and carried out the plot on July 20, 1944. Most of them had to pay with their lives. Their destiny also indicates, however, that at least in some cases it might be rather difficult to distinguish a hero from a fanatic, as the criteria are 'quasi objective' ex ante-expectations of the success of an action which are hardly observable and need not be identical with the actual result which is known ex post.[104]

Nevertheless, these latter examples show that heroes *can* have an effect on political processes, especially in transition processes from a dictatorial to a democratic regime.[105] But are there also situations where heroes are necessary (or at least helpful) to improve the functioning of market processes? One field where heroic behaviour can play a role is environmental policy.[106] An example of such a situation was the behaviour of Greenpeace activists in 1995 to prevent the sinking of the Shell oil platform 'Brent Spar' in the Atlantic. The public good to be produced was to prevent additional pollution of the ocean. To reach this objective, former Shell consumers had to be motivated to boycott Shell by, for example, driving to another petrol station for getting gasoline, even if this station was somewhat further away. In doing that, Greenpeace, with the support of the consumers, succeeded in forcing Shell to change its policy. This was costly for

[103] For an empirical investigation of this movement, based on the economic model of behaviour, see K.-D. OPP, P. VOSS and CH. GERN (1993).

[104] On the other hand, despite their failure in assassinating ADOLF HITLER, they provided a public good for the German people by showing to the world that – despite all the Nazi terrorism – there were also Germans who preserved moral standards, and by doing so they raised the self-esteem of the German people after the war.

[105] The same people might be much less efficient as politicians in a democratic system. (An example is LECH WALENSA, who was successful in overthrowing the communist regime in Poland, but was much less successful as president of the new, democratic Poland. Their strong intrinsic motivation might make it more difficult for them to reach compromises, which is one of the key abilities a politician in a democracy must possess.)

[106] For a more general discussion of the role of moral behaviour in environmental policy, see G. KIRCHGÄSSNER (2000).

the consumers, but for most of them these costs were rather low, i.e. they were acting morally in a typical low-cost situation.[107]

However, in order to motivate this kind of moral behaviour of the consumers, they had to be informed about this problem. Such information can only be spread over a large population by using modern mass media. For this, at least in some cases, spectacular actions are necessary. This is the strategy of Greenpeace, not only in this example, but also, for example, in the case of the French atomic tests at the Mururoa atoll. Those who personally participate in such actions sometimes have quite considerable costs; they may be imprisoned for some time or even risk their lives, without having personal benefits aside from the intrinsic satisfaction. They are in many – but, of course, not in all – cases successful, i.e. the public good is provided. Thus, according to the definition given above, they can be considered as heroes.[108] The number of such heroes is, however, quite small. Despite the fact that a large part of the population is supporting not only the objectives but also the actions itself by, for example, financial

[107] See for this ANDREAS DIEKMANN (1996, p. 111) who sees this example as a typical case of a low-cost situation. Contrary to his opinion (see p. 115), however, its structure is not different from the structure of the electoral situation: The behaviour (decision) of the single individual has neither an impact on the individual himself nor on the collective outcome, but the collective decision can have a significant impact at least on some, and possibly on many individuals. – The qualification of this behaviour as 'moral behaviour' does not change due to the fact that Greenpeace used information to motivate the general public of which they knew (at least from some point in time onwards) that it was wrong, and that today it is doubtful what – even from an ecological point of view – the optimal procedure would have been in this situation. (See, for example, R. LUYKEN, Die Protest-Maschine: Wenn eine Greenpeace-Kampagne erst einmal läuft, können Tatsachen sie nicht stoppen, *Die Zeit* No. 37, September 6, 1996, pp. 9 – 14.) All that is relevant in our context is that consumers expected to make voluntary contributions to a public good by helping to prevent an ecological scandal, even if their expectations might have been wrong. For the case of Brent Spar see also M. HUXHAM und D. SUMNER (1999), who, however, do not discuss the information policy of Greenpeace.

[108] This does not imply that those who professionally work in the organisation of Greenpeace (as well as in other similar organisations) are also heroes and necessarily motivated by moral reasons. Without comment on their moral qualification, in a similar way as with other political (and economic) entrepreneurs, their behaviour can be explained by using the assumption of self-interested rational behaviour. Insofar there is no difference between those working in ecologically oriented and those working in other interest groups.

contributions, there are only few people who actively participate.[109] As stated above, there are not many heroes, but in such situations we need the interaction of only a few of them with many average moral human beings in order to provide the public good.

This is, however, not the only situation where heroic behaviour can play a role in environmental policy. There can also be a demand for such behaviour if employees realise that environmental damages that could be avoided are, or at least might be, generated in their company. As long as such damages result from technical defects their reporting does not demand special moral qualifications. This is different, however, if damages result from the deliberate ignoring of legal regulations by the firm's management. Then, the employees come into a difficult situation. If they report the grievance to their management, they risk to come into trouble inside their firm. The situation becomes even worse if the management does not react and employees see themselves forced to report the grievance to government officials in order to put an end to it. If this becomes known, they risk their job. If the firm has to be closed down they are – in addition – made responsible by their colleagues for the loss of their jobs. In such a situation, an extent of heroic behaviour is demanded which can hardly be expected of many individuals. On the other hand, due to the limited information of the public environmental agencies and due to their limited controlling possibilities, these agencies need at least sometimes such information in order to secure that environmental regulations are respected and major ecological damage is prevented.

Such situations might occur more often with respect to environmental than with respect to other problems. They are, however, by no means restricted to this policy area. We have quite similar problems if other regulations are deliberately violated or if, for example, (national or international) competition rules are not respected. In such cases those who report the violations also bear considerable risks and cannot expect to have a personal benefit from their action besides their moral (intrinsic) satisfaction. If the rules, which were violated, are part of the basic structure which a market economy needs in order to function well in the interest of the citizens,

[109] To receive such contributions, the moral reputation of the organisation is important. If it is damaged, voluntary contributions decrease, which can considerably weaken such an organisation. This happened, for example, because Greenpeace had used wrong information in the case of Brent Spar (and in Switzerland in the middle of the nineties also for some other reasons). See, for example, Keine Sterne mehr am grünen Himmel, *Tagesanzeiger*, March 17, 1998, p. 2.

then, those who report such violations and – by their action – help to improve the situation, are contributing to a public good.

The common problem behind these examples is to overcome an informational asymmetry by giving private information to the general public and/or to political agencies. As this can impede strong economic interests, those who make such information public take in many cases considerable risks, even if their behaviour is completely legal. The situations differ according to who is in need of the information in order to take action, whether a government agency can take measures in order to improve the situation or many individuals like, for example, consumers have to react. But despite this, the purpose of the actions is always to provide information (in a secret or a more or less spectacular way).

5.6 On Problems with Not Self-Interested Behaviour

Up to now it has been assumed that 'moral' behaviour is 'good' behaviour and, therefore, ought to be encouraged. This assumption would be without problems if we could all agree which behaviour is 'good' and, therefore, should be encouraged, and which behaviour is 'bad', and, therefore, should be suppressed. In fact, there exists a far reaching political consensus in our society about the appropriate behaviour of citizens, and an effort is made to enforce or suppress such behaviour, respectively. This is one of the main functions of criminal law. Thereby, it should be noticed that in this respect we do not discuss moral and not necessarily intrinsically motivated behaviour either, because criminal law uses (in some situations very strong) extrinsic incentives. In central areas of social behaviour, we apparently rely less on the intrinsic motivation of the individuals but mainly on extrinsic incentives.

However, that a political consensus exists does – in a pluralist society – not necessarily imply that also a 'general value consensus' exists, and in most cases the latter does not exist. After all, the respective laws are not passed unanimously by the parliament and/or the citizens, but at best with a large majority. This, however, reveals an important problem: the relativity of every non-cognitivist ethics or morals. This might be the main reason why attempts are made again and again to develop cognitivist ethics (even if only a minimal one). As mentioned in the introduction, such attempts must necessarily fail: value statement cannot be given the same (scientific) status as factual statements. Thus, whatever we try, we cannot escape the situation that we have to decide ourselves which ethics or morals we are willing to accept for our personal life. We cannot shift this re-

sponsibility to philosophy or the (social) sciences.[110] Philosophy and sciences can provide us with arguments for our decision, showing advantages and disadvantages of allying certain rules, but we have to take the final decision by ourselves, at least as long as we want to see ourselves as autonomous individuals in the sense of the Enlightenment.

A consequence of this relativity of every non-cognitivist ethics is that very different demands are raised in the name of morals or ethics. We can see this by looking at other countries where demands are raised (with a moral claim) which – according to the common values in our society – are just immoral. Capital punishment is or has been demanded, for example, for writers like SALMAN RUSHDIE, who criticise the situation in their country or their religious community. And as the 'Holy Inquisition', the Holocaust of the Jews in the Nazi period, the crimes of JOSEF STALIN and also the genocide in Cambodia in the eighties and the attack of September 11, 2001, show, the most cruel crimes against humanity have often been performed under reference to moral rules or (sometimes even called 'divine') 'laws'.[111] To rely on the moral sense of the individuals is, therefore, under no respect without problems, and it can be risky even in a country that is economically well developed and has a great cultural tradition, as the history of National Socialism shows.

But even if we do not consider criminal activities, it is risky to trust in the moral convictions of the people because there are no strong incentives for people to behave in a certain way in low-cost situations. Thus, any behaviour might come up, and it is hardly possible to influence this politically. It might be empirically true (and there is some evidence for it) that individuals follow moral rules in many such situations, but there are only very few possibilities to ensure this or at least to influence behaviour in this direction.

With respect to the moral qualification of self-interest, it should be reminded once again that this is in principle a neutral assumption. It does not only exclude altruism and compassion, but also envy and malevolence. It is not without reason that JOHN RAWLS uses in his "*Theory of Justice*" also

[110] This follows from the impossibility – which has been well known at the latest since MAX WEBER (1904) – of giving a scientific (definite) foundation of value judgements. See for this, as well as for some more recent attempts to find such a foundation within the consensus theory of truth, G. KIRCHGÄSSNER (1982). These attempts, however, failed.

[111] See for this also A.K. SEN: "Some of the nastiest things in the world happen as a result of 'selfless' pursuit of objectives far removed from one's own well-being but also from the well-being and freedom of others (such as communal rioting or racist violence)." (1994, p. 389.)

this concept of "mutually disinterested rationality" (1971, p. 144). Moreover, non-acceptable results (according to our value conceptions) might come up if the individuals strive for their objectives with their best intentions but – according to our opinion – non-acceptable moral views, and even if these views can be accepted but the 'weights' are set wrongly.[112] Insofar, the transition from moral to self-interested behaviour might even be counted as social progress.[113]

There are many good reasons, therefore, to search for institutional arrangements that avoid low-cost situations as far as possible. However, because we cannot totally dispose of voluntary contributions to the provision of public goods, low-cost situations cannot totally be avoided in important areas of social life. This also implies that the well-functioning of a social and economic order depends on the morality of the citizens. Thus, if we interpret economic theory as a 'theory of the society', we cannot totally dispense with the analysis of moral behaviour.[114]

As explained above, these difficulties arise from the fact that restrictions play no (or at best a very small) role in low-cost decisions. As far as the restrictions lose importance, the preferences of the individuals gain relevance for their behaviour. They might be quite arbitrary, the only property the economic model really demands is their consistency. Preferences can, however, in most cases not be discovered independently of the actions of an individual. All that seems to be possible is to statistically detect regularities in the motivations of the people acting and/or the factors which have an impact on these motivations, and based on these to develop theories.[115] The justification for such a procedure is the assumption (adopted from traditional economic theory) that the preferences are (relatively) stable over time. The theory of crowding out intrinsic by extrinsic motivation discussed above shows that this assumption might be critical if behaviour in low-cost situations is to be analysed. In the absence of binding restric-

[112] See for this also J.L. MACKIE (1977, p. 156).

[113] See for this the distinction between passions and interests in A.O. HIRSCHMAN (1977).

[114] This implies for ethics that it should be designed mainly as 'incentive ethics' in the sense of K. HOMANN and CH. KIRCHNER (1995), i.e. in a way that self-interested behaviour leads to results which are acceptable from a moral point of view. (See also the similar considerations below in *Chapter 7*.) Because low-cost decisions cannot totally be avoided, however, it cannot be designed exclusively in such a way. See for this also A. ANZENBACHER (1995).

[115] This is what happens, for example, in empirical analyses of central bank behaviour, if it is assumed that the policy of the Deutsche Bundesbank or the United States Federal Reserve depends on to which parties the members of the respective boards are affiliated. See, for example, R. VAUBEL (1997).

tions and without such an assumption it might, however, hardly be possible to develop theories with empirical content at all. What then remains is the (plausible) ex post-description of behaviour. Even if parts of other social sciences finally end up with this, economic theorists should not be satisfied with it: they should instead attempt to develop theories with empirical content also for low-cost situations. That this is more difficult than to analyse the standard situations of economic theory should be considered as a challenge rather than as an insurmountable barrier.[116]

[116] There is, however, up to now no evidence available either that other social sciences are more successful in explaining moral behaviour.

6 Limits to and Problems of the Application of the Economic Model of Behaviour

In *Chapters 3* and *4* it has been shown how the economic approach of the social sciences can successfully be applied to economics as well as to other social sciences. *Chapter 5* has shown that problems of applying this approach might occur under certain conditions, especially if costs of 'wrong' decisions are rather low, and it has also been shown how such problems can be handled. But these are not the only problems which might come up if the economic approach is applied to other social sciences. Whenever such an approach is especially successful, the danger exists that its power is overstated and claims are raised which cannot be achieved. With respect to the application of the economic model of behaviour there are (at least) three possible problems:

(i) The explanatory power of this approach is overstated, and the anomalies connected with it, are suppressed. Thus, the reality is forced into a 'Procrustean bed' to make it compatible with the economic approach.

(ii) This approach might degenerate to the "Economics of Dr. Pangloss":[1] the reference to information and transaction costs might lead to the impression that today's world is the best of all possible worlds.

(iii) The producibility of social conditions or social relations might be overestimated: The reference to the restrictions by which behaviour is influenced might lead to the illusion that by a suitable management of the restrictions, (nearly) every type of behaviour can be enforced.

Moreover, in some situations coordination problems arise which cannot easily be solved by applying the economic approach. In the following we will discuss these points.

[1] W.H. BUITER (1980).

G. Kirchgässner, *Homo Oeconomicus*, DOI: 10.1007/978-0-387-72797-4_6,
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6.1 On the Limits to the Economic Approach

As the discussion in the philosophy of science during recent decades has shown, all theories with empirical content "*are equally unprovable*", but it also holds "that under very general conditions all theories have zero probability, whatever the evidence, *all theories are not only equally unprovable but also equally improbable*."[2] In addition, there are empirical observations of qualitative and quantitative nature for each theory which are accepted as valid but are not compatible with it: There is "an 'ocean of anomalies' that surrounds every single theory."[3] This holds not only for theories of natural sciences, but, of course, also for theories of the social sciences and, therefore, also for the economic model of behaviour as a rather general theoretical basis for the social sciences. This does not contradict its application in all areas of the social sciences, but because the economic model is a general, and not an all-encompassing one, the fruitfulness of its application might be quite different in different areas. It is true that it can be 'immunised' against failure by introducing additional ad hoc assumptions into the objective functions of the individuals or the restrictions. Thus, in the end, every type of behaviour can be coerced into the economic calculus, but then the theory loses its empirical content, it becomes 'empty'. To avoid this, one has to accept the fact that there exist (valid) empirical observations of behaviour which are incompatible with the economic approach.

The fact that there exist anomalies of the economic model of behaviour is, therefore, not astonishing, and as long as no better alternative exists, this also does not provide any justification for a general rejection of the model as an explanatory device in economics or other social sciences.[4] On the other hand, such anomalies are a challenge to the respective theory. As we deal with the homo oeconomicus it makes sense to clarify where such

[2] I. LAKATOS (1970, p. 95).

[3] P.K. FEYERABEND (1975, p. 39).

[4] The anomalies of the economic model of behaviour considered here are to be distinguished strongly from anomalies or paradoxa of the economic or social development, as listed, for example, by HAZEL HENDERSON (1985, pp. 43ff., pp. 54ff). The contradictory developments in economic and political relationships described there have no necessary connection to the anomalies of the economic theory or to the economic model of behaviour. On the contrary, the application of this model often makes it possible to explain how such anomalies or paradoxa come up, for example, by pointing to prisoner's dilemma situations which are behind them.

anomalies of the economic model of behaviour come up and how, if at all possible, to deal with them.[5]

Anomalies appear in very different situations. They exist on the individual as well as on the aggregate level, in experimental as well as in real situations, and the more detailed the model is (i.e., the wider its empirical content), the more frequently they occur. A large part of the anomalies discovered relates to the formal model of maximising expected subjective utility.[6] Excluding the early work of some predecessors, especially DANIEL BERNOULLI,[7] the formal model of expected utility maximisation dates back to JOHN V. NEUMANN and OSKAR MORGERSTERN (1944), who developed a model of behaviour under risk which is based on five axioms. In this model, decisions under risk are seen as lotteries, where each alternative has a certain probability. JACOB MARSCHAK (1950) reformulated these axioms and suggested viewing them all together as a definition of *rational* behaviour under risk.[8] This model is the basis of large and important parts of the modern theory of capital markets, especially of its standard model, the 'capital-asset-pricing-model' (CAPM).[9]

As the model of expected utility maximisation has a clear formal structure, it is easy to test. Especially in experiments, a whole series of anomalies could be detected.[10] The behaviour shown in these experiments had partly been known before, and it was already assumed that this behaviour was in contradiction to the (narrow version) of the economic model of behaviour. At the same conference in Paris in May 1952, when LEONARD J. SAVAGE defended the 'Independence axiom' (which later got its name from him), MAURICE ALLAIS demonstrated a behavioural paradox (which was later called "Allais-Paradox") which violates the model of expected utility maximisation. Thus, this model seems to be only partly compatible with the actual behaviour of (rational) individuals.[11] With the help of a

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[5] See for this also R.H. THALER (1992), the series of papers about anomalies in the *Journal of Economic Perspectives* Vol. 1ff. (1987ff.), as well as J. ELSTER (1978, 1979, 1979a).

[6] See especially P.J.H. SCHOEMAKER (1980, 1982), M.J. MACHINA (1987), C.F. CAMERER (1995) as well as CH. STARMER (2000).

[7] DANIEL BERNOULLI, physicist and mathematician, was born in the year 1700 in Groningen and was later professor in St. Petersburg and Basle, where he died in 1782.

[8] LEONARD J. SAVAGE (1954) made a further important contribution.

[9] See for this, for example, E.F. FAMA and M.H. MILLER (1972, p. 189ff.), or M.J. BRENNAN (1987).

[10] See, for example, P.J.H. SCHOEMAKER (1982, pp. 541ff.).

[11] The Independence-Axiom is not explicitly contained in the five axioms formulated by JOHN V. NEUMANN and OSKAR MORGENSTERN (1944), but EDMONT

simple experiment, MAURICE ALLAIS was able to show that even LEONARD J. SAVAGE violated 'his' own Independence axiom. The reason was that he, like most other individuals participating in this experiment, gave more weight in his decision to certain outcomes than to probabilistic events with the same expected utility.[12] DANIEL KAHNEMAN and AMOS TVERSKY call this the 'Certainty Effect' (1979, p. 265). This effect contradicts the model of (subjective) expected utility maximisation. LEONARD J. SAVAGE changed his 'preferences' when he was shown that his answers violated the Independence axiom, and revised his answers so as to become compatible with this axiom.[13] However, on the one hand, this kind of learning is not typical if participants in experiments are shown such inconsistencies in their answers,[14] and, secondly but more importantly, it is irrelevant for the positive usage of such a behavioural model: a theory which tries to explain actual behaviour has to be able to do so even if it has not been explained to the individuals how they ought to behave according to this theory.[15]

The behaviour discovered by MAURICE ALLAIS is not the only one which contradicts Savage's Independence axiom. DANIEL ELLSBERG (1961) has shown a similar paradox with respect to the estimation of subjective probabilities. Moreover, individuals are not generally risk-averse or risk-loving (or risk-neutral). MILTON FRIEDMAN and LEONARD J. SAVAGE already in 1948 pointed to the fact that the same individuals who take insurances against possible accidents (and are, thus, risk-averse) are gam-

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MALINVAUD (1952) has shown that it is implicitly contained, and it is to be found already in JAKOB MARSCHAK (1950). (See for this M.J. MACHINA (1982, p. 278).) For the Allais-Paradox see M. ALLAIS (1953). – At this conference on "Decision under Uncertainty", among others, BRUNO DE FINETTI, MILTON FRIEDMAN, JACOB MARSCHAK and PAUL A. SAMUELSON participated. (For the discussion on this conference, see also P.C. FISHBURN (1987).)

[12] It should be noted that the same expected utility does not imply that the expected amount of money in the lottery is equal to the certain outcome; if the individuals are risk-averse, for example, and the (expected) utility is to be the same in both situations, the expected amount of money in the lottery has to be larger than the certain amount.

[13] See for this M.J. MACHINA (1982, p. 289) as well as L.J. SAVAGE (1954, pp. 102f.).

[14] See for this M.J. MACHINA (1987, p. 129).

[15] MARK J. MACHINA puts in this context the following (rhetorical) question: "Would an insurance company base its estimate of the pedestrian fatality rate on the widely held belief that the individual, *if reminded*, would always choose to look both ways before crossing a street?" (1982, p. 289).

blers (and, therefore, risk-loving).[16] And, finally, there is a whole series of experiments where 'preference reversal' has been demonstrated: According to the exact question, the individuals once prefer lottery A to lottery B, but with a somewhat different formulation lottery B to lottery A.[17] All these results contradict the Independence axiom which is, therefore, at least for a large class of cases, empirically rejected. This caused MARK J. MACHINA (1982) to develop a theory of expected utility maximisation which does not need this axiom and which is, therefore, compatible with many of these observations.

Against the validity of these experiments might be objected that the experimental decision situations are – compared to everyday situations – 'difficult' and for the average person not easy to understand. For this reason, it might not be astonishing that individuals in these situations do not behave according to the – rather restrictive – theory of expected utility maximisation. The results of these experiments might, therefore, not be a sufficient indicator that the theory of rational behaviour, as developed in *Chapter 2*, is empirically invalid. This objection can, however, no longer be maintained if the results of other experiments are considered, where it was demonstrated that individuals – in specific situations – seem incapable of drawing very simple conclusions. P.C. WASON (1966) was the first to show that a majority of people do not use and/or are not able to use 'modus tollens'. (From: if p, then q, it follows that: if not q, then not p.)[18] DANIEL KAHNEMAN and AMOS TVERSKY (1982) show that individuals in decision situations which have again a very simple structure, do not take into account that the probability for the simultaneous occurrence of several events cannot be larger than the probability of the occurrence of each one of these

[16] Even before the model of expected utility maximisation had been formulated, FRANK H. KNIGHT pointed to the "known fact" (1921, p. 235) of such behaviour with reference to corresponding remarks by ADAM SMITH (1776, p.125).

[17] This was first shown by SARAH LICHTENSTEIN and PAUL SLOVIC (1971); see also W.W. POMMEREHNE, F. SCHNEIDER and P. ZWEIFEL (1982), G. LOOMES, CH. STARMER and R. SUGDEN (1991), F. GUALA (2000), A. OLIVER (2006), as well as the surveys given by S. SLOVIC and S. LICHTENSTEIN (1983), A. TVERSKY, and R.H. THALER (1990), A. TVERSKY, P. SLOVIC and D. KAHNEMAN (1990) and A. TVERSKY and R.H. THALER (1990). That preferences might exhibit "consistent and predictable intransitivities" had already been shown by A. TVERSKY (1969, p. 31). However, PETER BOHM (1994) questioned the extent of preference reversal as soon as the payments were of a 'realistic' size.

[18] See also P.C. WASON (1969), P.N.A. JOHNSON-LAIRD and P.C. WASON (1977), J.S.B.T. EVANS (1982, S. 157ff.) as well as the contributions in J.S.B.T. EVANS (1983).

events ($P(A \cap B) \leq \text{Min}(P(A), P(B))$).[19] Both authors also show that individuals do not, or at least insufficiently, use their knowledge of how often a specific event occurs, if, based on available evidence, they have to decide whether this event has actually occurred or not (1973). However, how is it possible to speak of rational individual behaviour if these individuals are not able to draw such very elementary logical conclusions? And why does the economic model of behaviour, nevertheless, work quite well in many situations, as shown in *Chapters 3* and *4*?

First it has to be taken into account that these effects do not occur in all but in very specific situations only (with a very specific structure). Why, however, are the individuals in some situations able to draw such conclusions, and in others not? A possible answer is provided by HOWARD MARGOLIS (1987), who has analysed quite carefully these effects with his theory of 'Pattern-Cognition'.[20] If people have to make a decision, they do so in relation to a 'pattern' which represents the structure of the decision situation. Important for a 'correct' decision is, therefore, the choice of the 'correct' pattern. This choice is usually made intuitively. In principle, the individuals are quite able to draw basic logical conclusions and – in this sense – to behave rationally. Whether they really do so in an actual situation, depends on the selected pattern. In everyday situations they have sufficient experience of selecting the matching pattern. Consequently, the model of rational behaviour can nearly always be applied to such situations. The question whether he selected the (correct) matching pattern or whether he judged the structure of the situation correctly is for the individual only relevant if he recognises that he might have made a wrong decision.[21] It is possible to design experimental situations in such a way that test persons consistently choose the 'wrong' pattern and the anomalies described above occur. It is, however, also possible to design these experiments so that individuals choose the matching pattern and, therefore, the anomalies disappear. As HOWARD MARGOLIS has shown, this can be done without any change in the logical structure of the questions.

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[19] See for this also the experimental evidence given by D.J. ZIZZO et al. (2000).

[20] He calls it 'P-cognition' with 'P' for 'Pattern'. See also the experimental results by T.F. RÖTHELI (1988).

[21] These patterns have a similar function like the rules discussed *in Section* 2.2 which the individual gives himself. These rules have also only to be changed if the situation has changed in such a way that they are no longer sensibly applicable and/or that their application no longer leads to acceptable results. See for this also G. GIGERENZER (1994, 1997) as well as G. GIGERENZER and D.G. GOLDSTEIN (1996), who show that the individuals follow a concept of bounded rationality and apply in decision situations procedures which are "fast and frugal" and in most cases prove to be quite useful.

That individuals choose the matching pattern in most cases in their everyday life does not imply that the anomalies do not play any role there. There are also cases where the wrong patterns are used in such situations. How large this share is, however, remains open. Additionally, it has to be seen that the effects HOWARD MARGOLIS discusses are special cases of a more general phenomenon, namely of 'framing'.[22] How decisions are taken depends on their 'frame', and one must distinguish between the language frame and the real context.[23] The individuals select the pattern which corresponds to a (given) frame. Therefore, a verbal reformulation of the question can, despite its logical equivalence, lead to a different answer. This became most obvious in an example reported by AMOS TVERSKY and DANIEL KAHNEMAN (1981): Medical students were asked whether, in case of an epidemic, a specific therapy should be applied or not. The answers depended on whether the expected results of this therapy were described using probabilities of survival or using the complementary probabilities of death. If such effects occur where the individuals in the experiment are highly qualified with respect to the problem at hand, it is to be expected that it might also happen with ordinary people in everyday life.[24]

This does not cause problems for the application of the economic model as long as individuals consistently use the same frames (and, therefore, also the same patterns) for the same (classes of) problems. It becomes interesting if the frame changes, but the objective situation remains constant. Then it might happen that the evaluation of costs and benefits of the different alternatives also change. This can result in changed behaviour, despite the fact that the preferences (in the strict sense) and the objective restrictions remain constant. How often this plays a role in real life is open. So far, we have evidence only from laboratory situations. Moreover, it is to be expected that the individuals also learn with respect to these problems. On the other hand, it cannot be overlooked that economic and political advertising at least tries to form the language frame for certain issues in a 'positive' manner, as many examples show. For example, the 'ministries of war' after the Second World War were re-named 'ministries of defence', without – in many cases – any change in their tasks. Because humankind has had terrible experiences with atomic power, in German the term 'nuclear power station' is officially used instead of 'atomic power station', so

[22] See also A. TVERSKY and D. KAHNEMAN (1981, 1987).

[23] See for this H. MARGOLIS (1987, pp. 141ff.).

[24] This holds even if more recent research shows that the effects might be less dramatic than the original results published by AMOS TVERSKY and DANIEL KAHNEMANN (1981) suggest. JOHANNES KOPP (1995) and VOLCKER STOCKÉ (1998, 2002) were unable to reproduce this result to the same extent.

as to increase their acceptance in the population. How far such attempts to influence individuals are successful in the long-run may remain open.[25]

The list of anomalies of the economic model of behaviour, and especially of the model of expected utility maximisation, is not exhausted by far. If, according to the economic model, advantages and disadvantages of different alternatives are evaluated, benefits and costs which arose in the past should have no influence: only the expected future net benefits should count. However, in the actual behaviour of individuals 'sunk-costs', i.e. costs which have been borne in the past, play a role. Somebody, who once invested in a certain project, tends to invest further, even if the initial investment was a failure, and it would 'objectively' make more sense to terminate this project: 'good money' is thrown after 'bad money'. Such behaviour can often be observed in reality[26] and has also been shown in experimental situations. It clearly contradicts the economic model: a rational individual should realise that the initially invested money is lost; and these sunk-costs should have no impact on the actual decisions where the only question is of how the now available (new) money can be invested most profitably.[27]

A very similar problem is the 'endowment-effect'. Individuals value goods which they possess – ceteris paribus – higher than if they did not own them. The minimum price to be paid if on sale (the price of the 'willingness to sell') is in many cases considerably higher than the maximum

[25] Governments and/or parties do at least sometimes expect some success from such strategies if they, for example, try to 'sell' their policy better instead of considering a change of policy.

[26] An often-quoted example of this are nuclear plants whose construction or operation is frequently continued even if it is obvious that there is no longer any economic justification. A typical example was the construction of the fast breeder in Kalkar in Germany, which was nearly completed even though it became obvious that it would never go into operation. Finally, it had to be deconstructed. For an investigation of the U.S. atomic power programme with respect to sunk-costs, see W.F.M. DE BONDT and A.K. MAKHIJA (1988).

[27] This holds only, however, if the investor is a strict profit maximiser. If his objective is to finish all projects without any losses, it might be sensible to invest further money in projects which have not yet been successful, to make those also profitable, even if total profits (of all projects together) are reduced. Such behaviour contradicts the traditional assumption of profit maximisation, but is compatible with the concept of bounded rationality as proposed by HERBERT A. SIMON (1955). – Further examples for sunk-costs are given by RICHARD THALER (1980). P.J.H. SCHOEMAKER (1982) pointed to the fact that in sciences, sunk-costs exist with respect to the methods employed. Somebody, who has invested much in a certain methodology, might try to apply this methodology also to cases where other methodologies are superior.

price the owners were willing to pay for them (the price of the 'willingness to pay'). This holds even if income effects as well as strategic considerations are taken into account, or if they play no role, respectively.[28] This effect is incompatible with the traditional theory of consumer behaviour. This theory states that for every consumer and every good a certain price exists where he is indifferent between possessing this good (and having paid the price) or not possessing it and keeping the money. This is at the same time the maximum price to buy and the minimum price to sell this good. A clear gap between these two prices contradicts neo-classical theory. According to RICHARD THALER (1980), the reason for this gap is that individuals systematically underestimate the opportunity costs they have to bear owning this good in comparison with the monetary costs if buying this good.[29] Thus, as with respect to sunk-costs, in this case again, events in the past, and not exclusively the expected future net-benefits, influence the subjective evaluations of the relative advantages and disadvantages of the different alternatives by the individuals. Additionally, sunk-costs and endowment effects have not been detected only in experiments, but their existence has also been proved in real life situations. Sunk-costs play, as mentioned above, an important role for investment decisions, while the endowment effect creates problems, especially if people have to be compensated for giving up something.[30]

Similar to sunk-costs and the endowment effect is the status quo bias which goes back to WILLIAM F. SAMUELSON and RICHARD ZECKHAUSER (1988). It is one of several known decision avoidance phenomena[31] and can be observed in many areas, as, for example, in economics, finance, politics, or medicine, and is made responsible for misguided developments in these areas. SENDHIL MULLAINATHAN (2004), for example, attributes to it that new technologies in developing countries diffuse only slowly. SCOTT K. ABEREGG, EDWARD F. HAPONIK and PETER B. TERRY (2005) show that even trained physicians are subject to this bias which can easily

[28] See the experiments described in R. THALER (1980, 1992, pp 63ff.).

[29] Opportunity costs arise because money is tied up by the ownership of this good. If this good were sold, the money could be used for some other purposes for which it would have been used if this good had not been bought. If one distracts from the transactions costs of selling and buying, then the opportunity costs connected with the ownership of a good should be equal to the monetary costs which are paid when it is bought.

[30] The endowment effect also plays an important role in the international art trade. See, for example, B.S. FREY and W.W. POMMEREHNE (1989, pp. 124ff.).

[31] It is often also called 'omission bias' and is one of four different decision avoidance phenomena described by CH.J. ANDERSON (2003). For an overview, see D. KAHNEMANN, J.-L. KNETSCH and R.H. THALER (1991).

lead to sub-optimal results for the patients. ALEXANDER KEMPF and STEFAN RUENZI (2006) show that fund-managers exhibit such behaviour, and the bias is the larger the more alternatives are available.[32] Last but not least, the status quo bias is seen as being responsible for resistance to reforms, even if these would be efficient from an economic point of view, when there would be more winners than losers. RAQUEL FERNANDEZ and DANI RODRIK (1991) demonstrate this with respect to trade reforms, and show that such behaviour may occur even if neither risk aversion, nor irrationality, nor hysteresis due to sunk-costs play a role.[33] Such reforms might be rejected ex ante by the population even if they were supported by a clear majority once they are in effect. Finally, G. KIRCHGÄSSNER (2007) shows that the Swiss political system of direct democracy contains such a bias: It is easier to mobilise for No-votes than for Yes-votes in a referendum.

There are rather different ways to react to such anomalies.[34] They might be denied or simply excluded from consideration. One might also question the validity of experimental results for 'real' situations. It is, however, also possible to develop alternative theories which can explain all what the present theory (the model of expected utility maximisation) is able to explain and at least some of the anomalies of the present theory, without, however, sacrificing empirical content.[35] Such attempts were made, for example, by DANIEL KAHNEMAN and AMOS TVERSKY (1979) by developing Prospect Theory, or by GRAHAM LOOMES and ROBERT SUGDEN (1982, 1987) by developing Regret Theory.[36]

An additional and especially for the economic model of behaviour relevant way of dealing with such anomalies is to accept them on the micro level, but to deny their relevance for the macro level. In principle, this strategy is not only admissible, but also necessary for the development of a macro theory. It is explicitly stated that not *all* individuals behave according to this model, but that it represents the behaviour of the *typical* (average) individual. This implies the concession that in certain situations many and perhaps even (almost) all individuals behave differently. As long as this is balanced by aggregation, the claim of the economic model to explain aggregate behaviour is not affected. This argument becomes even

[32] That even irrelevant alternatives might favour the status quo is shown in R. SPIEGLER (2000).

[33] See also A. CICCONE (2004).

[34] See B.S. FREY and R.E. EICHENBERGER (1989, 1991) for different possible reactions to such anomalies.

[35] This is (admittedly, rather simplified) the way scientific progress happens. See for this K.R. POPPER (1963) as well as TH.S. KUHN (1962, 1970).

[36] See also M.J. MACHINA (1982) or G. LOOMES (1988).

stronger, if there exist social institutions which achieve that behaviour, which is conform to this model, is rewarded while deviating behaviour is 'punished'. Moreover, there is considerable evidence that at least some of the micro level anomalies are eliminated at the macro level.[37]

If transaction costs can be neglected, then the market is such an institution. This holds especially for auction markets, like the stock or the foreign exchange market. Participants who make systematic errors in predicting future share prices will in the long-run realise considerable losses and, therefore, drop out of the market. This provides possibilities for those with correct expectations to make profits which will be realised. It is to be expected, therefore, that anomalies on the individual level will in 'efficient markets' not come up on the aggregate level. The precondition is that transaction costs on these markets are so low that they can be neglected.[38]

If on such a market only those participants can survive who have 'rational expectations'[39], then this has implications for price movements. As long as they contain a systematic component they can be exploited for (successful) speculation. If, however, the value of a certain share or bond is expected to increase in the near future, (some) agents will buy it. This results in a price increase not in the near future but already today. Thus, its value will increase until no one assumes a further price increase. Finally, there is no turnover whatsoever or there is an equal number of buyers and sellers at the current price; there will be no further price change. This mechanism eliminates the possibility of systematic profits, and tomorrow's price is, apart from purely random movements, today's price. Thus, prices follow a 'random walk', i.e. price changes are purely random and the best forecast of tomorrow's price is today's price.[40] Systematic price movements cannot be identified. To state it differently: the current price contains all information which is available at the moment. Those wanting to speculate successfully (against the market) must have information which is not (yet) contained in the current price.[41]

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[37] See, for example, J.A. LIST (2003, 2004), but also E. FEHR and J.-R. TYRAN (2005).

[38] See for this the arguments of ARMEN A. ALCHIAN (1950) which are discussed below in *Section* 8.3.

[39] The concept of 'rational expectations' employed here is the same as the one which has been discussed above in *Section 3.2*, where we dealt with macroeconomic theory.

[40] This argument had already been presented by HOLBROOK WORKING (1953) long before the theory of rational expectations was developed.

[41] Such additional information can, for example, be the so-called 'insider information', i.e. information which employees (managers) of a company have and which is, however, not yet available to the general public. It might, for exam-

The random walk hypothesis to explain the short-run development on stock and foreign exchange markets has been tested very often and has found empirical support in most cases.[42] In the meantime there is, however, also a series of papers which shows that there are systematic movements on stock markets: 'weekend effects', 'end of month effects' and 'end of the year effects'.[43] These movements are statistically significant, but only weakly pronounced. Therefore, it is impossible to exploit them for speculation; transaction costs which are rather low on these markets are still too high to make it profitable to buy and sell shares for a short time for this purpose. Therefore, the efficient market hypothesis is not rejected by the occurrence of such effects. On the other hand, we can ask why people who buy or sell shares do not try to make use of these effects to get additional profits; this should lead to their disappearance. Thus, there are unexploited profits on these markets, and the anomalies which are related to them are in this case at the aggregate and not at the individual level. This shows that the market, even if it comes as close as possible to its ideal conditions, is not able to eliminate all anomalies even at the aggregate level. On the other hand, G. WILLIAM SCHWERT (2003) showed that some of the financial market anomalies became weaker or even vanished once they had been detected and the corresponding papers published. In some cases this happened because practitioners started to implement these anomalies in their investment strategy. Thus, people learn, which leads to the disappearance of not all but at least some (or even a large part) of the decision anomalies of the economic model.

Time effects are by far not the only anomalies which can be observed on financial markets.[44] Because stock prices are apparently much more volatile than the fundamental economic variables, there has been for a considerable time now an ongoing intensive discussion on whether movements on financial markets are really caused only by changes of expected prof-

ple, relate to a planned take-over by another company. Huge profits can be made by exploiting such information. This implies, however, a systematic expropriation of the 'outsiders' by the 'insiders' which in the end can lead to a breakdown of capital markets. Correspondingly, insider trading is prohibited by law in most countries with developed capital markets and partly, as, for example, in the United States, severely punished.

[42] See, for example, W. ENGELS (1980, p. 68) for stock and W. GAAB (1983, pp. 99ff.) for foreign exchange markets.

[43] See for this W.F.M. DE BONDT and R.H. THALER (1987) as well as R.H. THALER (1987, 1987a, 1992, pp. 139ff.). As MANFRED GÄRTNER and KLAUS WELLERSHOFF (1995) have shown, in the United States election dates also have a significant (and predictable) impact on the development of the stock market.

[44] See also the corresponding chapters in R. THALER (1992).

its.[45] Moreover, many more transactions seem to take place on financial markets than could be justified by changed profit expectations. "Why are prices so volatile? Why do people trade so much?" According to LILLYN L. TEH and WERNER F.M. DE BONDT (1997, p. 295), these are the most important puzzles which the theory of financial markets has to solve. The market participants seem to react to 'noise', i.e. on pseudo-information. This might produce a wedge between the actual price of a share and its – relating to the fundamental conditions – 'true' value, and this can lead to 'bubbles'. In such situations 'herding behaviour' of shareholders might occur: the single shareholder takes into account the behaviour of others, and many shareholders go in the same direction.[46] Obviously, the market forces are unable to prevent systematic differences between the prices of financial activa and their 'true' values.[47]

In addition, markets are not only unable to eliminate all anomalies, they might even generate additional anomalies. This holds, as 'the winner's curse' shows, even for auction markets which are generally assumed to work especially efficiently.[48] If a good is auctioned whose value is not exactly known, the bidders have to try to estimate its value as exactly as possible to make 'correct' bids. If expectations are rational, we can assume that these bids are unbiased, i.e. the estimates of the bidders are on average correct. If it is additionally assumed that the bidders are risk-averse, the average bid will be below the value of the auctioned good. That bidders have rational expectations implies, however, that only the average bid is correct and not every single one. There will be bidders who underestimate and others who overestimate the value of the good. If the one with the highest bid wins, there is some reason to assume that the actual price will be above the true value: the winner of the auction makes a loss; at least he will be disappointed once he realises the true value.

The winner's curse was first investigated by E.C. CAPEN, V. CLAPP and W.M. CAMPBELL (1971). They started from the observation that compa-

[45] See for this the classical contributions by S. LEROY and R. PORTER (1981) and R. SHILLER (1981).

[46] See for this A. DEVENOW and I. WELCH (1996), LILLYN L. TEH and WERNER F.M. DE BONDT (1997), J.M. COTE and D.L. SANDERS (1997), CH. AVERY and P. ZEMSKY (1998), or M.S. HAIGH, N.E. BOYD and B. BUYUKSAHIN (2007). An overview of the different approaches and models to explain excess volatility on financial markets is given by CH. JOCHUM (1999, pp. 102ff.).

[47] On the anomalies which come up on financial markets and the possibilities of explaining them by using psychological theories, see also K.J. ARROW (1982).

[48] See for this R. THALER (1988; 1992, pp. 50ff.) as well as K.A. FROOT and R.H. THALER (1990). – For the possibility that the winner's curse also occurs on labour markets, see T.J. PERRI (1995).

nies which had bought oil extraction rights for the Gulf of Mexico in an auction, afterwards had to realise that the return on this investment was significantly lower than expected: if they had invested the same money in bonds, they would have received a higher return. This shows that their bids for acquiring these extraction rights had been too high. Something similar was reported by RICHARD ROLL (1986) about take-overs: it is often the case that some time after a take-over it becomes clear that this investment has not been very profitable or that the offer made to the previous owners (shareholders) was too high. Moreover, this effect could also be demonstrated in experiments. MAX H. BAZERMAN and WILLIAM F. SAMUELSON (1983), who first performed such experiments, could demonstrate both effects when they auctioned glasses full of coins: The average bid was generally below their value, but the bid which won was significantly above it.

It is obvious that bidders, or at least some of them, who participate in an auction make mistakes. They do not realise that, without additional information, the expectation of the value of the good which is to be auctioned is higher than under the assumption that they will win the auction. In the latter case, they have to take into account that all other bidders, who principally have the same information, have a lower estimate of this value. If this is taken into account, i.e. if the individuals are strongly (in this sense) rational, then the winner's curse cannot occur. This was shown by JAMES C COX and R.M. ISAAC (1984). But at least in experiments, individuals apparently do not behave in this way. The evidence from field research is more difficult to interpret. In fact, at first glance, it does not even seem to be compatible with the economic model of behaviour. Individuals can, however, learn even in such situations. Moreover, bidders whose bids are significantly too high will make losses and drop out of the market: only the more 'cautious' remain. Correspondingly, the studies mentioned above have shown that bidders were only disappointed because profits were lower than expected, they did not make real losses. DOUGLAS DYER, JOHN KAGEL and DAN LEVIN (1989) pointed to the fact that individuals participating often in such auctions develop rules of thumb to counteract the winner's curse. Thus, in the long-run, they might become somewhat disappointed with respect to their expectations, but they do not incur losses. All together, the winner's curse seems to have less impact on actual economic behaviour than first to be expected and as the results of the experiments suggest.[49]

[49] It is interesting to note that the same business people who were able to successfully apply these rules of thumb to 'real' auctions were unable to do so in experiments. Thus, in this case, results of experiments are not easily transferable to real decision situations.

Anomalies do, however, not only occur when private agents make (market) decisions; public decision makers make 'mistakes' as well. A prominent example is the 'Flypaper-Effect': If uncommitted transfers are given from a higher to a lower governmental level, these transfers are mainly used for (specific) public expenditure and not considered just as additional income.[50]

If, for example, a local community receives some (uncommitted) transfer from the state or the federal government, this is just an increase in their disposable income. If we assume that up to now this local community has decided rationally on how to use the financial means, a (small) part of this additional money might be used for additional public projects whereas the larger part should be used to reduce taxes: The final distribution of the total available financial means should be independent of whether the additional money was private money or resulted from transfers from superordinated governmental levels; the local community has in both cases the same total available income and the same spending alternatives. It has been observed, however, that a considerable part of additional transfers is spent on public expenditure. Thus, the use of additional money seems to depend on where it comes from.[51]

All anomalies discussed so far are related to the rationality assumption: They provide evidence that individuals in certain situations do not behave 'rationally' in the sense of the economic model of behaviour or the more specific model of expected utility maximisation, respectively. As shown in the previous chapter by means of the 'paradox of not voting', rather different anomalies can occur if the motivation of the individuals is reduced to self-interest, i.e. if other possible motivations like altruism or envy are excluded. Deviations from the assumption of self-interest do, however, not necessarily imply that the individuals behave altruistically (in the sense defined above); it is sufficient that they respect fairness-rules. That such rules have important behavioural implications has not only been shown in ex-

[50] See for this J.R. HINES and R.H. THALER (1995), the empirical studies about transfers to local communities and school districts mentioned there, as well as G.K. TURNBULL (1998). The flypaper effect is just one version of fiscal illusion, which means that the perceptions of the real benefits and costs of governmental activity are systematically biased. An overview of the different empirical studies of fiscal illusion is given by B.E. DOLLERY and A.C. WORTHINGTON (1996).

[51] In the end, fiscal illusion is a kind of collective endowment effect. Similarly, as with respect to the individual endowment effect, not the real opportunity costs are considered, but the status quo plays a role, which in this case implies that the money received from another public institution should be used for public purposes.

periments discussed in *Section 5.2*, using dictator and ultimatum games, but they also have considerable consequences for behaviour on labour markets. Employers typically pay new employees who are prepared to accept a lower wage not the lower wage acceptable to the employee but the higher official wage. The reason might be that the employers suspect the employee of not working correctly otherwise, and thus hope to increase his working morale with a higher wage. This behaviour of employers can lead to too high, not market clearing wages and, therefore, to involuntary unemployment.[52]

Not self-interested behaviour is, however, not the only reason why anomalies of the economic model of behaviour occur which are related to the assumptions about the preferences. Another reason becomes visible from the observation of 'self-restraints'.[53] For example, individuals often wish to have a particular project finished by a set date in the future. Right now, there is still plenty of time to complete the project, but the individual knows that later on, when the work will have to be done, there will be problems of time shortage and other difficulties which make it likely that this project will not be finished on time. The individual, therefore, adopts a self-restraint which increases the pressure to finish this work on time. As this date nears, the individual actually faces great difficulties in finishing his work. Without the pressure, which is brought about by the individual himself, he would not succeed, or at least not on time. An example which can often be observed are scientists, who want to perform some specific research in the near future. They have, however, many other obligations which distract them from this work. To find the time to do it, they apply for the presentation of a paper at a conference or sign a contract with a publisher. As the deadline nears, the pressure increases to complete this project. This pressure, which they have deliberately brought on themselves, forces them to keep to the project and to put other, also important, obligations aside.

This is just one example of the general problem of the 'weakness of will' which is also relevant to other situations. It often holds that "the spirit indeed *is* willing, but the flesh *is* weak."[54]; the most obvious case being addicts who fight against their addiction. A smoker who has often tried to give up smoking, but has failed to do so, may combine a new attempt with a bet to increase the incentive to hold out this time. A drug addict might admit himself to a hospital, because he knows that he will have no chance

[52] See for this E. FEHR, S. GÄCHTER and G. KIRCHSTEIGER (1997) E. FEHR and A. FALK (1999) as well as M. DUFWENBERG and G. KIRCHSTEIGER (2000).
[53] See especially J. ELSTER (1979, pp. 36ff).
[54] ST. MATTHEW 26, 41, similar also ST. MARK 14, 38.

to get drugs there, even when the pains of the withdrawal symptoms become extremely strong and he would very much like to obtain drugs and would also be prepared to pay quite a lot of money for them. But self-restraints are also used in much less dramatic situations, for example to reduce overweight or to save money. In these situations, the individuals deliberately restrict their future action leeway in order to reach certain goals.[55]

It might be as if such self-restraints were not in the interest of those individuals who use them. After all, they restrict their future action leeway. If one follows traditional economic logic, their utility is not affected in the better case, in the worse case it is reduced. This might happen, for example, when someone wants to spend money he saved but is unable to do so because of self-restraint. As a result of this, he might have to take out a loan and pay higher interest than he receives for his savings. Thus, he will suffer a financial loss. Seen from a perspective which is still an individualistic one, but above the perspective of daily behaviour, such restrictions can nevertheless make sense. The individual might, for example, know himself well enough to recognise that without such a restraint, he would have no savings at all, because he would very often become a victim of his temptation to spend money on trivial matters. Consequently, SHLOMO MAITAL (1986) talks in this context of "welfare-improving constraints".[56]

This indicates that individuals have two kinds of preferences, which are ordered.[57] On the lower level are the preferences which are given in daily life and according to which the individual has to decide in concrete situations. The preferences on the upper level describe how the individual would like to see himself act. Both preference orderings can be and normally also will be consistent; the upper one might, however, be expected to have a lower discount rate than the lower one: compared with the lower, the upper preference ordering has a longer time horizon. Contradictions may exist, however, between the two orderings.[58] As long as no concrete actions are necessary, the individual might 'plan' according to his upper preferences, and he can try to influence the restrictions which will come up later in concrete situations, to make sure that the actual behaviour will – as far as possible – be consistent with his upper preference ordering. Corre-

[55] A whole series of examples of self-restraints is given by THOMAS C. SCHELLING (1984). Many of these examples are from everyday life.

[56] On the ethical aspect of such self-imposed restrictions, see D. READ (2006).

[57] See for this also T.C. SCHELLING (1978a, 1980) as well as the contributions in J. ELSTER (1987).

[58] Such contradictions are especially obvious if addicts try to fight against their addiction.

spondingly, RICHARD H. THALER and HAROLD M. SHEFRIN (1981) speak of a "planer" and of a "doer".[59] In the end it is again a problem of how restrictions can be set to produce a desired behaviour. The new perspective is, however, that in this case it is the same person who sets the restrictions and who has to adjust his behaviour according to these restrictions, but this happens at different points of time.[60]

The idea of two different and partly contradictory preference orderings might seem strange at first; at least for the economist this is unfamiliar as he is used to assume unambiguous (and fixed) preferences of individuals. This does not hold for the philosophical tradition. There the idea can be traced back at least to ARISTOTLE and his "*Nicomachean Ethics*", where he speaks of two different parts of the soul, where "the part of the soul that has a rational principle stands to the irrational part", and he sees the relation between these two parts as "between ruler and ruled."[61] And HARRY G. FRANKFURT (1971) argues that the existence of superior preferences and the possibility of using them for judging the subordinated ones is a precondition to see human beings as 'persons' with a free will, because for this it is necessary that they are conscious of their will and can deliberate on it. Exactly this happens when individuals are trying to bind themselves.

Until now nothing has been said as to which of the two preference orderings is the more 'moral' one; such a statement is not necessary for an explanatory theory. But, there are at least some reasons to see the altruistic elements rather on the superior than on the subordinated level. Even if people are purely egoistic in daily decisions, they usually do not like to see themselves in this way and even less that others see them so. One might, therefore, see the superior as the 'moral' or 'ethical' preferences and contrast those with the subordinated ones which express self-interest.[62] This is

[59] HARTMUT KLIEMT speaks in this context of 'dispositional' and 'operative' preferences (1984, pp. 34ff.). His concept of a 'homo normativus' with dispositional preferences whom he wants to put aside the homo oeconomicus with his operative preferences is, however, less convincing than the approach by RICHARD M THALER and HAROLD M. SHEFRIN (1981), which seems not to be noticed by him.

[60] R. H. STROTZ (1955) tries to explain the same problem by *one* preference order which changes in time. The approach of R.H. THALER and H.M. SHEFRIN with *two* stable but conflicting preference orders seems to be more promising.

[61] ARISTOTLE, *Nicomachean Ethics*, 1138b.

[62] This is a similar distinction as the one which plays a role in J.C. HARSANYI (1955) or in the "*Theory of Justice*" by J. RAWLS (1971) and which will be discussed in the next chapter. While there, however, the individuals act behind 'a veil of ignorance' (or at least uncertainty), here they are fully aware of their

the way HOWARD MARGOLIS (1981, 1982, pp. 36ff.) builds up his model. There two people struggle with each other, a self-interested and a socially (altruistically) motivated individual. Depending on who wins in a specific situation, the resulting (observable) behaviour will show more self-interest or more altruism. Over and above that, AMARTYA K. SEN (1977, pp. 216ff.) speaks of a whole hierarchy of preference orderings, and to evaluate these orderings 'meta-preferences' are formed: corresponding to these meta-preferences, preferences are the 'better' the more 'moral' they are, i.e. the more they correspond to the (accepted) moral rules. This approach is a further possibility which allows discussion on the problem of altruism within the framework of the economic model of behaviour.[63]

Thus, anomalies of this approach do not appear on the individual as well as on the aggregate level, but also with respect to both topics discussed above in *Chapter 2*: the motivation of the individuals and the rationality of their behaviour. The anomalies related to the motivational assumption are, however, less serious than those related to rationality. First, with respect to donation experiments, MATTHIAS BENZ and STEPHAN MEIER (2006) show that behaviour in experiments is only weakly correlated with behaviour in the field.[64] Second and more important, many motivations are possible within the framework of the economic model and many conclusions are independent of the concrete motivation of the individuals. Moreover, the transferability of laboratory experiments' results to real situations might be more questionable with respect to the motivational assumption.

The latter is quite different for the rationality assumption. At least a weak form of it is a necessary constituent of the economic model. If rationality is totally dismissed, the whole approach is suspended. Insofar it is understandable that economists often try to deny the existence of such anomalies, or at least their relevance, or to eliminate them by using immunisation strategies.[65]

Such an attitude is, however, not necessary to 'rescue' the economic approach and, therefore, also difficult to understand, apart from the fact that it

situation. They restrict their future action leeway precisely for the reason that they know what will happen and how they will react (under which conditions).

[63] In this framework it is also possible to handle the problem of the 'conscience'. See for this R.H. FRANK (1987).

[64] A reason for this might be that the money subjects spend in experiments is not earned by themselves but given to them by the experimenter. Thus, it has quite a different meaning for them.

[65] See for this the critique by P.J.H. SCHOEMAKER (1982) on the 'postdictive' perspective of this model of rational behaviour, according to which all observable human behaviour is optimal in the sense of this model, if this behaviour is interpreted in a suitable manner.

does not reach its objective: such behaviour transforms the economic model into a tautology and in this way eliminates its empirical content. First, all scientific theories have to struggle with anomalies. They are a challenge for each theory and only with their help is it possible to improve such theories. Second, the examples discussed above show that one can meet these challenges in a constructive manner without violating the general testability of the theory as one of the basic scientific criteria.[66] And finally, it is a rational research strategy to keep to a theoretical concept (paradigm) even after anomalies have been found as long as there is no alternative theory available which is superior to the current approach. Consequently, hardly any of the authors who have in recent decades intensified the discussion about the anomalies of the economic model have questioned the principle usefulness of this approach.[67] Moreover, the structure of some of the problems which are behind these anomalies can only really be understood if we start from this model, i.e. from the distinction between preferences and restrictions and from the rationality assumption. This also holds, as THOMAS C. SCHELLING (1984, p. 8) has pointed out, for the problem of self-restraint.

Nevertheless it remains that the application of the economic model of behaviour is of varying fruitfulness in different areas.[68)] This holds in particular for the version that is usually employed in 'economic' analyses. Other modes of behaviour or other motivations, like altruism as discussed in the previous chapter, also play a role in human life, and their role is also different depending on the specific area. The same might hold for envy and malevolence.[69] Different motivations might play a different role in different areas. They might play a different role within the family than in politics, and there again a different one than in economy. To investigate this is, however, also a task for the sciences. Thus, despite the varying fruitfulness in different areas, none of the areas should principally be excluded from the realm of economic analysis.

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[66] For a discussion of testability (falsifiability) as a criterion of scientific theories which dates back to KARL R. POPPER (1935) and of the difficulties which are connected with this criterion see, for example, IMRE LAKATOS (1970).

[67] See for this, for example, D. COLLARD (1978, pp. 5ff.) or J. ELSTER (1979, p. 65).

[68] It might even be the case that the 'true' problem is not captured by the economic approach. This might hold, for example, for the theory of rational addiction as developed by GARY S. BECKER and KEVIN M. MURPHY (1988), if the addiction to hard drugs like heroin is to be explained as the result of a rational decision (with rational expectations). On the discussion of this approach, see also E. FEHR and P.K. ZYCH (1998).

[69] Envy might be an important enticement in human behaviour; it might be one of the causes of the profit motive.

6.2 Coordination Problems

Another problem regarding individual intentions which is not to be considered as an anomaly but is, nevertheless, a challenge to the economic model of behaviour, is the 'coordination game'.[70] That coordination should be a special problem might be surprising at first glance; quite generally, economics as well as other social sciences mainly deal with coordination problems: how are the actions of individuals in a society coordinated? The policy problem is to set the societal conditions for individual actions in such a way that the results of the social processes are acceptable for as many individuals as possible. A solution, an 'equilibrium', is given whenever in a specific situation no individual has an incentive to change his/her behaviour, given the behaviour of all other individuals. Under perfect competition, the market solution represents such an equilibrium. No participant is able to change the market prices by his own (single) actions, and, therefore, it is optimal for him to adjust his behaviour to the given prices.

This equilibrium concept which had already been employed by JOHN MAYNARD KEYNES (1936),[71] was formalised by JOHN NASH (1950); today it is denoted as the 'non-cooperative Nash-equilibrium'. It is by far the most often applied solution concept in economic analyses. It is (as a solution concept) without problems whenever it is unique, i.e. if there exists only one such equilibrium in a system. As the prisoner's dilemma discussed in *Chapter 2* shows, this does not necessarily imply that there also has to be a satisfying solution from a societal perspective.

Real problems arise, however, whenever there are several equivalent solutions. Even in this situation, a solution is possible if the players can communicate, as the example of the battle of the sexes has shown. Satisfying solutions should, however, also be reached if no cooperation is possible. If there are many individuals involved as in the market system, and if the single individual is unable to influence the outcome, the initial conditions determine the final outcome, i.e. which one of the different equilibria is reached. It might, however, be possible to influence the initial conditions and, therefore, also the final outcome by politics. The problem is more interesting, however, if there are only few participants in the game, in the ex-

[70] See, for example, D. GAUTHIER (1975).

[71] See for this J. TOBIN (1997, p. 17). JOHN MAYNARD KEYNES employed this concept in order to show that economic equilibria are possible with less than full employment, i.e. that despite unemployment, no economic agent has an incentive to change his behaviour, which implies that the market process does – without intervention – not necessarily lead to full employment.

treme case two participants only, and if there is no communication possible between them. Then, there exists no solution which (at least observed from outside) is unambiguously to be preferred by all players.[72]

Let us consider two cars which cross each other on a lonely, narrow road in the United Kingdom (for example, in the Lake District). If, as is the rule there, both are driving on the left, nothing happens; they pass each other and there is no danger of an accident. But let us assume that one of these two cars is from Germany, and that the British driver knows this. He does not know, however, whether he can rely on the German driver to keep to the British rules and drive on the left; this driver might follow his usual reflexes and go to the right. If this is the case, the British driver should also drive on the right in order to prevent an accident. The German driver intends to follow the British rules. If, however, he starts considering that the British driver might think that he will drive on the wrong, the right side, he should also go to the right. The same holds, if the British driver thinks that the German driver thinks that the British driver assumes the German driver will drive on the right, and so on. They come into an infinite regress; without additional assumptions, there is no (pure) solution to this game.[73] Thus, despite both wanting to prevent it, the possibility of an accident cannot be totally excluded.

		Individual 1
	Strategy A_1	Strategy B_1
Strategy A_2	(10/10)	(-2/-2)
Individual 2		
Strategy B_2	(-2/-2)	(10/10)

Payoff to: (Player 1/ Player 2)

Figure 6.1: Payoff matrix of the pure coordination game

[72] On the theory of coordination games see, for example, D.P. MYATT, H.S. SHIN and C. WALLACE (2002) as well as other contributions in issue 4 of *Oxford Review of Economic Policy* 18 (2002).

[73] The game theoretic solutions to such problems are 'mixed strategies', i.e. solutions where the different pure strategies are followed with some probabilities. (See, for example, E. RASMUSEN (1989, pp. 69ff).) However, in reality, we nearly always have to follow a pure strategy. Thus, (mathematical) game theory is of little help with respect to a practical solution to these problems.

Formally, the (pure) coordination game can again be represented by a Payoff matrix. In the example of *Figure 6.1*, both players get 10 units if both choose the same strategy while both lose 2 units if they follow different strategies. There is no reason why one of the two equilibria should be chosen; they are fully equivalent. Therefore, neither of the two players has any reason to prefer one of the two equilibria to the other. A solution, i.e. an agreement to choose one of the two equilibria, is only possible by coordination.

If communication is possible, there can be explicit coordination. However, if communication is impossible, as is often the case, only implicit coordination is possible. In our example, both drivers might assume that the other is following the British rule of driving on the left of the road and do not undertake any further considerations. Thus, they are not fully rational in the way game theory assumes, but behave boundedly rationally in the sense of HERBERT A. SIMON (1955). As in this case, the problem can often be solved by common knowledge; in our example, by knowledge of the driving regulations in the United Kingdom. The problem becomes difficult, however, whenever such common knowledge is not available, at least as long as it is not obvious. Coordination might nevertheless be possible if the players follow social conventions and/or agree to 'focal points', i.e. to solutions which stand out for some reason which is, however, not related to the original problem.[74] In our example of the two car drivers, the focal point might be the legal rule of driving on the left in the United Kingdom, and the two drivers might hope that each of them is thinking in the same way. However, despite much research, the question of how to reach such focal points is still open, at least if we are not willing to accept the simple answer that these points stand *in some way* out of all other solutions, and the reason why this is the case might be discovered ex post.[75]

Attempts have been undertaken to solve the problem of coordination games by introducing 'we-intentions' (or 'group-intentions') instead of the usually employed individual intentions.[76] In our example, both car drivers have the common interest of passing each other without an accident. This common interest leads to expectations of the behaviour of the other one, but this does not imply that any intentions play a role in this process which transcend the individual ones. Hardly anybody would, for example, assume that these two drivers are a team with a collective goal. Common interests which demand a coordination of the actions of the individuals in-

[74] See for this especially the classical contributions by T.C. SCHELLING (1960).
[75] See for this, for example, K. BINMORE and L. SAMUELSON (2006) or R. SUGDEN and I.E. ZAMARRON (2006).
[76] See for this, for example, H.B. SCHMID (2001).

volved, and this is the essence of the coordination game, provide no reason to deviate from the concept of individual intentions. Moreover, the concept of we-intentionality does not help to find a solution to the coordination game as it does not explain which of the two equilibria is chosen.

The situation is more interesting whenever there are real teams acting collectively, for example, when 'we as a team' want to win a soccer game or 'we as a family' want to spend holidays together. There, we really intend to do something together which we cannot do as single individuals, and so not only individual actions have to be coordinated. These common interests might be represented in the objective of the team or its utility function, and these 'team preferences' are not simply aggregated individual preferences.[77] This does not imply, however, that they cannot simply be derived from individual preferences once the restrictions for the common actions of the team are taken into account.

The fact, however, that I intend to do something jointly with another person, provides no reason to go beyond the concept of individual intentionality as well. They are redundant as long as we-intentions do not imply more than intending to do something together; in this case they can be derived directly from the individual intentions. A justification for the introduction of we-intentions might at best be given if there is a conflict between the intentions of the individuals to perform some activity jointly and their individual interests. In the case of family holiday it does, for example, not only matter that all family members want to be on holiday, but that they intend to do this together. And because they know that their individual ideas of optimal holiday differ, they also know that, if they really want to be on holiday together, they cannot fully realise their own ideas but have to respect those of the other family members as well. Finally, the individual preferences or intentions, respectively, again matter, because if not each of them had the intention to be together on holiday, there would be no problem at all. As the objective function of the team resulting in such a situation can differ from all individual objective functions, one might speak of team preferences (or we-intentions), but one should be very careful in doing so because there is no real agent, no acting subject to whom these preferences or intentions can be assigned. As J. SEARLE (1990, p. 404ff) has correctly mentioned, intentions are always in the heads of single individuals (and, therefore, necessarily always individual) even if several individuals have common intentions and these intentions are related to common actions.

[77] See for this, for example, R. SUGDEN (2000) or S.R. CHANT and Z. ERNST (2007).

Thus, taking the behaviour of teams into account provides no reason to deviate from the concept of methodological individualism. Carefully reconsidered, the discussion of we-intentions is about whether intentions of the different individuals which are directed towards a common objective are really common intentions (and the individuals are aware of this communality) or whether they have common (and perhaps even identical) intentions only by chance, or, because they are forced from outside into a certain direction. The latter situation is given, for example, when I support a political party to help win an election, knowing that my single vote is not decisive, but that many voters have to make the same decision in order to reach this goal. I have a personal interest in that as many others as possible make the same voting decision as I do, but we would never speak of these voters as a team. The example of the two car drivers goes in the same direction. On the other hand, the members of a soccer team direct their intention towards a common goal of the group; at least, it is expected that they behave in this way. But it holds here as well: The team might win the game, but the single team members act, and only their acting together makes it possible to reach the objective. The team as such has no intentions independently of the intentions of its members.

Finally, however they might be defined, team preferences or we-intentions do not solve the coordination problem mentioned above. Even if all individuals involved have team preferences in the sense of R. SUGDEN (2000), it is still open how the individuals come without communication to the agreement to reach one of the multiple equilibria. The basic problem is of how common knowledge is created. As soon as such common knowledge is available, the problem can be solved. Thus, the main problem here is one of information and not of intentions. As mentioned, the proposed solutions to the former problem are, however, still not satisfying.

6.3 The Economics of Dr. Pangloss, or: We Live in the Best of All Possible Worlds

If one takes into account that (voluntary) exchange occurs only if the individuals expect not to be worse off after it than before, and if one additionally assumes rational behaviour (in the sense described above) of the individuals, then exchange between individuals in a society will finally lead to a situation where no individual can improve his situation unless the situation of at least one other individual deteriorates. This is to say that an optimal situation in the sense of the Pareto criterion described above will be reached. Insofar voluntary exchange is productive, and the market is the

institution which makes this possible. Moreover, if the original distribution of endowment is accepted, all factors of production will be used in a way to lead to the highest return. Thus, the value of production is maximised, as valued by the preferences of the individuals reflected in their market behaviour. This production optimum is likely to be seen as equivalent to a welfare maximum. HANS ALBERT pointed to this already in 1953 as "the fallacy of the doctrine of the production maximum". In such a situation there is just *one* Pareto optimum realised, but which one of the (theoretically infinite many) optima is realised depends on the original distribution of endowment. A necessary condition in order to speak of a welfare optimum would be that this original distribution is in itself 'optimal' or 'just', whatever the measurement scale for this might be. But not even then it is sure that a Pareto optimum is reached. A Pareto optimum requires that some additional assumptions hold: that there exist no external effects, that there are no public goods in this economy, and also that all agents are fully informed about all their alternatives and all possible consequences.

Nevertheless, the model of the general equilibrium in a competitive market economy and the Pareto efficiency which is – given certain assumptions – realised in this model is often taken to regard the market as the social co-ordination mechanism which is the best one under nearly all circumstances. If there arise any social problems, the solution is consequently seen in 'more market' (or the root of the problem is seen in 'not enough market'). Objections which are raised because of 'market failure' are rejected with reference to consumer sovereignty, transaction and information costs, and 'government failure' which is connected with government interventions. As far as it is organised according to the market principle, the world might seem to be the best of all possible worlds. Such a view is, of course, politically possible, and the demand that there should be as few government interventions as possible is legitimate. However, this depends on value judgements and not exclusively on (scientific) statements of facts.

The arguments which are used stem mostly from microeconomics. Government interventions for economic and especially stabilisation policy are discussed, however, mainly in the framework of macroeconomics. There, the conservative position is held especially by proponents of the 'New Classical Macroeconomics'.[78] As explained above, this theory, which employs the assumption of rational expectations together with the assumption of clearing markets, comes to the conclusion that every systematic policy of demand management is ineffective: only unexpected changes of mone-

[78] The foundation of this theory lies, however, in the (microeconomic) general equilibrium theory. See for this especially R.E. LUCAS (1980, p. 707ff.).

tary or fiscal measures might have a real impact. This led to the renewal of the demand that the central bank should follow a strict monetary rule, and that the government should refrain from any discretionary monetary or fiscal policy. Behind this concept is the old assumption of the stability of the private sector according to which the economic development will be the better the less the government interferes. In the best case, government interventions do not have any effect at all, in a bad case, they create confusion between the private agents which impairs the economic development. Thus, WILLEM H. BUITER (1980) describes the New Classical Macroeconomics correctly as "the Macroeconomics of Dr. Pangloss." There, he refers to the famous character from Voltaire's "*Candide*" who developed in his "metaphysico-theologo-cosmolonigology" the doctrine of the "best of all possible worlds." "This demonstrated," Dr. Pangloss used to say "that things cannot be otherwise; for, since everything is made for an end, everything is necessarily for the best end. ... consequently, those who have asserted that all is well talk nonsense; they ought to have said that all is for the best."[79] The proponents of the New Classical Macroeconomics have adopted this view regarding the modern capitalist economic system, but with two qualifications which Dr. Pangloss in the year 1759 did not yet mention: This holds first, strictly speaking, perhaps only for the United States, and second, only if the government abstains from interventions in the economic process, for the government as a spoilsport 'messes up' the economic development again and again and produces, totally unnecessarily, unemployment and inflation.

However, Dr. Pangloss did not deal only with business cycles. At the beginning of the seventies he was interviewed by the British Broadcasting Company, and he gave his opinion on environmental problems and policy.[80] There, he not only denied a pollution problem, but declared the reduction of pollution as the great triumph of modern civilisation (p. 113), and he also referred to consumer sovereignty: "People can act in their own interests far better than other people can act for them." (p. 114.) Moreover, he now internalised the 'Creed of Chicago': "Good as things are, they would be a lot better if government intervention were less." (p. 115.)

With these statements, Dr. Pangloss reflects the opinion of many (especially U.S.) economists who want to solve (nearly) all social problems by the 'self-healing powers' of the market and to force back government in-

[79] Cited from the English edition: VOLTAIRE, *Candide and Other Writings*, Modern Library, Random House, New York 1984, p.111.

[80] See E.J. MISHAN (1971).

terventions as far as possible.[81] Starting with certain assumptions such arguments are generally consistent. They are, however, in no way a necessary consequence of the application of the economic model of behaviour. Just the thought of transaction and information costs should lead to very careful considerations in which legal frame the individuals are acting. As shown above with the example of environmental policy, the legal framework with its assignment of property rights can have a large influence on which social result will be reached. Starting from different legal regulations, as E.J. MISHAN (1971) argued in his answer to Dr. Pangloss, different actions are optimal for the individuals. Thus, different assignments of property rights can lead to rather different 'best worlds', and according to his usual criterion, efficiency (or Pareto optimality), the economist cannot distinguish between the different 'worlds'. The claim, however, that the 'best world' which is reached without government interventions, is really the best of all best worlds, is nothing more than a dogma.[82]

The acceptance of the position of methodological individualism and its application in economics, in one of the other social sciences, or even in the framework of constitutional economics which will be discussed below, does in no way imply a conservative political position. This is just another example of the importance of value freedom: this approach is equally compatible with a left wing (social democratic) as with a right wing (conservative) political position. It is compatible with each political position which does not itself (explicitly or implicitly) claim an incompatibility, for example by denying the possibility of value-free scientific knowledge (in the sense as defined in the introduction).[83]

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[81] For environmental policy, this position is taken on by F.L. SMITH (1992), for example.

[82] Besides this – with respect to the relationship between government and citizens – 'liberal' tradition, there is another tradition within economics already mentioned above and especially to be found in (German) Public Finance. Within the framework of this 'organic theory of the state', the state is seen as an independently acting subject, and the political decision makers who are acting on its behalf are seen as benevolent dictators. The critique of the conservative-liberal position is taken up insofar as it is pointed to the manifold possibilities of market failure. Consequently, if problems arise, the solution is not seen by the increased usage of market mechanisms but by additional government interventions. This perception of government behaviour is, as discussed above in detail, not compatible with the economic model of individual behaviour. However, this implies nothing against the value judgements behind this approach; they might be brought into the political discussion by their supporters like all other value judgements, too.

[83] This does not hold only for methodological individualism, but generally for the philosophy of science of Critical Rationalism, which is, as explained in the in-

6.4 The Overassessment of the Producibility of Social Conditions

The last problem which might be connected with the application of the economic model of behaviour and which is to be discussed here, is the overestimation of the producibility of social conditions. The consideration that it is possible to influence human behaviour in many directions if the restrictions (the incentives) are set in a suitable way, might lead to the illusion that if the correct policy measures are employed, almost every social situation might be brought about. At the beginning of the seventies of the last century, this illusion was widely spread among social scientists, and also among politicians. The solution to economic problems like unemployment, inflation and economic growth seemed to be possible, if only the appropriate economic policy measures were taken.[84] The same was also assumed for many social problems. The quantitative upswing of the social sciences during this time, the advance of the social scientists and economists in government and bureaucratic positions (and the partly forcing back of lawyers) as well as the additional building up of the system of social security are clear indicators. Today we must realise that the results which have been reached did not only in the area of economic policy not correspond to the expectations which were held at the beginning of the seventies. The producibility or manageability of social conditions which had been radically questioned for a long time, for example, by FRIEDRICH A. V. HAYEK,[85] is today much more sceptically assessed from (nearly) all political and scientific points of view.

First of all it should be reconsidered that by providing the right incentives, human behaviour might be influenced, but that the human beings themselves and their preferences can hardly be changed. As the examples of the former communist countries have shown again and again, even decades of political indoctrination were not successful in making demand disappear for the private availability of certain consumer goods. The longing for a private car in the former states of the Eastern Bloc is just one example, which led to an explosive increase of the number of cars in the former

troduction, its philosophical foundation. As an example of the compatibility of Critical Rationalism with a social-democratic political position, see the contributions in G. LÜHRS et al. (1975, 1976).

[84] This held especially for the unemployment problem. In this sense, for example, JOAN ROBINSON said:, "Now that we all agree that government expenditure can maintain employment ..." (1972, p. 6). For a critique of the ideology of the producibility, see also G. GÄFGEN (1976).

[85] See, for example, F.A. V. HAYEK (1952).

German Democratic Republic after the introduction of the German Economic and Monetary Union on July 1, 1990. If the effectiveness of advertising by private firms is quoted as a counterexample intended to show how preferences can be influenced, first of all it should be explained why advertising performed on behalf of the government should be so much less effective than on behalf of private firms. If this were the only problem, i.e. to apply indoctrination which is successful in the private sphere also in the public sphere, why does the government not just buy better advertising specialists? It is much more plausible to assume that private advertising can also influence the preferences of the individuals at best in the very short-run but certainly not in the long-run.[86]

If, however, preferences can hardly be influenced by government behaviour, then one has to take into account that private agents will possibly react differently to policy measures than is expected and/or desired. As mentioned several times above, human actions have in most cases unintended side-effects. This holds not only for private actions of individuals, but also for political ones. Consequently, political measures often also have unintended side-effects, and those might be even more important than the intended main purpose. For example, alcohol prohibition in the U.S. during the twenties of the last century did hardly lead to a reduction of alcohol consumption but to an illegal supply and demand of alcohol. This opened a large market for the Mafia. When, at the beginning of the thirties, alcohol prohibition was lifted, this illegal organisation was so well established that it could survive the loss of this market.

Today, a very important side-effect of government activity is the underground economy. The burden of taxes, charges and regulations which have been increasing considerably since the sixties, led to a shadow economy whose size is estimated for West Germany, for example, at more than ten

[86] The main reason for the effectiveness of advertising might be that it provides the consumer with new information, which might be correct or wrong. This is firstly information about new products. Secondly and more importantly, it assigns (explicitly or implicitly) specific characteristics to certain goods: characteristics which might be useful to the consumer. There, framing can also play an important role. This does not change the preferences of the individuals, but their (subjective) information about the available alternatives, and it shows new alternatives. That this can create demand for new or additional products is trivial and does not depend on a change of the preferences or 'values'. The conclusion from changed (observable) behaviour and/or from changed attitudes as evaluated by questionnaires to changed preferences is (not only with respect to advertising) often made too fast and unnecessarily. More important is in most cases the changed information. (For the economics of advertising see, for example, R. SCHMALENSEE (1987).)

percent of the official gross domestic product. Similar figures hold for other countries like the United States or the United Kingdom.[87] How far this development can be reversed, i.e. to which extent, for example, a reduced burden of taxes would lead to a shrinking of the shadow economy, remains open.[88] Insofar as investment has been made in the shadow economy which cannot get any legal usage without large losses, i.e. which cannot easily be transferred into the official economy, it is to be assumed that the decline of the shadow economy will take a long time and will hardly ever be complete.

Generally, it might hold that individuals take up the more half or totally illegal activities the more their legal leeway of action is constrained by laws and regulations. This also means that markets cannot simply be prohibited. It is, of course, possible to enact respective laws. But an illegal market will arise if the chances for (large) profits are sufficiently large and if there are enough people who are not sufficiently risk-averse and have the necessary financial motivation. The development of such a market does not have to be accepted but, as the examples of the American Prohibition and, in the same way, the illegal drug markets discussed in *Chapter 4* show, political measures have to be designed carefully. The damage which is caused by the emergence of such a market and the corresponding violations of laws might be larger in the long-run than the damage prevented, because certain actions are prohibited by law and, therefore, can no longer be performed legally.

However important laws and regulations, i.e. instruments of command and control, are in many areas, they are not the only measures the government has to influence the behaviour of the citizens in the desired direction. The design of the political system and the range of freedom and participation rights play an important role, too. WERNER W. POMMEREHNE and HANNELORE WECK-HANNEMANN (1996) showed this in a study about tax evasion in the different Swiss cantons. To reduce tax evasion, it is usually proposed to intensify controls and to increase fines. However, these measures seem to have nearly no impact on the amount of tax evasion; at least it can hardly be detected using statistical methods. But the political system seems to be important: the more direct the democratic system is in the respective canton, i.e. the more extended the rights of the single citizens are to influence and control the amount of taxes collected and their usage, the lower is – ceteris paribus – the amount of tax evasion. It might be worth-

[87] For a recent overview on estimates of the shadow economy of different countries see, for example, F. SCHNEIDER and D. ENSTE (2000) or F. SCHNEIDER (2005, 2006).

[88] See for this H. WECK-HANNEMANN, W.W. POMMEREHNE and G. KIRCHGÄSSNER (1989).

while to think about whether one should try to reach certain political goals like the reduction of the shadow economy or tax evasion, respectively, primarily via an extension of the federal structure of the political system and by introducing more participation rights for citizens. The realisation of such a proposal would, of course, curtail the power of the decision makers in parliamentary systems, as it would reduce the impact of government and political parties in favour of more rights for the citizens. Thus, it might hardly find approval by these politicians because they are, as explained in *Chapter 4*, mainly oriented towards their own interest.[89]

The transformation of the political system towards more direct democracy is, however, also no panacea to solve all problems of society, just as little as the instruments of command and control. In the field of environmental policy, neither the one nor the other might be sufficient to reach the desired long-run improvements. Therefore, economists propose for the solution of these and other problems in most cases the usage of financial (pecuniary) incentives. This has also been suggested in *Chapter 4* when desulphurisation and denitrogenisation of coal power stations were discussed. Because homo oeconomicus is not only, but also financially motivated, such financial incentives are in most cases effective instruments. This holds especially if firms are to be influenced which are active in a competitive market. It has to be taken into account, however, that financial incentives can also lead to evasive actions. These might be smaller compared to a situation where command and control instruments are employed, but they cannot be excluded here.

However promising financial incentives might be in many cases, they can also lead to problems. First, it has to be taken into account that certain goods, like, for example, mutual affection, which are highly valued by individuals, cannot be bought for money. For some other goods it might theoretically be possible to buy them; but it is prohibited by law, i.e. there is a public decision that these goods are not to be exchanged for money. For example, the decisions of judges or of public bureaucrats have to be taken solely according to the law and not according to what the persons involved are prepared to pay: corruption is to be excluded.[90]

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[89] In the Federal Republic of Germany, such proposals are hardly welcomed by many politicians nor by most scientists. They are often rejected using the (wrong) argument that direct democracy had a detrimental impact on the Weimar Republic. This is, however, no sufficient reason not to think about such possibilities. See for this, for example, G. KIRCHGÄSSNER, L.P. FELD and M.R. SAVIOZ (1999, especially pp. 145ff.).

[90] This does not mean that there is no corruption. Because of the threat of penalties it becomes, however, comparatively 'expensive'. – On the economic theory

In our context it is, however, still more important that the 'commercialisation' which results from the use of financial incentives can change the quality of certain goods.[91] Goods whose value is measured by money have – under certain conditions – for the individuals a lower value than if such financial valuations do not take place.[92] As discussed in *Chapter 5*, it might also happen that goods or services, produced without pecuniary rewards, are after the introduction of such a reward produced only in exchange for money: the extrinsic motivation crowds out and perhaps even totally destroys the intrinsic motivation. As KENNETH O. MCGRAW (1978) showed, this is especially the case if the production of these goods is attractive on its own and if heuristic skills play an important role. Moreover, perhaps these goods are produced afterwards in a lower quality.[93]

It also holds that money is only partially suited to function as a gift, i.e. as a means of exchange in personal relations. If one is invited to dinner by friends, the handing over of a check for the amount of the (expected) costs of the evening would be insulting; it would probably end the personal relationship immediately. This holds despite the fact that – from an economic point of view – money is an almost ideal gift because it can be used by the recipient without any efficiency loss,[94] and also despite the fact that it is

of corruption see, for example, S. ROSE-ACKERMAN (1978, 1999), A.J. JAIN (2001), I. SENIOR (2006) as well as F. SCHNEIDER (2006).

[91] See for this F. HIRSCH (1976), but also already A. SMITH (1776, p.124).

[92] STEVEN KELMAN (1981, pp. 69ff.) calls this the 'devaluation effect'. This effect is a good example of the observation discussed in *Chapter 2* that the value of a good depends not only on its physical quality but also on the way it has been produced. – See for this also the contributions in M.R. LEPPER and D. GREENE (1978).

[93] A good for which this might be true is blood. Financial incentives might (perhaps) contrive that more blood is donated but partly by people whose blood quality is bad. In a system of voluntary blood donation, for example, people who urgently need money but know that the quality of their blood is possibly infected do not have any incentive to spend. Therefore, some countries like Switzerland and the United Kingdom rely solely on voluntary donation, while others like the United States have a commercial trade with blood. – A comparison between the British and the U.S. systems is given by RICHARD M. TITMUSS (1970).

[94] This is – accurately seen – nothing else than the well known argument that money is more efficient than in-kind transfers. It is only shifted from the area of social policy to that of personal relations. On the other hand, in social policy, in-kind transfers are also often used. As long as this results in a higher willingness for redistribution on the side of the donor this might also be in the interest of the recipient, despite its lower (economic) efficiency. See for this already W.W. POMMEREHNE (1975).

expected that on such occasions the value of the gift is in some relation to the occasion and/or to the effort of the host. On occasions where, for example at weddings, money is used as a gift, it is on the one hand often committed to a certain purpose (which often is proposed by the recipient himself) and, as RIK PIETERS and HENRY ROBBEN (1999) have also proved in experiments, the package matters: the gift must be more than just the money itself.

There are many situations where there are good reasons to assume that such effects, if they exist at all, are quantitatively negligible. This holds, for example, in many fields of environmental policy. However, if it is assumed that homo oeconomicus has not only pecuniary interests, the occurrence of such effects cannot be excluded a priori; they are compatible with rational behaviour. That such views are widely spread with respect to some issues among the population, shows the often mentioned opinion that the natural environment should not be for sale. This can lead to politically motivated rejections of the application of 'economic instruments' of environmental policy. There are good reasons to assume that such a view leads to a further deterioration of the natural environment because it helps to prevent the usage of efficient measures to protect the natural environment. But such convictions nevertheless imply a further limit to the manageability of social conditions, which can at best be postponed slowly and presumably not without costs.

All this does not mean that one should go back to a minimal state position or that one should accept the view discussed in the previous section that our world is the best of all possible worlds, if the government would largely abstain from intervention. It implies, however, that one has to be prepared that, if incentives are given by public institutions, the goals which are striven for can possibly not, or only incompletely, be reached. This may hold even if financial incentives are used which are usually those proposed by economists. On the other hand, this is also no principle argument against the usage of such instruments. Moreover, political decisions about the use of these (and other) instruments should also always take into account the possible side-effects of such measures and, as far as they are negative, try to avoid them. This leads nearly necessarily to a kind of 'piecemeal social engineering' as proposed by KARL R. POPPER (1944/45).

7 Some 'Normative' Considerations

Until now, the analysis has been strictly positive: We have investigated how rational individuals behave in different economic, political or legal situations. This behaviour has not been normatively evaluated in any sense: the moral quality of such behaviour has deliberately not been discussed. That on the other hand knowledge about such behaviour might be very relevant for practical questions, should at the latest have become obvious when in *Section 4.2* questions of environmental policy were discussed. If it is intended to come nearer to the aim of protecting the natural environment, it is necessary to know how individuals react to different policy measures. This makes it possible to select from the available measures an efficient one, possibly the most efficient one.[1] The assertion which is sometimes to be heard that a strictly positive analysis could not be used for solving 'practical' questions, is rejected already by this example.[2]

Economics as a positive science can, however, achieve more. So-called 'bridge-principles', whose best known is possibly "ultra posse nemo obligatur" (ought implies can, or: not-to-be-able-to implies not-to-be-obliged-to) can be used to criticise proposed norms, i.e. it can provide arguments in normative discourses.[3] This holds not only at the individual, but also at the social (political) level. If certain objectives cannot be achieved by public

[1] Because besides the objective of preserving the natural environment, other objectives are also relevant, like, for example, distributional objectives, and because, generally, policy measures to improve the natural environment have effects also on the realisation of these objectives, perhaps not *the* policy measure is selected which according to the preservation of the natural environment is the most efficient one. This is in line with the fact that the principle of 'sustainability' which – according to a widely spread opinion – should today be the policy guideline, is not only restricted to ecological objectives but also takes the economic and social dimension into account. On the other hand, if anything at all is to be done in this direction, it does not make sense to use measures which (according to a certain value system) are acceptable from a distributional point of view, but do not have any significant effects on the environment. See for this also S. KELMAN (1981).

[2] See for this also H. ALBERT (1960).

[3] See for this H. ALBERT (1968, pp. 94ff., especially p. 98).

G. Kirchgässner, *Homo Oeconomicus*, DOI: 10.1007/978-0-387-72797-4_7,
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authorities, if, for example, it is not possible to permanently reduce unemployment with deficit spending at the cost of higher inflation, corresponding to this maxim this should also not be demanded of a government. In such situations, positive economics shows not only how certain objectives can be reached by certain policy measures, but it can also show that certain objectives cannot be reached at all, or at least not by using the policy measures available. This makes it clear that it is not reasonable to raise corresponding claims. Positive economics is, thus, an effective instrument for the critique of ideologies.

This is already quite a good deal, but many might think that it is not enough. Many citizens expect that a social science which is (at least partly) financed by public money, i.e. through taxes which have to be paid by the 'working population', is able to give help in answering the question of the organisation of a 'reasonable' coexistence of the citizens within a political community, i.e. the question of an appropriate political and economic order, and in doing so also to help to answer the questions about the splitting of public and private spheres in a society. The social scientist cannot evade such questions by pointing to the position of 'value-freedom' and by declaring himself as incompetent to answer them. This holds as well if the position of value-freedom is accepted, which implies that the decision about which norms should be observed within a society and which sanctions should be used to bring such norms into force, has to be taken by the political authorities (with democratic legitimisation) and that the social sciences can give no final answers to these questions. Nevertheless, it can be demanded of the social scientist that he suggests possible answers. That normative systems cannot be true or false in the same sense as (positive) scientific theories and that, therefore, finally, political decisions have to be taken on these matters, does not alter the fact that there are 'better' and 'worse' solutions for political objectives. It is one of the tasks of the social scientist to suggest 'better' solutions, even if he has in the final democratic decision procedure – like every other citizen, too – only just one vote.

If this is accepted as one task of social science or the social scientist, respectively, it can be asked what a social science which is based on the economic model of behaviour can contribute to answer the questions raised above for a 'reasonable' coexistence within a political community and about the splitting of public and private spheres in a country. In the following, some hints in this direction shall be given.

7.1 Rational Behaviour and Reasonable Action

If one looks at the (German) philosophical literature, there is a clear contradiction to be seen between what we have described as rational behaviour or action and what many philosophers describe as 'reasonable action'. According to the economic model of behaviour, an individual is behaving (acting) rationally if, taking into account the given restrictions, this individual is striving for his personal interests as far as possible. According to the philosophical approach, an individual acts reasonably if he sacrifices his own (particular) interests in favour of general, 'generalisable' interests. If this contradiction is to be suspended, institutions have to be established which achieve that in cases of doubt individuals do not act (only) according to their own but (also) according to general interests, i.e. that the non-intended side-effects of their self-interested behaviour support the general (social) aims.

This idea is not new. In economics it has been general knowledge since ADAM SMITH (1723 – 1790) introduced the 'invisible hand'[4] in his most important economic work, "*An Inquiry into the Nature and Causes of the Wealth of Nations*" (1776), and is often elucidated with "*The Fable of the Bees*" by the philosopher BERNARD DE MANDEVILLE (1679 – 1733) which was published already in 1714:[5] a social order should achieve that 'private vices', in this case the passion for money, for possession of goods, and especially for luxury, lead to public benefits.[6] Despite its age, the fable of the

[4] Although the term of the 'invisible hand' is not only connected inseparably with his work but often also used as a short cut to his theoretical ideas, ADAM SMITH uses this term only twice in his work, in the first chapter of the fourth part of "*The Theory of Moral Sentiments*" (p. 304f.) and in the second chapter of the fourth book of "*An Inquiry into the Nature and Causes of the Wealth of Nations*" (p. 456). On the role of this term in the work of ADAM SMITH, see E. ROTHSCHILD (1994) and W.D. GRAMPP (2000), on its role in Economics K.I. VAUGHN (1987).

[5] BERNARD DE MANDEVILLE was born as the son of French parents in the Netherlands. Later on, he worked in London. Actually, the fable was published already in the year 1705 as a pamphlet under the title: "The Grumbling Hive: or, Knaves Turn'd Honest." – For a discussion of The Fable of the Bees, see A. RIKLIN (1985).

[6] The same idea was articulated approximately at the same time by the Italian philosopher GIOVANNI BATTISTA VICO in the following way: "Out of ferocity, avarice, and ambition, the three vices which lead all mankind astray, (society) makes national defense, commerce, and politics, and thereby causes the strength, the wealth, and the wisdom of the republics; out of these three great vices which would certainly destroy man on earth, society thus causes the civil

bees is still fascinating: A social order is to be designed in such a way that the single citizen acts in the common interest, however defined, if he follows his self-interest. In such a system, 'reason' does not only come into effect if all individuals behave in a 'reasonable' way, but the rules of coexistence are so that a reasonable social result occurs even if all individuals behave 'unreasonably'. The idea to design social systems in such a way is the 'regulative idea' which is behind many 'economic' policy proposals.[7] The market is one, but not the only, institution which might achieve rational behaviour of the individuals leading to such a social outcome.

Corresponding to what has been said in *Chapter 2*, economic policy proposals intended to change the social situation usually attempt to change the action leeway of the individuals in a suitable manner, i.e. to give incentives to the individuals so that they develop a self-interest to behave in the required way. As positive economics does not suppose that economic or political entrepreneurs act for moral motives, the proposals of normative economics are normally so that such moral behaviour is not necessary. The single entrepreneur can, for example, maximise his profit in a competitive market if he reduces the costs of production as far as possible, and the political entrepreneur might increase his vote share and, in doing so, maximise his political influence if he follows the preferences of the voters in his policy. Neither are expected to be especially benevolent towards their consumers or voters, but they perform their social functions as it were 'vicariously', to use a term by JOSEPH A. SCHUMPETER (1916).[8] That the incen-

happiness to emerge. This principle proves the existence of divine providence: through its intelligent laws, the passions of men who are entirely occupied by the pursuit of their private utility are transformed into a civil order which permits men to live in human society." (Quoted from A.O. HIRSCHMAN (1977, p. 17). There, a detailed description of the history of this idea is to be found.)

[7] It is also the basic idea behind the concept of 'Ordnungsethik' mentioned above as especially proposed by KARL HOMANN. According to this concept, economic ethics should be 'incentive ethics'. (See for this also H. HOMANN and CH. KIRCHNER (1995, p. 297).) However, this cannot be all, because, as explained in *Chapter 5*, moral behaviour in modern democratic societies is often necessary in low-cost situations, i.e. in situations where no strong incentives are available. In such a situation, pure incentive ethics are not sufficient.

[8] See for this the famous formulation of ADAM SMITH (1976): "It is not from the benevolence of the butcher, the brewer, or the baker, that we expect our dinner, but from their regard to their own interest. We address ourselves, not to their humanity but to their self-love, and never talk to them of our own necessities but of their advantages." (1776, p. 27.) He even holds the view that it is in many cases better for society if individuals behave self-interestedly than if they try to strive for the public benefit: "Nor is it always the worse that it was no

tives are correctly given (in this sense) is, however, at best necessary, but certainly not sufficient for the social outcome to be in some sense reasonable.[9]

The correct placing of the incentives is especially relevant with respect to 'allocational' problems, i.e. if it matters how given resources can be used optimally (for production purposes). As long as the individuals are mutually disinterested, allocational decisions might even be taken unanimously. It is exactly like in the market where every agent only makes a transaction if he expects not to end up in a worse position. This is different, however, with respect to distributional questions, when different Pareto-optimal situations have to be compared with each other and to be evaluated.[10] In doing so, value judgements have to be applied. As mentioned in the introduction, it is not only impossible to provide strictly scientific justifications for such judgements; they cannot be tested in the same way against reality as factual statements either. If nonetheless with a norm which is proposed in a normative discourse, a stronger claim is raised than just a personal subjective opinion, this can only be done by tracing back such a norm to a more general one, already accepted by the other participants of the discourse,[11] or by proposing a (generally acceptable) procedure for how such a suggested norm might be justified.[12]

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part of it. By pursuing his own interest he frequently promotes that of the society more effectually than when he really intends to promote it. I have never known much good done by those who affected to trade for the publick good. It is an affectation, indeed, not very common among merchants, and very few words need be employed in dissuading them from it." (ibid., p. 456.) See for this also D. COLLARD (1978, p. 51f.).

9 See for this, for example, H. ALBERT (1961).

10 This is what JOHN ROEMER (1996) calls 'problems of justice'. At the moment, it might be disregarded that allocational and distributional questions are usually mixed with each other: the solution of allocational problems has distributional effects and vice versa.

11 This is what OSWALD SCHWEMMER demands in his 'moral principle': "Search in a conflict between norms (objectives) super-norms (objectives of higher order) to the conflicting norm (objectives) which are not conflicting, and make such proposals for a change of the conflicting norms (objectives) where the new proposed norms (objectives) are sub-norms (objectives of lower order) of the super-norms (objectives of higher order) which have been found in the first step." (1974, p. 88.)

12 To make it very clear, the fact is once again emphasised that such a procedure cannot solve the basic problem of value judgements. It might, however, solve practical problems if it is possible to obtain the agreement of (at best) all individuals who are affected if a (set of) value judgement(s) is accepted.

If one starts from the principle of equality, which since the period of the Enlightenment has been the basis of the modern theory of the state, such a procedure for the justification of norms should lead to a situation where in principle all can agree to such a norm by which they are affected. A corresponding proposal is therefore: Those norms (value judgements) should be taken as (preliminary) valid (justified) which would be accepted by the individuals concerned in a completely symmetric discourse situation, the so-called 'ideal speech situation'. This kind of justification might be called a 'dialogical justification' contrary to an 'ontological justification' which refers to a supreme authority. Here, a common decision situation of all individuals concerned is supposed in analogy to the decision situation of the single individual in the economic model of behaviour. In supposing such a situation, the assumption of full information may be employed as is done in traditional economic theory. Additional assumptions which are usually made are that the situation is non-coercive and that the arguments used are non-rhetorical, i.e. that the participants try to convince others and not to persuade them.[13]

If in such a discourse the individuals concerned are to make an unanimous decision, one problem arises: If the individuals have diverging, at least partly contradictory, interests with respect to a problem which is to be solved, and if they follow their self-interest, generally, no decision can be reached. This holds especially for distributional questions. In real life such a procedure would strengthen the status quo, if the demand for unanimity is not given up. If this demand is given up, however, the situation is no longer non-coercive.[14] That no decision can be reached depends on two assumptions which were made when the model of this decision situation was developed: the assumptions of complete information and of (one's own) utility maximisation. Together, these two assumptions prevent a voluntary, non-coercive agreement. To reach a decision, at least one of the two assumptions has to be dropped.

For this, two proposals have been made. In the framework of the theory of the non-coercive discourse of the 'Frankfurt School' and the 'Erlangen School' of practical philosophy, the solution to the problem is seen in a change of the preferences: The single individual who is fully informed

[13] For an introduction into the concept of the symmetric discourse situation see, for example, J. RAWLS (1971, pp. 130ff.), J. HABERMAS (1971; 1973, pp. 107ff.), or P. JANICH, F. KAMBARTEL and J. MITTELSTRASS (1974, pp. 34ff.).

[14] Unanimity as a precondition for non-coerciveness is already to be found in K. WICKSELL (1896). This argument can be found again in J.M. BUCHANEN and G. TULLOCK (1962), and is fundamental for the approach of Constitutional Economics as discussed in the next section.

should not follow his self-interest, but act 'morally'. He is allowed to follow his own (particular) interests if, and only if, a discourse in an ideal speech situation has shown that these interests are – possibly after some modification – 'generalisable', i.e. that all individuals who are affected by the corresponding actions can agree.[15]

In the framework of the "*Theory of Justice*" by JOHN RAWLS (1971), however, the informational assumption is changed. Even selfish individuals will generally agree to fair rules if they do not know (or at least do not know exactly) how they will be affected later on by these rules. Therefore, the concept of 'justice as fairness' developed by JOHN RAWLS supposes that the individuals decide from an 'original position' behind a 'veil of ignorance'. In the discourse situation behind this veil, they know all positions which are available later on in society, but the individuals do not know in which situation they themselves will be; they are not even able to use subjective probabilities for being later in one position or another. Therefore, they also do not know their (future) interests, and they do not know how exactly they will be affected by the norm which is discussed. In their own interest they will, therefore, take into account the interests of all individuals (possibly) concerned when making their decision.[16]

OTFRIED HÖFFE characterises the approach by JOHN RAWLS as 'calculative' and the other one (JÜRGEN HABERMAS, FRIEDRICH KAMBARTEL) as 'communicative': "The paradigm of utility calculation is confronted with the idea of communication." (1975, p. 201.) In one case "a procedure to determine the optimum which is separated from the intentions and attitudes of the individuals" is applied, whereas in the other case the idea is "to come together in the face of conflicts to get involved in a discussion

[15] See, for example, F. KAMBARTEL (1974a, p. 66ff.) or J. HABERMAS (1973, p. 108). The concept of JÜRGEN HABERMAS was later called 'discourse ethics'. See, for example, J. HABERMAS (1983, 1991) as well as K.-O. APEL and M. KETTNER (1992).

[16] See for this J. RAWLS (1971, pp. 118ff.). – A similar distinction is to be found in the contributions of JAMES M. BUCHANAN in the framework of 'Constitutional Economics', which is discussed in the next section, and especially in J.M. BUCHANAN and G. TULLOCK (1962). The idea of the original situation can be traced back to the 'categorical imperative' of IMMANUEL KANT (1724 – 1804), to whom nearly all authors refer in this context. (See, for example, J. RAWLS (1971, pp. 251ff.).) This idea was taken up again in the fifties by JOHN C. HARSANYI (1953, 1955) and JOHN RAWLS (1957, 1958). (See for this also J.C. HARSANYI (1975, p. 595).) The discussion about this topic in the last decades has been mainly dominated by J. RAWLS (1971). – For a comparison of different theories of justice, see J. KONOW (2003), for Kantian foundation of the Rawlsian theory, see W. POGGE (1981).

with the purpose of a settlement of the conflicts which intends an agreement." (p. 208f.) It can be assumed that other proponents of the communicative approach like JÜRGEN HABERMAS or FRIEDRICH KAMBARTEL generally share this evaluation of the two approaches by OTFRIED HÖFFE.[17]

If one looks at this confrontation somewhat more closely, it becomes clear that the basic disagreement is about the role of the individual preferences. Both approaches imply a critical evaluation of these preferences, which may lead to a change of the factual preferences.[18] As long as this happens on a voluntary basis, all individuals (can) agree to the respective proposals, because they are not brought into a worse position. That the individuals in such a discourse deliberately accept a deterioration of their position contradicts, however, the assumption of self-interest. Such a 'communication' is, therefore, just one possibility to reach the Pareto-frontier, i.e. a social situation where nobody can be put into a better position without bringing at least one individual into a worse position. The main question, however, comes up only once this frontier is reached: how can the diverging interests of the individuals be balanced? Before this frontier, the conflicts are not real but only apparent ones, as they can be removed by a critical discussion of the interests involved. If we are dealing with real conflicts, this is hardly possible because the transition from one social state to another one implies that at least one individual is made worse off.[19] This, however, is the typical situation of distributional conflicts or of problems of justice, respectively. According to the approach of JOHN RAWLS, in such a situation the factual preferences of the individuals are accepted and it is asked how a balance between these preferences is possible. The communicative approach, however, demands that the individuals change their preferences to become mutually compatible. Who, however, is to be asked, has the right to demand of others that they change their preferences, and what is the legitimacy of such a demand? If the 'natural fallacy' is excluded, such a legitimacy cannot be given by a positive science. Is this possible within the framework of a 'normative' science? As long as it is not to be claimed that value judgements can be founded scientifically, this is also not possible.

If one starts from the democratic point of view that (among mature citizens) nobody has the right to prescribe others what they have to value as

[17] See for this also J. HABERMAS (1983, p. 66).

[18] See for this also the concept of the 'reflective equilibrium' in the *Theory of Justice*, of J. RAWLS (1971, pp. 48ff.).

[19] Thus, the 'moral principle' by OSWALD SCHWEMMER mentioned above is finally nothing but a request for reaching the Pareto-frontier; once the frontier is reached, this principle fails in solving conflicts.

'good' or as 'bad', it is possible to appeal to others so they might change their preferences, but nobody has the right to demand this.[20] If human beings are taken seriously as (mature) individuals, their preferences have to be accepted, even if these deviate from our own. In the end, the communicative approaches cannot avoid this either. Therefore, the basic question for a theory of the settlement of conflicts or, to express it more ambitiously, a 'theory of justice', is not how, by criticising interests, individual preferences can be changed in a way that they become mutually compatible. This is only a preliminary stage which, of course, may sometimes help to settle conflicts. The basic question is how conflicts are settled if such mechanisms are no longer available. In such situations compromises are necessary, i.e. the participants of the discourse are required to at least partially give up putting through their individual interests.[21]

As far as – and this might be assumed – the proponents of the communicative approach also start from this democratic position, and as long as they do not claim that somebody has the right to decide for others what the 'right' or 'true' preferences are, the difference described above vanishes between the two approaches. It remains that the two approaches employ different restrictions with respect to the decision situation, once on the available information of the individuals and once on their motivation. In principle, the solutions of both procedures are identical: The individuals concerned would in both cases accept and reject the same norms and value judgements. But also other solution proposals, like the impartial spectator of the utilitarian theory, lead in principle to the acceptance of the same norms. Important is only, that the decision maker is *impartial*.[22]

Both approaches are 'unrealistic'; they use 'idealised' situations which are not given in reality. This does, however, not mean that they could not be used to justify norms in real situations. In a first step they might have a significance as regulative ideas, which can be used to judge the results of real discourses. It is always possible to ask how, in a certain situation, 'morally acting' individuals or individuals 'behind the veil of ignorance' would behave. If this leads to a clear result, it might be used as an argu-

[20] Nor can a right be derived from the fact that one is prepared to change one's own preferences. That somebody is himself prepared to do something gives no right to demand the same from others.

[21] The proponents of the communicative approach like to speak derogatorily of such compromises and to underestimate their positive importance. This holds, for example, if JÜRGEN HABERMAS contrasts the compromise and the consensus (1973, p. 111ff.), or if OTFRIED HÖFFE discusses the case that contradictory social positions might be "refractory" against a consensus. (1975, p. 229.)

[22] See for this R.M. HARE (1973).

ment in an actual discourse. This is exactly what JOHN RAWLS (1971) does when he suggests his difference principle.[23] In performing such considerations, it is probably more helpful to use the idea of limited information than to ask which norms would be accepted in an 'ideal speech situation' as being 'generalisable' in a specific situation. With the latter question one is again in the centre of the conflict of the diverging interests which should be solved.

The problem of the practical relevance of such proposals and, therefore, of the (at least partial) correspondence between rational behaviour and reasonable action, leads to the question whether situations can be found where the information about one's own (future) position can be limited and/or whether it is possible to influence the behaviour of individuals in a way that they behave altruistically and do not follow their self-interest.[24] As explained in *Chapter 5*, individuals sometimes behave altruistically. This is, however, not the rule; the 'mutually disinterested rationality' is much more typical for average behaviour of individuals. Therefore, one generally cannot assume that the participants of normative discourses – despite their possible pompous personal declarations – pursue the 'objectively justified' and not their individual (particular) interests. Moreover, it is never possible to definitely conclude that the interests which are followed are not 'objectively justified'.[25] For the 'objectivity' of a decision it is not possible to refer to the opinion of a factual majority. Thus, the compromises which are reached if real decisions have to be taken might at best by chance correspond with 'reasonable decisions', however defined.

At first glance, the proposal of JOHN RAWLS does not seem to be in a better position. We have to decide here and today and not behind an imaginary veil. The request to behave as if one were behind a veil of ignorance corresponds quite closely to the request for altruistic behaviour. Thus, the arguments raised above hold here as well. However, the proposal by JOHN RAWLS can also be seen from quite a different point of view, and then it gains much practical relevance. According to his concept, we

[23] According to this principle of distributive justice, social and economic inequalities between the individuals of a society are acceptable only if they provide "the greatest benefit to the least advantaged" (p. 302). – There, an exact formulation of his principles of justice as well as of the corresponding priority rules is given.

[24] At the moment we let aside the problem mentioned above, that it is totally open whoever should have the right to influence individuals in a way that they change their preferences.

[25] Economically rational acting individuals would probably in any case follow their individual self-interest, even if they superficially played the language game of the powerless discourse.

should distinguish between decisions about mechanisms to solve conflicts, which are to be taken at the constitutional level, and decisions to solve actual conflicts, which are to be taken at the operational level. In many cases it can at least approximately be achieved that the individuals decide at the constitutional level behind a – more or less dense – veil of ignorance. This holds especially if the decisions are relevant for the (very) long run, because then the position of the individual can change between the point of time when the decision about the rule is made and the point of time when this rule is applied. This holds, in addition, if the realisation of certain situations later on has (approximately) the same probability for all individuals, especially if it is largely independent of the income of the individuals and of their social status. In such situations, a consensus can be reached on the constitutional level even if all participants of the discourse behave self-interestedly.[26]

Thus, the theory of John Rawls can be seen as a proposal to decide about mechanisms to solve conflicts as long as the individuals do not (yet) know their position later on when the conflict arises. Under this condition, every single individual who participates in the discussion has to take into account the interests of all the individuals concerned. Thus, the rules which are decided on will be so designed that the solution of actual conflicts will not lead to socially unacceptable situations, even if all individuals follow their self-interest. In this way, rational behaviour and reasonable action correspond to each other. The most important point of this proposal is that a consensus has to be reached about the rules to solve conflicts, in order not to have to try something which is a priori impossible, to reach a consensus in every single decision.[27] These rules have to be 'fair', i.e. the individuals will agree to certain rules only if they can expect that in applying these rules the outcome will generally be 'just'. Not the rules per se are

[26] An example is the decision about financial compensation for physical damages which one individual has caused to another (for example, by a car accident). As long as neither knows who will cause the accident and who will be the victim, they might find a consensus about the level of the compensation or about the rules according to which this has to be decided. If such damage has occurred, however, i.e. if it is known who caused it and who the victim is, such a consensus is hardly possible. Whichever sum of money is discussed, it will seem to be too high for the one who caused the accident and too low for the victim. Thus, it makes sense that the exact level of the compensation is decided by a judge (an independent institution) according to rules which have been laid down before the accident.

[27] In a similar way, JOHN C HARSANYI (1977) distinguishes within his utilitarian framework between 'action-utilitarism' on the one and 'rule-utilitarism' on the other side, and he argues quite strongly for the latter.

important, but the expected results if these rules are applied. 'Rule justice' is in this concept not a contradiction to 'substantial justice', but a precondition for it.[28] In this sense, the difference principle is to be seen as the proposal for a rule which leads to a distribution which is as just as possible.

But even if one follows the proposal of JOHN RAWLS, rational behaviour and reasonable action will not always correspond, in the same way as behaviour which is desired (by certain groups, the majority of the population or even by all individuals) cannot always be enforced by providing adequate incentives. Instead of lamenting about the split between rational behaviour and reasonable action, one should, however, make concrete proposals for how this split can be prevented or, at least, reduced. The demand for new, 'better' human beings and or a new consciousness, which can often be found in the history of ideas of philosophy and the social sciences, is in itself not very helpful. On the contrary, one should take into account that human individuals usually behave according to their self-interest. Proposals should, therefore, be such that under this condition the social outcome is as reasonable as possible.[29]

[28] Referring to FRIEDRICH A. V. HAYEK (1976), HOLGER BONUS (1982) reproaches JOHN RAWLS that distributive justice is one of his objectives. But why should rational individuals accept a system of distributional rules, if not because they are convinced that following these rules the social outcome will generally be 'just' or at least more just than if they followed other rules? Finally, the (expected) outcome counts. The same holds for the arguments of JOHN ELSTER (1988), who refers to the difficulties which arise if the consequences of social rules are to be evaluated. He, therefore, demands that new rules which are to be introduced have to be seen by the citizens as "basically just" (p. 319). Such an evaluation will, however, continue in the long-run only if the consequences of these rules are also seen to be 'just'. See also the corresponding arguments by AMARTYA K. SEN (1995, p. 11f.) with reference to ROBERT SUGDEN (1981, 1986) who also distinguishes between a perspective which considers the rules of actions and another one which is different from the former and takes the consequences of acting into account.

[29] This also holds for German philosophy, as far as it understands itself as 'practical philosophy'. In this respect, the proposals of JOHN RAWLS are far more helpful than those proposals which have come (so far) from proponents of the theory of the powerless discourse or discourse ethics, respectively.

7.2 Towards a Normative Theory of Government Behaviour

The question of how conflicts within a society are to be solved in a reasonable manner is, of course, not only a question of individual behaviour, but first of all a question of the political constitution. After all, the relevant conflicts are not only those between single individuals, but, especially if distributional questions are discussed, conflicts where (nearly) all members of a society are involved, and which are, therefore, in many cases solved by collective agreements. This, however, leads us to a normative theory of government behaviour. Such a theory should first of all provide arguments as to which tasks should in a (democratic and free) society be performed by private agents, and where collective regulations seem to be necessary. Moreover, rules and criteria are to be developed which should lead the behaviour (or can, at least, be used to evaluate the behaviour) of the public authorities in the policy areas assigned to them. Thus, we again have to distinguish between the two levels mentioned above, the level of the current political process (the post-constitutional level) and the constitutional level, the level of the 'basic social consensus'. This is a basic distinction not only for the "*Theory of Justice*" by JOHN RAWLS, but also – as mentioned already – for 'Constitutional Economics' and for the 'Theory of Democratic Economic Policy'.[30] At the level of the basic social consensus, it has to be decided which tasks are to be assigned to the government and which decision rules have to be applied to different issues.[31] In principle, decisions are taken unanimously at this level, i.e. each individual who is

[30] While the theory of democratic economic policy covers both levels, constitutional economics deals only with the constitutional level. Thus, constitutional economics might seem to be (only) part of the theory of democratic economic policy. However, constitutional economics deals not only with questions of economic policy, but quite generally with constitutional rules. It, therefore, by far extends the field of democratic economic policy. On the theory of democratic economic policy, see B.S. FREY and G. KIRCHGÄSSNER (1994), on constitutional economics J.M. BUCHANAN (1987, 1987a), G. BRENNAN and J.M. BUCHANAN (1985) or R. CONGLETON (1988) and also D.C. MUELLER (1996).

[31] See for this especially the classical contribution by JAMES M. BUCHANAN and GORDON TULLOCK (1962). – Not everything that is contained in real constitutions belongs – according to this distinction – to the level of the basic social consensus. On the other hand, there sometimes exist within societies unwritten rules which are in this sense constitutional rules. See for this, for example, B.S. FREY (1979) as well as B.S. FREY and G. KIRCHGÄSSNER (1994, pp. 10ff.).

affected has a veto position.[32] In comparison, at the level of the current political process, those rules are applied which have been approved at the constitutional level. Thus, at the post-constitutional level, single individuals or even groups of individuals can be outvoted.

With respect to policy measures in the current political process (at the post-constitutional level), the considerations made so far lead to the following two points which should be observed:

(i) Whenever possible, public policy measures should be designed in such a way that they are effective even if private agents behave self-interestedly. Therefore, the incentives for the behaviour of private agents should be placed by the policy measures in such a way that it is in the self-interest of the acting individuals to contribute to the desired social aim.[33]

(ii) It should be taken into account that private agents might behave differently to public policy measures as expected and/or desired. Therefore, possible side-effects of such measures have to be considered, in order to exclude them as far as possible if they were unwelcome. In addition, possible actions should be kept open in case such unexpected negative side-effects occur.

From the discussion about the theory of rational expectations, the following principle follows, which is closely connected with the first two:

(iii) Public policy should be conceived in such a way that the desired result is reached even if private agents are fully informed on the policy measures. It has to be taken into account that citizens learn. Therefore, they might be surprised in the short-term, but it is impossible to build up a(n economic) policy on such surprises, if it is to have long-run effects in a systematic manner.

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[32] If the level of the basic social consensus is treated equal to the (political) constitutional level, there is in reality on the latter, of course, no unanimity requirement, but it has, at least, to be decided by a qualified majority. In the United States, both houses of the congress have to agree with a majority of two thirds, the latter also holds in Germany for the two chambers of the parliament, while in Switzerland the majority of the people as well as of the states ('cantons') has to agree. – For an interpretation of unanimity, see also B.S. FREY and G. KIRCHGÄSSNER (1994, pp. 39ff.).

[33] This condition corresponds to the demand stated by KARL HOMANN and INGO PIES (1994, p. 11) that public policy measures should always be subdued to a H-O-test (homo oeconomicus test) before they are realised.

This principle is meaningful, even if the strong variant of the theory of rational expectations, as developed by JOHN MUTH (1961), which is the basis of many models of the New Classical Macroeconomics, has to be rejected, given the available empirical evidence. Nonetheless, it makes sense to apply this principle in economic analyses, if we assume that private agents learn and that, in doing so, they move 'in the right direction'. This holds independently of whether a specific hypothesis about this learning behaviour and/or about the information of the private agents is true or not.

If the policy measures are to be effective, it is in the self-interest of politicians to follow all three recommendations. Other recommendations which contradict the interests of politicians have, on the other hand, nearly no chance of being realised in the current political process, because the economic model does not hold only for economic agents and for voters but, as explained above, also for politicians: They generally also act according to their self-interest.[34]

Therefore, one might be rather sceptical with respect to governmental actions. Such scepticism makes sense in particular if constitutional questions are to be discussed, i.e. if we are debating at the level of the basic social consensus. There, the task is to design a political order which will lead to socially acceptable outcomes even if politicians do not strive for 'social welfare' (however this might be defined), but are only oriented towards their own benefit. For this problem, KARL R. POPPER used the following formulation: "How can we so organise political institutions that bad or incompetent rulers can be prevented from doing too much damage?" (1945, p. 121.)[35] Because, as already DAVID HUME said: "A constitution is only so far good, as it provides a remedy against mal-administration." (1741, p. 22.) And JOHN MAYNARD KEYNES warns: "Dangerous acts can be done safely in a community which thinks and feels rightly, which would be the way to hell if they were executed by those who think and feel wrongly." (1944, pp. 387f.)

If, however, governments are generally seen as being benevolent, the question should be posed quite differently: How can we give the government that competence which is necessary to bring about public welfare? This question is, of course, only in very rare cases explicitly formulated in this way, but is often implicitly behind claims for an extension of the gov-

[34] On the theory of economic policy advice, see B.S. FREY and G. KIRCHGÄSSNER (1994, pp. 451ff.) and G. KIRCHGÄSSNER (1996b, 1999, 2005b).

[35] A 'good' answer to this question is much more important than an answer to the question: "Who should rule?" mentioned above. The better a political system functions, even if the rulers are incompetent or bad, the less important it is who rules.

ernment's leeway, if this claim is substantiated by the assertion that due to a lack of competence the government would not be able to fulfil its 'true' tasks.

The concepts which are behind these two questions differ in two respects: First, as already mentioned, there are different assumptions about the motivation of the government (as of all other citizens) and about the manageability of social conditions. Second however, and this might be more important, there are differences with respect to risk behaviour. Of course, if one realises that a government is not behaving in the desired 'moral' way, it is always possible to claim with JOHN MAYNARD KEYNES: "What we need is the restoration of right moral thinking – a return to proper moral values in our social philosophy." (1944, p. 387.) But this does not change anything. On the other hand, a risk averse individual might, even if he is convinced that democratically elected governments behave generally benevolently, nevertheless plead for restrictions on the government's leeway, if it is to be avoided that 'wrong behaviour' (which might still be possible) leads to detrimental consequences for the citizens and for the society as a whole. This corresponds to the maximin-rule of game theory: Select from all alternatives the one which minimises the damage even in the worst case! This is the maxim which is behind the question by KARL R. POPPER quoted above and the remark by DAVID HUME.

This implies, however, as already mentioned at the end of *Chapter 2*, that it is meaningful to investigate government behaviour under the assumption of self-interested or even malevolent politicians, even if one personally assumes that politicians generally behave differently. At least those possible actions should be excluded from the government's leeway which might lead to catastrophic results, even if the probability for this is rather small.[36] The 'costs' of such a strategy can, however, be that even a benevolent government is unable in some situations to take certain measures which would be in the interest of a large majority or even of all citizens.[37]

[36] This argument can be brought against the use of nuclear energy, even if the probability of nuclear accidents were so small that according to the principle of maximising expected utility, one should argue in favour of its use. See for this H.W. BRACHINGER and R. SCHUBERT (1986).

[37] It is self-evident that it is also one purpose of a constitution (and probably its most important one) to restrict the leeway of the individual citizens in order to ensure that they respect each other's individual action leeway. This holds in a democratic system as well. On the other hand, BRUNO S. FREY (1997a) has pointed to the fact that too strong restrictions of the individual actions might reduce the engagement of the citizens for their community. The more political rights they have, the larger might be their engagement and the more they are

But the acceptance of this precautionary rule does not yet tell which tasks should be assigned to the government or which rules it should follow, respectively. Moreover, it does not follow from this principle, that the constitution should only imply a minimal state position, as proposed, for example, by ROBERT NOZICK (1974), or that the government should abstain from redistributive measures, as FRIEDRICH A. V. HAYEK demands. In any case, the government should be given all those tasks where (nearly) all citizens agree. This holds especially for the production of certain 'public goods', i.e. of goods where there is no rival consumption and where nobody can be excluded from the consumption, like the guarantee of legal security or national defence. To these tasks belongs also the safeguarding of the market order, if such an order is to be introduced and maintained at all. This implies that the 'freedom to make contracts' is guaranteed (as long as these are voluntary contracts and do not shift burdens to third parties who are not involved) and that the legal order makes it possible to push through claims which have been deliberately agreed on in contracts. For this, of course, a coercive power of the state (including its monopoly for such a power) is necessary.[38]

Up to this point, the assignment of tasks to the government might be without problems, as we are dealing with Pareto-superior solutions, i.e. by introducing such solutions it is possible that some citizens reach a better position while nobody's situation deteriorates. Such proposals can – in principle – be accepted even under unanimity, and an economist who makes such proposals might receive general agreement. It becomes much more difficult if the range of governmental action is to be extended further, especially if questions of income redistribution are considered. There will be winners and losers, and no general agreement can be expected, at least,

willing to contribute voluntarily to the public good 'functioning of a democracy'.

[38] ADAM SMITH (1776) characterises the concept to restrict government activity in these fields in the following way: "According to the system of natural liberty, the sovereign has only three duties to attend to; three duties of great importance, indeed, but plain and intelligible to common understandings: first, the duty of protecting the society from the violence and invasion of other independent societies; secondly, the duty of protecting, as far as possible, every member of the society from the injustice or oppression of every other member of it, or the duty of establishing an exact administration of justice; and thirdly, the duty of erecting and maintaining certain publick works and certain publick institutions, which it can never be for the interest of any individual, or small number of individuals, to erect and maintain; because the profit could never repay the expense to any individual or small number of individuals, though it may frequently do much more than repay it to a great society." (pp. 688f.)

if it is assumed that the citizens behave self-interestedly when dealing with their political and economic problems.[39]

Such questions can be decided on politically, for example with the simple majority rule, as is actually often done. In discussing such problems, the economist can – as every other citizen, too – contribute with his individual opinion. Such decisions might sometimes seem to be made by chance, i.e. corresponding to the current (but often changing) majority situation; they can also lead to the exploitation of a minority by the majority (or even to the exploitation of a little-interested majority by a highly-engaged minority). Such results have to be accepted, if the simple majority rule has been accepted as a suitable decision mechanism. There is, however, no necessity to always apply the simple majority rule. Rather, it makes sense to ask which decision rules shall be applied to which problems, and whether the economist (or the social scientist or the political philosopher) can contribute arguments for or against the application of specific decision procedures for specific problems, which transcend his current subjective interests.

In dealing with such questions, it is again helpful to take up the idea of the original position and to ask which tasks (for example, with respect to income redistribution) rational individuals would assign to the government in such a situation, which restrictions they would place for governmental behaviour and which rules they would propose to decide on which issues in the current political process. In doing so, not only the (fictive) constitutional legislators may behave according to the economic model of behaviour, but these legislators should also assume that later on the individuals in the current political process, i.e. the government as well as the citizens, behave according to this model. Because they do not know their position in the later society, they also do not know whether they will be part of the government or belong to the private agents, whether they will belong to the rich or to those who depend on social welfare.

How such a constitutional legislator would behave is not a specific economic question, in the same way as the behavioural model is not a specific economic one. To give a reasonable answer to this question, however, all available knowledge about economic and political processes should be used. Thus, the economist as well as the political scientist can make contributions in answering this question not only as political individuals but also from their positions as scientific specialists.

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[39] There is also some amount of Pareto-improving redistribution. (See, for example, G. BRENNAN (1975), or the interpretation of the Rawlsian difference principle by JAMES M. BUCHANAN (1976).) The actual amount of redistribution in the modern (welfare) state by far extends, however, this kind of redistribution.

This procedure allows finding arguments in favour of and against government intervention. The statement that the individuals in the original position would assign a specific task to the government is such an argument, and as it tries to transcend the individual interests, probably a relatively strong one. Nonetheless, the expectations which are directed towards this procedure should not be too high. First, as the discussion about the difference principle proposed by JOHN RAWLS has shown, the beliefs about which distributional rules would be selected by the individuals in such a situation are rather different. Second, such an argument can be seen as a request to support the proposed position, but because such positions always include value statements, it is also always possible to argue consistently against such a position. The foundational problem of value judgement cannot be solved by such a procedure. On the other hand, this concept leads again to the regulative idea mentioned above: Whenever possible, one should decide on rules which are to be applied in situations of conflicting interests as long as the actual distribution of the interests is not yet known. Such rules could and should be decided on with a high quorum, and to change such a rule, a correspondingly high quorum should be necessary. This holds, for example, also for the basic rules which are laid down in real constitutions.

If one goes to the level of the basic social consensus, this leads to the following principles for the assignment of tasks to the government.

(iv) Only such tasks should be assigned to the government which rational individuals would assign to it in the situation of the original position, i.e. if the constitutional legislators did not know how they would be affected if the corresponding competence was used, especially whether they would belong to the government or to those who are governed.

(v) If some competence is assigned to the government, it is to be asked, whether this will lead to socially acceptable results, if the politicians act according to their self-interest, if they neither act according to the interest of their voters nor strive for anything like the ‘public welfare’. If under this condition a detrimental outcome is to be expected, such competence should not be assigned to the government; at minimum it should be restrained and additional safeguards should be built into the political system.

If distributional questions are relevant, i.e. if questions have to be decided where the actual interests of the individuals concerned are in conflict, then, whenever possible, the following principle should be followed:

(vi) Rules of how such conflicts are to be decided on should be determined before it is discernible who will be a winner and who will be a loser once these rules are applied. In such a situation all people (possibly) affected might plead for fair rules. The actual application of such rules in case of a conflict has to be enforced by 'neutral' persons, i.e. by individuals who themselves have no personal interest (or a personal interest as minimal as possible) as to how this conflict is going to be decided.

If such a situation cannot be established, it still might be useful to make a mental experiment with people who are not personally involved in this conflict and to ask them what rule they would propose for its solution. It might also be possible to let them act as referees.

That in a society the rules (not only) of government behaviour are accepted as 'fair' and the distributional result insofar as 'just' (or at least not as too unjust) is not only a purely academic question. In this sense, justice is an important 'production factor'. If one of the (important) groups in the distributional process comes to the conclusion that the distributional result is unjust to an extent that it is no longer acceptable, it will turn its activities no longer towards an increase of the production but towards a change of the distribution. To the extent that resources are used for this purpose, the total amount of goods which is available in a society is reduced; finally all might be worse off. JAMES M. BUCHANAN (1976) has shown that the Rawlsian difference principle can be interpreted as being a distributional rule which has the property that such distributional conflicts are to be avoided. Social justice can in this way increase efficiency; it is in no way a necessary contradiction to efficient production.[40]

[40] This contradicts the view of FRIEDRICH A. V. HAYEK (1977) who considers from his, as he calls it, 'liberal position' striving for 'social justice' as nonsensical. Moreover, social justice is not only a term from the point of view of consumers, belonging to the category of "improper images", as HOLGER BONUS (1982, p. 609f.) states with reference to FRIEDRICH A. V. HAYEK, and is, of course, not "in complete dissociation from the productive sphere", but perhaps even a precondition for efficient production. (Evidence supporting this view is presented by the empirical studies mentioned below (*Chapter 8*, Footnote 49) which show that economic growth is – ceteris paribus – the higher the more equal the income distribution.) This holds despite the fact that social justice will finally always remain an aim that cannot be realised. Nevertheless, it is necessary for the well functioning of a (democratic) society that the rules that are used are *also* directed towards this aim. – Similar arguments can be given to support other institutional arrangements like, for example, co-determination, which, from a purely neo-classical point of view, might have a negative impact

Thus, we have altogether six principles which can be used to find arguments for the evaluation of a constitution or of concrete policy measures. If these principles were strictly applied, something might be improved in actual politics. This holds, for example, for the legislative process. Some later modifications of a law would not have been necessary if the legislator had from the outset taken into account that at least some of the individuals concerned will try to exploit the legal regulation according to their own interest, and that they will do so as far as possible, at least as long as the law is literally observed. (In some cases the individuals not only violate the intention, but also the letter of the law.) On the other hand, this does not mean that only those laws should be enacted which will be observed by all individuals. There are many legal regulations, especially in criminal law, where it is known from the outset that some individuals will violate them, and where it nevertheless makes sense to enact them.[41] Moreover, not all possible main- and side-effects of legal regulations can be discovered a priori: the legislator also behaves under limited information. But before a law is enacted, at least the main evasions and violations which are to be expected should be evaluated in an unbiased manner, and one should not, for example for ideological reasons, close one's eyes.

The questions, which tasks are finally assigned to the government and according to which rules the public institutions should decide in the current political process, cannot uniquely be answered even if these principles are strictly applied. At best, points of reference can be given.[42] The view which is supported by a citizen with respect to government interventions in the economic process, depends on his own value position, whether he adheres more to a liberal-conservative or to a social-democratic position, whether he follows in the evaluation of distributional rules the utilitarian position of JOHN C. HARSANYI, according to which individuals would in the original position apply the principle of maximising expected utility, or the arguments by JOHN RAWLS leading to the difference principle. Technically speaking, the position of this question depends on the weight which the arguments of freedom, equality (of opportunity), social justice (solidarity), and material welfare carry in the utility function. If it were possible to reach an agreement about the utility functions of individuals in the original

on efficiency. JOHN R. CABLE and FELIX FITZROY (1980) have shown that co-determination might even be efficiency improving.

[41] But especially with respect to the criminal law, sometimes the question has to be raised how far behaviour should be judged as being a criminal offence by a law if a large and possibly increasing number of people behave in this way and are, therefore, violating this law.

[42] See for this also R. ZINTL (1984).

position, an agreement about the constitutional rules might be reached as well. As this will not be the case, there will exist further on different concepts about the adequate role of the government in the economic process and, therefore, in particular, about the extent of the welfare state. [43] Nevertheless, a strict application of the principles listed above might not only make discussions about governmental tasks more objective, but it would also be possible to trace back conflicts in such discourses to underlying (philosophical and/or political) positions, and it might – perhaps – also be possible to solve some of these conflicts.

[43] The Scandinavian model seems to be – al least until today – a successful alternative to the Anglo-Saxon model which seems to be preferred by most economists. For the former see, for example, T.M. ANDERSEN (2004, 2007).

8 Homo Oeconomicus and the Unity of the (Social) Sciences

As has been brought up several times, homo oeconomicus is a general concept for the social sciences, which has been applied successfully not only in economics, but in other social sciences too. As already mentioned in the introduction, the usage of this behavioural model means a step towards the unity of the social sciences. However, how large is this step? Have we already reached our destination? Thus, again, we have to seek the relation between economics and its neighbouring social sciences, but less in relation to political science and law (as in *Chapter 4*), than to sociology and psychology. Besides this, however, we have to ask more generally where the place of economics is in the system of (all) sciences, in particular its relation to the natural sciences.[1] It seems necessary to discuss this relation, especially because economics has often been oriented towards the natural sciences, first of all towards the ideal example of classical mechanics.[2]

8.1 Economics and Physics: The General Scientific Method

The development of classical and in particular neo-classical economics took place under the impression of the success of classical physics, especially of classical mechanics developed by ISAAK NEWTON. The same way as in physics the movements of the planets have been described and, thus, explained by a system of differential equations, the same way the behaviour of the economic subjects, i.e. producers and consumers, should be de-

[1] See for this also E. TOPITSCH (1963) and T.W. HUTCHINSON (1981).

[2] In the following, we consider only the social and natural sciences; this does not imply that other sciences (or arts) are to be excluded from the cosmos of arts and sciences. We do not intend to exclude any field. – To make the terminology clear, we always speak explicitly of 'natural sciences' when we mean physics, biology, and so on.

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scribed by such a system of equations in economics. In both cases, the 'laws of movement' should be revealed.[3] While this holds only implicitly for the classics and in particular for the work of ADAM SMITH, it became extremely obvious in the neo-classical area. Already for W. STANLEY JEVONS it was "clear that Economics, if it is to be a science at all, must be a mathematical science" (1871, p. 3), and the theory he developed "may be described as *the mechanics of utility and self-interest*" (1871, p. 21). Approximately at the same time, LÉON WALRAS (1834 – 1910) denotes pure economics as an "exact science" (1874, p. 47), "and this pure theory of economics is a science which resembles the physico-mathematical sciences in every respect." He continues: "If the pure theory of economics or the theory of exchange and value in exchange, that is, the theory of social wealth considered by itself, is a physico mathematical science like *mechanics* or *hydrodynamics*, then economists should not be afraid to use the methods and language of mathematics" (p. 71). His system of the theory of general equilibrium has – including the modern version of KENNETH J. ARROW and GERARD DEBREU – formally the closest relation to classical mechanics. JOSEPH A. SCHUMPETER, who despite his role as one of the founding fathers of the Econometric Society was himself not that much formally oriented, wrote about the Walrasian System: "His system of economic equilibrium, uniting, as it does, the quality of 'revolutionary' creativeness with the quality of classic synthesis, is the only work by an economist that will stand comparison with the achievements of theoretical physics. ... It is the outstanding landmark on the road that economics travels toward the status of a rigorous or exact science" (1954, p. 827). IRVING FISHER (1867 – 1947) stated the analogy between economics and classical mechanics most clearly in the third chapter of his dissertation, which was submitted to Yale University in 1891 and was published one year later. He contrasted, for example, the physical entities particle, power and energy, with the economic entities individual, marginal utility and utility. Moreover, there are a large number of textbooks that point still today to the orientation of (mathematical) economic theory on the ideal example of classical physics.[4]

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[3] See for this, for example, H. ALBERT (1973).

[4] Nor does MILTON FRIEDMAN see any systematic difference between economics (and other social sciences) on the one, and physics (and the other natural sciences) on the other hand, when he writes about the differences between the single sciences: "But such differences are as great among, say, physics, biology, medicine, and meteorology as between any of them and economics." (1977, p. 452). – For further examples of this point of view, see H. ALBERT (1973) and H. THOBEN (1982).

The use of mathematics is certainly not crucial: today parts of psychology also use a great deal of mathematics, even though hardly anybody would presuppose that it is strongly oriented towards the ideal of classical mechanics. Moreover, mathematics has been developed considerably further since the times of classical and neo-classical economics: many problems which seemed to lie outside the realm of economics are today (at least principally) open to mathematical formulations.[5] The mathematical (formal) representation of economic theories is nothing more than the usage of a special language through which the argumentation is made clearer and more precise. On its own, it does not allow any conclusions about the orientation of one science on the ideal example of another one.[6]

More critical is the assumption of the principle reversibility of economic processes which is implicitly included in the orientation towards classical mechanics. Mechanical processes are reversible, economic processes – generally – not. Moreover, in principle, mechanical processes might continue infinitely, which also does not hold for economic processes. In addition it holds that economic processes pass through natural time, which does not hold for mechanical processes in the same way.

Critique of this mechanistic conception of economics has been raised in particular by NICHOLAS GEORGESCU-ROEGEN (1971, 1975).[7] His starting point is also physics, however not mechanics, but thermodynamics, especially its second theorem, the 'entropy law', according to which all energy is finally transformed into heat, and within a closed system this heat is finally distributed in such a way that it cannot be exploited any longer. The really new point of this perspective is, with respect to economics, however, the status this law obtains. Newton's mechanical laws were (and today still are for many) ideal examples, according to which theory building in economics should be oriented. The economic laws should be developed in analogy with the laws of mechanics. In contrast to this, NICHOLAS GEORGESCU-ROEGEN stresses that the laws of thermodynamics also *hold*

[5] One might think of statistics, which allow the mathematical treatment of probabilistic systems, which play an important role today in natural as well as in social sciences. Or of the modern theory of dynamic systems, which allows the description of qualitative changes of systems in mathematical terms. – For the latter see, for example, M. FRANK and T. STENGOS (1988).

[6] IRVING FISHER (1892a) might be seen as the classical contribution to the relation between mathematics and economics. There, a whole series of citations for and against the use of mathematics in economics are to be found. More recent contributions of famous economists to this theme are, for example, by PAUL A. SAMUELSON (1952) and by GERARD DEBREU (1984, 1991).

[7] See also M. FABER and J.L.R. PROOPS (1985, 1986) as well as the contributions by W.W. GOOL and J. BRUGGINK (1985).

within the realm of economics. Economic theory which does not take this into account is necessarily erroneous. This objection is directed in particular to the models of general equilibrium and growth theory, which allow the possibility of infinitely long ongoing equilibrium or growth processes.

In principle, this argument is correct. The question is, however, how relevant it is. The laws of thermodynamics hold also for the movements of the planets, but nevertheless the laws of static mechanics have proved to be an excellent instrument to explain and predict these movements. Similarly, there are wide regions in economics and other social sciences for which powerful theories can be developed in which the laws of thermodynamics do not play any role. On the other hand, there are *also* areas of economic theorising, where these laws are quite important. This holds in particular if we look at the natural fundament of the economy, i.e. in the areas of energy, resource, and environmental (ecological) economics.[8] There, the arguments of NICHOLAS GEORGESCU-ROEGEN are relevant, for example, whenever is discussed whether or how far expected future scarcities of (fossil) energy or other natural resources can be overcome by technical progress.[9]

The question concerning the reversibility or irreversibility of economic and social processes is, however, not the decisive one in the discussion about the relationship between physics and economics, or between natural and social sciences.[10] More important is the question whether it makes sense to search in economics (and in other social sciences) for general laws in the social behaviour of human beings, as natural sciences and in particu-

[8] See for this, for example, M. FABER, H. NIEMES and G. STEPHAN (1983) or M. FABER and J.L.R. PROOPS (1990). In this area a new development took place in the nineties, 'ecological economics', which takes in particular the ecological preconditions of sustainable (economic) development into account. See for this, for example, M. FABER, R. MANSTETTEN and J.L.R. PROOPS (1996), R. CONSTANZA et al. (1997) or H.E. DALY (1999). For the influence of NICHOLAS GEORGESCU-ROEGEN on the development of (Ecological) Economics, see H.E. DALY (1995). For a critical discussion of this concept from the perspective of 'traditional' environmental economics, see G. KIRCHGÄSSNER (1997).

[9] There is no difference between NICHOLAS GEORGESCU-ROEGEN and the economists he is criticising insofar as both at least accept that a fruitful collaboration between physicists and economists is possible and necessary to answer such questions. See, for example, W.J. NORDHAUS and J. TOBIN (1972, p. 16).

[10] Moreover, not thermodynamics, but biology is the real 'evolutionary' natural science which is relevant for economics; this will be discussed separately below.

lar physics have done, by investigating natural processes.[11] Do such laws exist at all in the social sciences, or does, in this respect, there not exist a clear difference between natural and social sciences? Do they have their own concepts of what a law means? Does, for example, the "general law of capitalist accumulation" as postulated by KARL MARX (1867, p. 612), have the same logical status as the laws of gravity discovered by ISAAK NEWTON?[12]

Starting with such questions and based on the assumption that there are major differences between natural and social sciences, not a few social scientists as well as philosophers of science accuse economists of being subject to a 'scientistic prejudice' if they orientate their research along the ideal of classical physics and, as in the natural sciences, search for general laws. This accusation is often transmitted towards the whole of modern economics (or at least towards large parts of it). As an alternative, a normative approach is demanded. However, if one looks a little more carefully, this accusation is often raised by schools in philosophy of science which (at least up to now) have not made any considerable contribution to the development of a (new) economic theory or whose attempts have to be judged as failures.[13] On the other hand, the reproach of scientism is raised in this context also by KARL R. POPPER (1962, pp. 90f.), i.e. from the point of view of critical rationalism, which otherwise emphasises the unity of the

[11] See for this, for example, HANS ALBERT: "With respect to its methodology, the economic program owes without doubt an important component to the influence of classical physics: the idea that social phenomena are governed in the same way by laws as natural phenomena, and that one should search for such laws and try to codify them in a similar way, as Newton has done for the laws of mechanics in his system." (1977, p. 183.)

[12] If one considers the collected papers of KARL MARX, such an interpretation can at least not be excluded. In the preface to the first German edition of the first volume of "Das Kapital" he writes about "the natural laws of capitalist production, ... these tendencies working with iron necessity towards inevitable results." (1867, p. 8.) Moreover, he compares his work with that of a physicist, and his intention is to discover "the natural laws of the movement of a society" (p.10.) – See for this also H. ALBERT (1973, pp. 140f.).

[13] Two schools shall be mentioned which found considerable feedback (not only) in Germany: The system theory by NIKLAS LUHMANN and the philosophical constructivism of the Konstanz School. Attempts from a system theoretic point of view can be found, for example, in N. LUHMANN (1970, 1988); for a critique see H. MATTFELD (1974). Contributions by philosophers from the Konstanz School are, for example, F. KAMBARTEL (1975, 1979) and P. JANICH (1979); for a critique see G. KIRCHGÄSSNER (1977) and for a general evaluation of this position H. ALBERT (1986, p. 16).

scientific method.[14] Consequently, BODO ABEL (1983, pp. 2f.) ascertains a contradiction between the views of HANS ALBERT and KARL R. POPPER. Thus, it is important to make it clear what the unity of the scientific method of natural and social sciences can mean and where differences might exist. While the independence of the social sciences is discussed in the next section, we first deal with the question of the unity of the scientific method or, to say it in a more pronounced manner, where there is *no* difference in the scientific approaches of economists and physicists.

The common ground is in fact the search for general (nomological) laws.[15] "It is characteristic for the theoretical sciences, that they do not restrict themselves to the search for isolated laws, for example, for inductive generalisations of observed facts, as often is assumed, but that they try to construct more or less encompassing systems of nomological statements, to be able to enter as deep as possible into the structure of the part of the reality which they are interested in. This also holds for theoretical economics."[16] Insofar, there is no difference between economics and physics, natural and social sciences. Both employ the same 'deductive-nomological' model of explanation.[17] According to the original contribution of CARL G. HEMPEL and PAUL OPPENHEIM (1948), its structure might be described (somewhat simplified) in the following way:[18] The explanation is divided in two major constituents, the 'Explanans' and the 'Explanandum'. The Explanandum, E, is the sentence which describes the phenomenon (event) which is to be explained, while the Explanans contains those sentences used to perform the explanation. It falls into two subclasses. The first contains the Antecedens

[14] However, KARL R. POPPER (1962) recognises scientism less in economics than in other social sciences. (See pp. 90f.)

[15] In this respect, there is at least no major difference between the views of KARL R. POPPER and HANS ALBERT, as can be seen from K.R. POPPER (1962). On the other hand, there are differences concerning the significance of the psychological hypotheses that are necessary to explain human behaviour. HANS ALBERT speaks of a "motivational deficit" (1984, p. 58), and he demands a "concretisation, employing the results of psychological research, of the behavioural laws which are necessary for an explanation" (1977, p. 204), while according to KARL R. POPPER "this 'psychological' part of the explanation is often very trivial, as compared with the detailed determination of his action by what we may call the logic of the situation" (1945 II, p. 97). – On the position of KARL R. POPPER, see also D.W. HANDS (1985).

[16] H. ALBERT (1973, pp. 133f.).

[17] Because CARL G. HEMPEL and P. OPPENHEIM (1948) were the two who were mainly responsible for the development and formulation of this 'DN-model of explanation', it is often also called the 'H-O-schema'.

[18] See also C.G. HEMPEL (1965).

conditions, $C_1, ..., C_k$, which contain particular facts invoked, the second contains general laws, $L_1, ..., L_r$. These laws are *nomological* statements of the form: For all x it holds: If A(x), then B(x). Both classes of sentences in the Antecedens conditions are necessary in order to perform a valid explanation, neither the laws nor the Antecedens conditions alone are sufficient. The explanation is performed by a logical *deduction* from the Explanans to the Explanandum. This model of explanation that was originally developed for situations where (strict) deterministic laws are effective, can be extended to situations where statistical laws are considered. In this respect, there is also no difference between natural and social sciences.[19]

The application of this model of explanation within economics can be made clear with a (nearly trivial) example. Let the first fundamental law of demand discussed in *Chapter 3*, according to which an increase in the price of a certain good leads to a reduction in the demanded quantity, be the relevant law. One of the Antecedens conditions is that, because the increase of the mineral oil tax was accepted in the referendum of March 8, 1993, the price of petrol rose in Switzerland by about 0.22 SFr per litre. The conclusion is that this leads to a reduction in the demand for gasoline. With respect to the structure of explanation, there is no difference compared with a physical explanation by which, for example, the behaviour of different bodies and the relations between them are explained.

Disputed is, however, the generality of economic laws. While it is common use to assume that the laws of natural sciences hold always and everywhere, it is often stated that 'economic laws' may hold only under certain constellations or in certain historical epochs.[20] One example might

[19] On the different concepts of explanation in history and also in the social sciences and how they can be traced back to the deductive-nomological or the statistical model of explanation, respectively, see also CARL G. HEMPEL (1962). – The role of laws in economics is also discussed in W. MEYER (1980, pp. 98ff.).

[20] An additional question is how strict the 'laws' of economics can be. According to TERENCE W. HUTCHINSON, it might be better to speak only of 'tendencies': "There are, of course, useful generalizations in economics and the social sciences, which are better described as trends or tendencies, since they are usually not as precise and testable as 'laws' properly so called. Trends, or tendencies, in fact, and not 'laws', are what the material of economics and the social sciences seems mainly to yield, or has yielded so far. ... For, lacking laws, *trends and tendencies are virtually all economists have*, in general empirical terms, and they must make the best of them." (1981), pp. 278f. In this, he follows ALFRED MARSHALL, who speaks of "Statement of tendencies" (1890, p. 27). Similarly, KARL MARX writes about "the law of the tendency of the rate of profit to fall" (1894, p. 207). Contrary to these, JOSEPH A SCHUMPETER does not see any reason to call "our laws" in this way (1908, p. 45).

be the Marxian law of the capitalist accumulation which – trivially – can only hold in capitalist societies. In this sense, one might speak of 'quasi-laws' of the social sciences in contrast to the general laws of the natural sciences.[21] There exist two possibilities to argue against this distinction, which are not necessarily exclusive: First, one might try to formulate the laws considered so generally that they can be applied in very different social situations. This is the strategy of BODO ABEL (1983), who always tries to start from a general (pure) theory of behaviour, which can be applied always and for ever, and in whose framework economics is only just one application. However, laws within the framework of this conception are not what we are usually thinking of if we speak of economic laws, but nomological statements about human behaviour, which are behind the economic laws. Starting point is no longer the economic model of behaviour as described above, but this model itself has to be derived from 'deeper' laws.[22]

Another possibility is to use a structural, instead of a historical, qualification of the corresponding laws.[23] If one observes, for example, that certain 'laws' were only valid in specific historical epochs, one can try to work out the conditions which were necessary for this law to become effective. In this way it also makes sense to understand KARL MARX. He himself might have understood his laws in a way that they do not hold only in certain areas or historical periods, but he intended to present general laws which hold whenever certain structures, in his case capitalist production (and property) structures, are given. Understood in this way, there is no systematic difference between such laws within the social sciences and physical laws; the latter are also only relevant if certain conditions for their application hold. One can in both cases try to derive propositions which are restricted in their application by certain conditions, i.e. which are structurally qualified, from more general propositions, for which less (severe) conditions hold. Then, the structurally qualified propositions can be seen as special cases of the more general ones. Certainly, in the past the natural sciences have been more successful in doing so than the social sciences, and it is to be expected that this will also hold in the future. This is, however, no reason to suppose a systematic difference between both kinds of science.[24]

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[21] See for this H. ALBERT (1973, p. 144ff.).

[22] A similar perspective was taken on by VIKTOR VANBERG (1975) in his concept of a behavioural sociology.

[23] See for this H. ALBERT (1973).

[24] On the structural identity between natural and social sciences, see also U. DRUWE (1987).

8.2 The Independence of the Social Sciences

In spite of the common scientific methods and despite the fact that both kinds of science use the same deductive-nomological model of explanation, there is, however, a really obvious difference between natural sciences, and in particular physics, on the one hand and the social sciences on the other: natural sciences try to explain natural processes, and physics especially processes in nature other than life, whereas the social sciences investigate actions of human beings. Of course, we can observe in both cases how the objects under investigation react to impulses which come from outside; this is a precondition for applying the same model of explanation. However, the connection between the stimuli and the responses takes place in totally different ways. It really does not make sense to speak in physics or in chemistry of decisions, and that the decision-maker considers advantages and disadvantages of the different alternatives in order to finally decide according to the relative advantage. The method of 'situational logic' or 'situational analysis', as KARL R. POPPER denoted it,[25] is just not applicable in natural sciences. If this is, however, an appropriate, perhaps even *the main, method* within (at least important parts of) the social sciences, and it is one of the intentions of this book to show this, then it is justified to speak of an independent method of the social sciences. To use a somewhat different language: The intentions of the individuals play a crucial role for explanations within the social sciences, and there is no correspondence to this in natural sciences.

It might be objected that the intentions themselves should be explained, which could be done in the framework of a more general theory of human behaviour. Then, the difference would vanish.[26] It cannot a priori be excluded that this is possible; this is, however, highly disputed. This holds in

[25] See above *Chapter 2*, Footnote 22.

[26] This is, for example, the intention of VIKTOR VANBERG with his behaviourist concept: "The behaviourist approach tries to answer those questions systematically which leaves the rationalist mode of explanation ... open." (1983, p. 129.) This is also the view of BODO ABEL (1983) and of HANS J. HUMMEL and KARL-DIETER OPP (1971). On the other hand, in particular if one takes this statement of VICTOR VANBERG seriously, there does not have to be an insurmountable difference between these two modes of explanation; the behaviourist might be seen as a compliment to the rational approach. The behaviourist approach might be seen as an attempt to provide explanations for the intentions of the acting individuals, which are presupposed by the rational mode of explanation. Then the question arises whether it is necessary (or at least useful) for a theory of society to answer the question raised by the behaviourist approach in addition to what we can learn from the application of the rational mode.

particular, if this position is combined with 'psychological reductionism', i.e. if it is assumed that social processes can finally be reduced to the connection of psychological processes.[27] As explained above, such an approach, which might finally result in (a modern variant of) behaviourism, could, however, get into severe problems if one tries to integrate strategic behaviour, i.e. actions where the different actors mutually recur to the intentions of their interaction partners. If such a reductionism were possible, it would really reduce human action to human behaviour. It has to be questioned whether such an approach would not exclude essential elements of human behaviour or action, respectively, from the analysis.

Such a reductionism is, however, not necessary. If one accepts the independence of the social science method, the intended purpose can also be reached: the development of a 'positive' social science, oriented by the idea of truth. It cannot only be used to explain social phenomena, but, technologically applied also for practical purposes, and it can provide arguments in normative discourses. The methodological dualism which is postulated here does not lead to the development of a normative science, whatever one likes to understand by this term.[28] Moreover, as shown in *Chapter 2*, this dualism does not generate a new difference between 'human behaviour' and 'human action', nor between 'explanation' and 'understanding', as these differences are overcome by the application of the economic model of behaviour. The distinction between explanatory natural sciences and understanding social sciences, which implicitly rejects the search for general laws in the social sciences, is not comprehended here. Whether one really likes to speak of a methodological dualism or prefers to speak of a monism, depends on the main focus of the arguments. If this is the common deductive-nomological model of explanation and the assumption that general laws hold, one might speak of a monism; if the focus

[27] For a critique of this approach, see KARL R. POPPER (1944/45, III, p. 88). He is not the only one who believes that such a reductionism is impossible. HANS LENK, for example, also writes about "the failure of the psychological reductionism" and that "reductionist programs to get a foundation of the social sciences are no longer very interesting" (1977, p. 44). Contrary to this, HANS J. HUMMEL and KARL-DIETER OPP (1971) believe that psychological reductionism is possible and makes sense. (See also V. VANBERG (1975), pp. 30ff.) It is not easy to find out how far the different views in this debate really contradict each other, because the different participants have rather different interpretations of the term 'psychological reductionism'.

[28] In particular, this dualism is quite different from the one which is demanded by the Constructivists and which is – correctly – rather critically discussed by BODO ABEL (1983).

is on the intentionallity as the criterion to distinguish between natural and social sciences, a methodological dualism arises.

But does this hold in the same way for all social sciences? Can the economic model of behaviour be applied in their whole area, or are there methodological separations between the different social sciences? Is the same model of behaviour applicable not only in economics but also, for example, in psychology? The answer to these questions depends on how narrowly the model is formulated or which aspects are pronounced especially. As shown above, the general model is not only compatible with psychological theories, it is actually also applied in psychology. This is possible without any psychological reductionism. And as shown in addition, traditional history, which is really not suspected of being especially close to economics, also uses this model implicitly. Insofar, however, as the generality of this model is restricted and/or the focus lies on special aspects, the range of its application is reduced.

If the motivational assumption is reduced to self-interest, preferences are assumed to be constant, and changes in the behaviour of individuals are considered as reactions to changes in their environment, then we get those variants of this model which are usually applied in economics. They can, as has been shown, also be used to tackle questions which are (traditionally) ascribed to political science and law. In these cases, the concrete preferences are in most cases of minor importance. The situation is different if a sociologist asks for the 'social' determination of preferences. And the situation is again different if a psychologist investigates the formation and changes of the preferences of a specific individual. If one assumed constant preferences in the latter case, such questions would generally be excluded. Moreover, it might be interesting for sociologists and psychologists to investigate, if, and if so, in what way, restrictions have an influence on preferences.[29] Even such a problem which at first glance transcends the economic model of behaviour, because preferences and restrictions are empirically no longer assumed to be independent of each other, can actually only be tackled on the basis of such a model, because the analytical (logical) distinction between preferences and restrictions has to be made before we can really ask such questions in a meaningful way.

The direction in which this model of behaviour is applied can also be different, depending on the specific question. As long as one is interested in the effects of institutional arrangements or their changes on human behaviour, be it in economics or in any other social science, certain general

[29] The answers to such questions can again be interesting for economists and political scientists, if they discuss, for example, the problem of the effectiveness of (political) advertising mentioned above.

assumptions will be made, the Antecedens conditions will described, and conclusions will be derived. If one wants, however, to explain a single case, one might proceed in the reverse direction. If one knows what really happened, one might ask what the alternatives of a decision-maker were, which information was available to him and what his preferences were, that he finally came to the (known) decision. Thus, the deductive-nomological schema of explanation is reversed.[30] Such a situation is, for example, given for a psychologist who works therapeutically. It is also relevant for a historian, if he intends to reconstruct single historical events.

Even if the economic model of behaviour is accepted as a general model for the social sciences, this does not imply that all social scientists have to apply this model in the same way, as, for example, economists do. The most clearly visible difference might be between economists and psychologists. Thus, it is hardly surprising that in particular psychologists (and psychologically oriented economists) were the ones who discovered the anomalies of the economic model discussed above in *Section 6.1*, which led to fruitful discussions of this model in recent decades.

8.3 Economics and Biology: The Evolutionary Sciences

Even if many, and in particular mathematical, economists saw their ideal in theoretical physics, the relation of economics is traditionally much closer to another natural science: to biology. This holds already for the classics. The most famous example is the influence of THOMAS MALTHUS' (1766 – 1834) population theory on the evolutionary theory of CHARLES DARWIN.[31] This was at first a purely biological theory, which later on, in

[30] This does not mean that the conclusions have the same validity in both directions. The conclusion from the Explanans to the Explanandum is a logically necessary one (if A, then B), while the reversed conclusion shows only one (or several) of (in principle infinite) many possibilities, and additional information is needed to distinguish between these possibilities.

[31] In his introduction to the "The Origin of Species" CHARLES R. DARWIN writes: "This is the doctrine of Malthus, applied to the whole animal and vegetable kingdoms. As many more individuals of each species are born than can possibly survive; and as, consequently, there is a frequently recurring struggle for existence, it follows that any being, if it vary however slightly in any manner profitable to itself, under the complex and sometimes varying conditions of life, will have a better chance of surviving, and thus be *naturally selected*. From the strong principle of inheritance, any selected variety will tend to propagate its new and modified form." (1859, p. 19.) Despite of this remark, JOSEPH A SCHUMPETER is highly sceptical with respect to the real influence of the Mal-

particular by the work of HERBERT SPENCER (1820 – 1903), was transferred as 'Social Darwinism' to the domain of social relations, where, however, it has been intellectually discredited because of its occupation by totalitarian ideologies.[32] Despite this, the idea of a relationship between economics and biology has always been lively in biology, and also in economics. ALFRED MARSHALL (1842 – 1924), who besides LÉON WALRAS was the second major founder of neo-classical economics, denoted economics as "a branch of biology, broadly interpreted" (1890a, p. 637), even though he also saw the relationship to physics and in particular to classical mechanics.

The analogy between economics and biology is obvious. Both investigate evolutionary processes and might, therefore, be called 'evolutionary sciences'.[33] Within biological evolution, in the long-run those species survive, which are best adjusted to the environmental conditions. Changes of these conditions as well as mutations of the organisms make development possible. But only those mutations can survive, which make sure that the new organisms – compared to those which already exist – are at least not

thusian theory: "Darwin himself did not include Malthus' work in the Historical Sketch mentioned above, though he did refer to it in his introduction, and the mere statement that 'more individuals of each species are born than can possibly survive' (which, moreover, is doubtful Malthusianism) is, in itself, not more than a platitude. I am afraid, therefore, that the service rendered by economics to the evolution of the Darwinian doctrine bears some analogy to the service rendered to Rome by the celebrated geese." (1954, p. 446.) A quite different view is, however, presented in L.B. JONES (1989).

[32] See for this J. HIRSHLEIFER (1977, pp. 6ff.). For a critique of Social Darwinism, see also E. TOPITSCH (1963).

[33] The Marxian theory of social and economic development might also be seen as an 'evolutionary theory'. There is, however, an important difference to other evolutionary theories: In other theories it is only a formal criterion, according to which the development is progressing, like the adaptability of individuals or the efficiency of institutions, which implies that the direction of the development is open. In Marxian theory the development is determined: it leads from capitalism necessarily via socialism to communism. – Of course, there are also authors who deny (or have denied) that economics is an evolutionary science. The most famous example is THORSTEIN VEBLEN (1889). On the other hand, he points to the necessity that economics as well as other social sciences, too, have – at least in the long run – to be developed towards evolutionary sciences. (See p. 397.) Moreover, the term 'evolutionary economics' is used today for quite a number of very different approaches, from mathematical models of deterministic chaos up to analyses in the sense of FRIEDRICH A. VON HAYEK. The only common element of these approaches seems to be that they do not want to be seen as 'neo-classical' ones.

worse adjusted to the environmental conditions. There is a permanent struggle or competition between the species in order to survive. The development on competitive markets can be interpreted in a similar way. Continuously, new firms come in and new products are supplied. Those firms which find a demand for their products with prices, which at the minimum avoid losses, can survive. All others will – at least in the long-run – go bankrupt. Moreover, new products drive out old ones of the market. Obviously, an evolutionary process takes place in which only the 'fittest' firms survive. The role, which mutations play in biological processes, is taken over by product and process innovations in economic processes.

This example is so obvious that it became the starting point for ARMEN A. ALCHIAN (1950). His paper re-opened the discussion between economics and biology after the Second World War.[34] His intention was not necessarily to show parallels between both sciences.[35] He wanted to prove that the assumption of profit maximisation is not necessary for the conclusion that in a market system only those firms can survive in the long run, which behave *as if* they maximised profits or which at least make no losses. This would imply that we can employ the assumption of individual profit maximising in our theoretical models, even if this assumption does not hold at the level of the single firm and – because of uncertainty – does not make sense at this level either. Precondition for this is *only* the existence of a rather strict selection mechanism. Even if in such a system the actions of all individuals were distributed purely randomly, only those would succeed, whose actions lead to positive profits. Because we observe only 'surviving firms', we would, independently of their individual motivation, find only firms with non-negative profits.[36] Thus, selection at the aggregate level is substituted for optimising behaviour at the individual level.

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[34] See also S. ENKE (1951), A.A. ALCHIAN (1953), the contra-position of E.T. PENROSE (1952, 1953), the additional contribution of S.G. WINTER (1964), and the summary of the discussion in J. HIRSHLEIFER (1977, pp. 9ff.). Similar considerations as in A.A. ACHIAN (1950) can be found in M. FRIEDMAN (1953).

[35] HENDRIK S. HOUTHAKKER (1956) points to another common feature: division of labour. Contrary to the belief of ADAM SMITH (1776, p. 25), division of labour does not only exist between human beings, but also between animals. Moreover, both sciences are – in the sense described above – oriented towards the ideal example of physics, as both sciences search for general laws and employ the deductive-nomological model of explanation. As, for example, MARY B. WILLIAMS (1982) shows, this led to debates not only in economics, but also in biology.

[36] This is one of the arguments, which has been brought forward to show that the behavioural anomalies discussed above (in *Section 6.1*), have no impact on the aggregate behaviour, at least not in competitive markets.

The question is how far such an argument is valid. A basic precondition is the existence of a strict selection mechanism. Competition, as it works on institutionalised markets, is generally assumed to provide such a mechanism. Thus, the theory of the firm seems to be an excellent example for the application of this idea. However, even in this field, this argument is not totally convincing. As EDITH TILTON PENROSE (1952, 1953) has shown, it can explain why only firms with positive profits remain in the market, but is unable to explain why new firms enter the market. In biology, this is guaranteed by the regenerative behaviour. There is no analogy with this in economics, nor in the theory of the firm, respectively. Thus, we nevertheless need a motivational assumption, be it profit maximising or a weaker variant of it. In other cases, there is not even a (strict) selection mechanism available. This holds, for example, for consumer behaviour. Thus, the theory of consumption cannot be built on such a model. Whether the available selection mechanisms in politics are so strong that according to some (which?) criterion only the 'fittest' politicians survive, might also be questionable.[37] Moreover, the explanatory claim of economic theory will be restricted drastically by such an approach, which employs essentially ex post arguments: We are not only interested in telling that the 'most successful' have survived, but also why those and not others became the most successful. The argument of ARMEN A. ALCHIAN might be correct in many areas, but it would provide sufficient explanations only if all individuals acted in a purely random manner and if nobody tried to adjust his behaviour according to the prevailing selection mechanism.[38] Only then would it be possible to abstain from the analysis of individual actions and the intentions which are behind these actions.

A further objection to the approach of ARMEN A. ALCHIAN comes from the observation that every development of the economic system which proceeded only via 'natural selection' would be extremely slowly and incompatible with what we actually observe. This economic variant of 'Haldane's Dilemma'[39] shows that besides selection there must be an additional

[37] See also R.C.O. MATTHEWS (1984, p. 112f.).

[38] This does not imply that they have to behave optimally in the sense of traditional microeconomic theory; it is sufficient that they are 'boundedly rational' in the sense of HERBERT A. SIMON.

[39] J.B.S. HALDANE (1957) has shown that the following problem exists for natural (biological) evolution: To make the evolution (relatively) fast, the number of mutations must be high. This implies a high number of selective deaths. If the number of deaths within one species is too high, there is the danger that this species will become extinct. Thus, natural evolution will proceed only slowly. This argument is, however, not undisputed. One of the critics is JOHN MAY-

mechanism, i.e. goal oriented behaviour, to explain the actual development. In addition, goal oriented behaviour lowers the social costs of economic development, as it reduces the necessary number of firms which have to drop out of the market.[40] This is an additional reason why economic analysis cannot abstain from the consideration of the intentions which are behind the decisions of the individuals.

On the other hand, the perspective to which this evolutionary approach (again) has pointed is important for economics and, quite generally, for the social sciences. Social systems imply in many cases selection mechanisms which, given specific motivations, may lead to an evolution of such systems. However, the 'progress' which is reached by this evolution does not have any specific ethical quality: The fact that a system is developing in a certain direction does not imply that this development is 'good' or valuable, from a moral point of view.[41] On the other hand, such developments happen. They should be discovered and the attempt is worthwhile to (scientifically) explain them. Starting from such considerations, several institutional approaches have been developed which try to explain not only economic developments, but, what is more difficult and also more demanding, the development of (economic) institutions.[42]

In the forties of the last century, FRIEDRICH A. V. HAYEK started to develop an evolutionary approach which focuses on the rise and survival of institutions.[43] He was not only interested in the question which individuals will permeate under which social conditions, as was the starting point of ARMEN A. ALCHIAN (1950). FRIEDRICH A. V. HAYEK asked in particular which social rules and institutions will survive in the long-run: He developed an evolutionary theory of the development of social systems. But he did not only intend to describe and explain such developments, he also wanted to make value judgements. His basic criterion and final objective was 'individual freedom', seen as "absence of coercion" (1960, p. 11, p. 533), in contrast, for example, to 'political freedom', or to "liberty as

NARD SMITH (1968). – See for this and for the application of this argument in economics also R.C.O. MATTHEWS (1984).

[40] However, at least since JOSEPH A. SCHUMPETER (1939), where he combines business cycle with growth theory, it should be clear that economic development leads necessarily to such costs and the 'destruction' of capital and jobs connected to them. It is not the sheer destruction that is at stake here, but its amount.

[41] This was exactly the misunderstanding on which Social Darwinism was based and which – correctly – discredited it.

[42] See, for example, R.R. NELSON and S.G. WINTER (1982), V. VANBERG (1983) and U. WITT (1987, 1988).

[43] See, for example, F.A. V. HAYEK (1944, 1960, 1973, 1976, 1979).

power" (p. 16), which allows the individuals to do what they want. Individual freedom in this sense exists, for example, in a 'spontaneous order' generated by voluntary exchange relations. Other ethical values are for him only relevant as far as they can be derived from this concept. Thus, within the framework of this approach, there are no conflicting values. As far as other value concepts which are represented in Western democracies like, for example, political participation or social justice, are in conflict with this concept of liberty, they are not considered as valid value concepts and, therefore, explicitly rejected.[44]

As can already be seen from the titles of his books, FRIEDRICH A. V. HAYEK was mainly interested in the question how "*The Constitution of Liberty*" (1960) should look and under which conditions liberal societies would or would not go along "*The Road to Serfdom*" (1944). He located the main danger for a liberal society in the attitude of 'constructivism' or 'constructive rationalism' which he traces back to the ideas of the French philosopher RENÉ DESCARTES (1596 – 1650). This constructivism is accused of assuming that it is (in an extensive manner) possible to deliberately 'construct' social relations.[45] Such constructivism leads, for example, to government interventionism, if it is attempted to realise or at least to strive for a 'more just distribution of income' or, more generally, for 'social justice'. This interventionism, as is typical, for example, for the politics of social democrats (or 'liberals' in the American sense), is, according to FRIEDRICH A. V. HAYEK's view, a danger to the liberal market systems of Western democracies; it threatens to transform these systems into collectivist economic systems, which in the end might result in a threat to democracy and to the culture of the whole Western world.[46]

This approach is evolutionary for two reasons. First, the assumption is made that it is nearly impossible to deliberately design social relations, but that these relations emerge from the actions of single individuals which result in a 'spontaneous order'. Second, as long as the actions of individuals are not restricted by coercion, i.e. as long as individual freedom in his sense prevails, FRIEDRICH A. V. HAYEK assumes that (more) efficient rules

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[44] See, for example, F.A. V. HAYEK (1960, pp. 67ff.). – For a critique of this 'moral monism', see in particular S. GORDON (1981).

[45] See F.A. V. HAYEK (1952, pp. 19f.; 1973, pp. 24ff.).

[46] See F.A. V. HAYEK (1960, pp. 1ff., and also pp. 259f.), where he writes about "the third main ambition that inspires the welfare state: the desire to use the powers of government to ensure a more even or more just distribution of goods." And he concludes: "This is the kind of welfare state that aims at 'social justice' and 'becomes primarily a redistributor of income.' It is bound to lead back to socialism and its coercive and essentially arbitrary methods."

and institutions will (spontaneously) win in the social development, even if the different individuals do not make a conscious decision and also even if they often do not know how advantageous the emerging institutions are. The ruling idea behind this is the emerging of markets. Insofar as a liberal market economy is more efficient than alternative economic systems, in the long run, the liberal system should win in the evolutionary process.[47]

When one distracts from the ideological background which, because of the highly contested concept of liberty used here, is not easy, there are still some major problems connected with this approach. First, there might be an evolutionary development in the 'wrong' direction. This holds at least as long as we take our Western value system as a yardstick. HANS ALBERT (1990) points out that despotism seems to be "the normal form of the government" (p. 253), combined in most cases with mass poverty. "The special European way to an open society" might be "according to all we know traced back to a singular (favourable) constellation of conditions." (p. 256.) Whether this open society will generally win in the long-run, is highly questionable. MANCUR OLSON's (1982) work, mentioned in *Chapter 4*, presents evidence which is not quite compatible with the proposition that modern democratic societies will – in the long-run – develop towards a liberal economic order along the ideas of FRIEDRICH AUGUST V. HAYEK. Even worse, it cannot even be excluded that mankind will extinguish itself by an atomic war. This would be the end of (human) evolution. In what sense this might be an 'efficient' solution shall be open. But even if this worst case does not take place: at the moment, mankind is gradually destroying the natural fundament of its existence. In this process the market economies of Western countries play a central role. One has to forget everything which has been said above about problems of transaction and information costs in order to assume that the major environmental problems could be solved within an evolutionary process in an at least somewhat satisfactory manner without government intervention.[48]

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[47] The political and economic changes, which have taken place in Eastern Europe since the beginning of the nineties, might be interpreted in this way. However, not only the election victories of former communist parties since the mid 1990's have shown that it is highly questionable whether the development in these new states will really be towards a political and economic order in the sense of FRIEDRICH A. V. HAYEK. In the long run, the development might also go more towards a (social democratic) welfare state or, as today in Russia, towards an authoritarian state with rather strong government interventions in economic processes.

[48] It certainly would be unfair to accuse FRIEDRICH A. V. HAYEK that he did not foresee in 1960 today's environmental situation. However, the part about natural resources in "The constitution of Liberty" (pp. 358ff.) does not indicate that

But getting aside these problems, it is also questionable whether a state which, according to the ideas of FRIEDRICH A. V. HAYEK, would – totally or, at least, to a large extent – abstain from income redistribution, would be 'evolutionary stable'. The large income disparity which would result from this might cause the mass of low income earners to terminate the basic consensus which is necessary for the functioning of a modern society.[49] These people might try to bring about a drastic change in the political system. The proposal for a constitution made by FRIEDRICH A. V. HAYEK hardly allows for this in a peaceful way. But why should the (majority of the) people in such a situation restrict themselves to peaceful ways, in particular, if they are not allowed to change the constitution in this manner? From the point of view of the economic model of behaviour, there is hardly any argument supporting this. Of course, it might be attempted to prevent such a change by using police and military forces against the state's own population. But can a political system which depends on this for its stabilisation still be said to safeguard 'freedom' in the sense of 'absence of coercion'? If it is not going to become a totalitarian state, a political order can presumably only survive if it includes a minimum of welfare state regulations, including some redistribution of income.[50] 'Social justice' is certainly not an objective target which can be reached, but it is a 'regulatory idea' and no "mirage", as FRIEDRICH A. V. HAYEK (1976) believes. A minimum amount of its realisation is presumably a precondition for the survival of a liberal social and economic order.

As soon as government interventions are accepted in one political area as purposeful means to influence social relations, it cannot be excluded that this holds in other areas as well. Then, a general refusal of 'constructivism' is no longer tenable. Thus, the problem of a deliberate exertion of influence on social relations is no longer one of a principle, but one which can and has to be answered differently according to the situation considered. In fact, there are numerous possibilities to gain influence, in particular using legal regulations.[51] If this were not the case, the plea for governmental temperance in social politics would hardly be understandable. On the other hand, as already the classical economic tradition tells us, we al-

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he supported an active role of the government with respect to environmental policy.

[49] See for this the investigations of, for example, ALBERTO ALESINA and DANI RODRIK (1994) or ROBERTO PEROTTI (1996) which show that a more unequal income distribution usually goes along with lower economic growth. See also the review of J. ZWEIMÜLLER (2000).

[50] See for this also J.M. BUCHANAN (1975).

[51] See also H. ALBERT (1990).

ways have to take into account unintended side effects. Therefore, as discussed above, not total absence of government regulations, but restrained use of them might be adequate in many policy areas.

Moreover, there is a logical problem if one connects FRIEDRICH A. V. HAYEK's evolutionary perspective with his prescriptions for government behaviour. If one could always be confident that the more efficient institutions win, it would hardly make sense to criticise existing institutions as they passed the 'efficiency test'. In addition, social development should be largely independent of government behaviour; the latter could at best slow down or speed up the development of a society.[52] In fact, FRIEDRICH A. V. HAYEK himself assumes that it is possible to influence this development.[53] However, according to his value system, he gives a negative assessment to the (expected) results of welfare state interventions, and he advises vehemently against such interventions. In a democracy, such an attitude which is based on certain value judgements is to be respected politically. To grant it the status of a scientific statement would, however, imply a confusion of cognitive and normative statements. Such confusion is not intended in the conception of a social science, which is presented here.[54]

So far, with respect to the relation between economics and biology, in the different approaches of evolutionary economics, the single organism has taken up in biology the central place which the single individual has in economics: the unit of analysis. In the last forty years, however, in 'sociobiology' a new paradigm has been developed: the central unit of analysis is the (egoistic) gene.[55] According to this conception, human beings "are sur-

[52] If it is not only a tautology, the assumption that always the most efficient institutions survive leads to a similar dilemma as the Marxian assumption that finally the socialist mode of production will win. For a critique of such historicist conceptions see K.R. POPPER (1944/45).

[53] This might also bring about positive results. He himself assumes that a country which realised his constitutional (according to his own language 'constructivist') proposal would get a "more reasonable government" and a "better functioning economy", which would "secure it such a lead before other democratic countries, that imitators would soon follow." (F.A. V. HAYEK (1977, p. 22.))

[54] For further critiques of FRIEDRICH A. V. HAYEK's conception, see V. VANBERG (1986) and M. PRISCHING (1989).

[55] Surveys of sociobiology are, for example, given by D.P. BARASH (1977), R. DAWKINS (1978, 1982), A. ROSENBERG (1980), E.O. WILSON (1975, 1978) and H. HOLCOMB and J. BYRON (2005); an earlier contribution is W.D. HAMILTON (1964). An overview over possible applications of sociobiological approaches in economics is presented by J. HIRSHLEIFER (1977). More critical discussions can (besides others) be found in A.L. CAPLAN (1978), M. RUSE (1979), A. MONTAGU (1980), P. SINGER (1981) and U. WITT (1985, 2003). Perhaps the

vival machines - robot vehicles blindly programmed to preserve the selfish molecules known as genes."[56] The single gene is in competition with other genes, and in order to survive, it has to adjust to changing environmental conditions. 'Fitness' is the criterion according to which selection happens.[57] This 'behavioural model of genes' can be seen in analogy with the economic model of behaviour and it is compatible with the concept of the methodological individualism which is behind economic theory.[58] Based on this model, "sociobiology is defined as the systematic study of the biological basis of all social behaviour."[59] The aim is to provide a natural science substantiation of all social sciences.[60] Within the framework of this concept, there is an all encompassing 'general economics', which is divided into two parts: 'natural economics', i.e. biology, and 'political economy', i.e. social sciences. The main point of this conception is, "that human economics is not really general economics, but rather the description of economic behavior in one mammalian species with limited range of the biological state variables."[61] And MICHAEL T. GHISELIN who first used this terminology, defends it in the following way: "If it be argued that biology is not wholly an economic discipline, I can only answer that it actually is. All the properties of organisms, without exception, are the result of evolution, and the mechanism of evolution, selection, is nothing more than reproductive competition between members of the same species. Competition is, of course, as fundamental an economic phenomenon as can be imagined." (1978, p. 233).[62]

Similarly as the economic theory of politics transfers the economic approach to the area of traditional political science, sociobiology does this with respect to biology, with the (not minor) difference that the gene takes

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best paper in this respect is (unfortunately unpublished) by SCOTT GORDON (1979).

[56] R. DAWKINS (1976, pp. V).

[57] If the fact is taken into account that there are many genes which determine the genome of a human being, to speak of *the* (egoistic) gene seems to be rather curious. However, this language use is quite common today, and it might be seen as metaphorical.

[58] See for this also M. TIETZEL (1983, pp. 114ff.). (1975 p. 4).

[59] E.O. WILSON (1975 p. 4).

[60] Thus, the aim is much more ambitious than the 'behavioural foundation' of the economic model of behaviour discussed above; it goes a – very important – step further.

[61] E.O. WILSON (1977, p. 136). – Consequently, GEORGE OSTER and EDWARD O. WILSON (1978) applied this approach to a society of insects; they have developed an 'economics of insects'.

[62] See also M.T. GHISELIN (1974, p. 1ff.) and J. HIRSHLEIFER (1978).

on the place of the individual. One might see this as an additional step of economic imperialism. MICHAEL T. GHISELIN, for example, tries explicitly "to show the advantages to biology of thinking like an economist." (1974, p. 11.) The economic approach is employed to investigate not only human behaviour, but the behaviour of all living beings. However, there is a major difference between the economic imperialism within the social sciences and this new imperialism: Within the social sciences first of all and still dominating today, economists tried to apply their approach in 'foreign' areas, whereas in sociobiology almost exclusively biologists are those who (believe to) have discovered the advantages of the economic approach for analysing their own (traditional) field. Economists did not play a relevant part in this business. The situation is even reversed: It was the sociobiologists who undertook "a deeper and more courageous examination of human nature that combines the findings of biology with those of the social sciences."[63] Thus, a 'biological imperialism' emerges, which claims to encompass not only economics, but all (social) sciences which deal with human behaviour. They have to fear for their independence, when EDWARD O. WILSON states: "By a judicious extension of the methods and ideas of neurobiology, ethology, and sociobiology a proper foundation can be laid for the social sciences, and the discontinuity still separating the natural sciences on the one side and the social sciences and humanities on the other might be erased." Intentions no longer play a distinctive role because in this perspective, the mind, i.e. the place where intentions are created, "will be more precisely explained as an epiphenomenon of the neuronal machinery of the brain." (1978, p. 195.)[64]

The publication of the textbook by EDWARD O. WILSON (1975) has provoked a lively debate in the Anglo-Saxon countries.[65] This discussion

[63] E.O. WILSON (1978, p. 185).

[64] This imperialism is not limited to the social sciences, but threatens also ethics. And not only the question shall be answered why certain norms are accepted in certain societies, as the approach of FRIEDRICH A. V. HAYEK (1976, 1977) discussed above intends, but biological justifications for new norms shall be provided. At least according to the view of EDWARD O. WILSON, the acceptance of the results of sociobiology "will fashion a biology of ethics, which will make possible the selection of a more deeply understood and enduring code of moral values." (1978, p. 196.). – For a critical discussion of this ethical claim, see P. SINGER (1981).

[65] See in particular the contributions in A.L. CAPLAN (1978), but also those in A. MONTAGU (1980) and in G.W. BARLOW and J. SILVERBERG (1980), and the summary of the discussion in S. GORDON (1979). There was no comparable discussion in the German speaking countries, even though some books, like

was only partly purely factual; it was partly highly emotional and weighed with ideological and political reservations. Sociobiology has been accused of being a version of 'biological determinism', and such theories "provided an important basis for the enactment of sterilization laws and restrictive immigration laws by the United States between 1910 and 1930, and also for the eugenics policies which led to the establishment of gas chambers in Nazi Germany."[66] Such accusations have been raised even though EDWARD O. WILSON on many occasions explicitly wrote that he rejects every (pure) biological determinism. The main accusation is, however, that sociobiology is intended to or might at least be used to justify the social status quo: "Wilson joins the long parade of biological determinists whose work has served to buttress the institutions of their society by exonerating them from responsibility for social problems."[67] Thus, it is mainly a political accusation which is raised against sociobiology, even if it is underpinned by scientific arguments.

Generally, the question of the validity of a scientific theory has to be decided independently of the political view of its author(s) and/or its critics, and also independently of its possible usage.[68] This holds for theories in the social as well as in the natural sciences. The only criterion should be whether they are 'proved' in tests against reality. However, in particular in the case of sociobiology of man, it is extremely difficult, if not impossible, to perform such tests. Experiments with human beings, similar to those, which are used with animals, are nearly totally excluded for (at least widely accepted) moral reasons.[69] Thus, direct evidence for the hypotheses of sociobiology is hard to obtain. Rather, an attempt is made to derive indirect evidence. If, for example, all mammals or primates show a specific social behaviour which, as far as we know from empirical (experimental) evidence, is innate, i.e. genetically determined, and if human beings show the same or at least very similar modes of behaviour, then there exists at least some evidence that these modes of behaviour are, also with respect to human beings, genetically co-determined. Of course, this is no strong proof, but a stronger test can in many cases not be performed for ethical

D.P. BARASH (1977), R. DAWKINS (1976) and E.O. WILSON (1978) were published in German translations.

66 E. ALLEN et al. (1975, p. 260).

67 Ibid., p. 264.

68 This does not imply, however, that the question whether a certain theory shall be developed at all should be decided independently of its possible future usage. On the other hand, in a free society (and because of international competition), it is hardly possible to suppress the development of a theory in the long run.

69 See for this also S.J. GOULD (1976, p. 345; 1980).

reasons. Thus, the advocates of sociobiology often have a good deal of empirical evidence in favour of their hypotheses, while the opponents can in most cases point out that this evidence is not necessarily conclusive. In such a situation, it seems natural that mainly political convictions determine which view is supported by different people. This holds in particular when the objects of the debate are human characteristics or social relations like aggression, hostility against strangers or, what is besides the origin of altruism one of the central topics of sociobiology, genetic influence on the distribution of the roles between the human sexes.[70]

This does not mean that there is no (at least rather certain) empirical evidence in favour of (at least) some hypotheses of sociobiology or that it would not be falsifiable at all.[71] However, even if most of these hypotheses were true, this would hardly change anything with respect to the social problems of human beings. One should not step into the 'naturalistic fallacy' that modes of behaviour and/or social relations, because they exist or because they are genetically (co-)determined, are justified from an ethical point of view.[72] According to the principle mentioned above, "ultra posse nemo obligatur", one might try to draw such a conclusion at best if such behaviour were totally genetically determined. No sociobiologist, however, believes today in such a determinism; most of them, like, for example, EDWARD O. WILSON (1976, p. 292), reject it explicitly. But if there is no total determination by the genetic structure, then (positive) sociobiological knowledge cannot be used to justify any social conditions or relations.[73]

If economists look at this debate, they should try to consider the political arguments as political, and they should, as far as possible, try to ask themselves in an unbiased manner where the application of the sociobiological approach might be fruitful in economics or, more generally, in social sciences. It might be applied to explain the formation of preferences,

[70] See in particular M.T. GHISELIN (1974).

[71] See for this M. RUSE (1978).

[72] Just as little as one should step into the 'ideological fallacy' and assume that social conditions can be realised because they are – according to one's own value system – desirable or morally justified. As we have known at least since DAVID HUME, neither from positive to normative nor from normative to positive statements are such conclusions possible. See for this also B.D. DAVIS (1976, p. 318).

[73] The fear that this might be tried nevertheless and perhaps with political success, and that this would drive in a certain direction, for example, to justify the suppression of women, is, however, not unfounded, if one takes into account previous experience with Social Darwinism. (See for this also G. JONES (1980).) Insofar, the 'political' critics of sociobiology can be understood.

as they might partly be determined genetically. In this way, HEINRICH W. URSPRUNG sees "the most important contribution economics can expect from sociobiology" in "an evolutionary theory of preference formation" (1988, p. 277). Similarly, applying this approach, it is attempted to explain altruism, which admittedly creates problems within the economic model of behaviour.[74] The question is, however, whether such considerations can be helpful to solve specific problems of social sciences. As long as preferences are genetically determined, they are – at least with respect to the usual time horizon of economic analysis – fixed. Thus, we can use the assumption of constant preferences without any problem. However, preferences are not only genetically, but also culturally determined, and the latter influence might be by far the more important one. Thus, they can change over time, and they are different between people. In fact, the changes of preferences we can observe in the course of human development and the differences between the preferences of people living in different cultures and societies, are so large that they cannot be explained by biological adaptation to a changed environment, taking into account that this can happen only very slowly. Thus, whenever the problem of preference formation and change becomes relevant within the framework of the economic model of behaviour, the sociobiological approach does not help. It might at best indicate some limits of manageability of preferences, but it is questionable whether even this is possible.

However, it is not necessary that the results of sociobiology can be transferred directly into the social sciences; one might be satisfied with analogies, which result from the common evolutionary structure. Such analogies might be helpful. They might, however, lead us totally astray, too. ULRICH WITT (1985, p. 381) has pointed to an interesting and relevant example. One of the most important principles of biological evolution is that the better adjusted ('fitter') individuals or species reproduce themselves more than the less adjusted ones, so that the less adjusted are driven out in time. If one would like to transfer this principle from biological to economic evolution, one might assume that the economically more suc-

[74] See for this, for example, R.L. TRIVERS (1971), D.T. CAMPBELL (1972), E.O. WILSON (1975, pp.106ff.), D.P. BARASH (1976, pp. 76ff.), in particular R. DAWKINS (1976), and in much more detail S.A. BOORMAN and P.R. LEVITT (1980). According to EDWARD O. WILSON, this is "the central theoretical problem of sociobiology: how can altruism, which by definition reduces personal fitness, possibly evolve by natural selection?" (1975 p. 3.) This question dates back (at least) to CH. DARWIN (1859), it can be found in J.B.S. HALDANE (1932), and the major breakthrough in this research was reached by W.D. HAMILTON (1964). On the critical discussion of this approach, see also E. FEHR and U. FISCHBACHER (2003) as well as E. FEHR and J. HENRICH (2005).

cessful individuals reproduce more, too. If one of the usual measures of economic success is employed, like income or social status, just the opposite happens: the more successful an individual is, the lower is – ceteris paribus – his reproduction rate. This holds in particular for modern industrial societies.[75] And this does not only hold at the individual level but also for societies as a whole: The higher average income per capita in a country, the lower is – again ceteris paribus – the growth rate of its population. In this respect, the development of social evolution is quite contrary to the one of biological evolution. And this course of economic development can well be explained by economic theory.

Moreover, the special claim of objectivity connected with sociobiology, cannot be maintained either. EDWARD O. WILSON starts his chapter about man: "Let us now consider man in the free spirit of natural history, as though we were zoologists from another planet completing a catalogue of social species on Earth. In this macroscopic view the humanities and social sciences shrink to specialised branches of biology; history, biography, and fiction are the research protocols of human ethology; and anthropology and sociology together constitute the sociobiology of a single primate species." (1975, p. 547.) Compared to (traditional) social sciences, the shift of the perspective which is attempted depends, if to be successful, on the validity of two implicit assumptions. First it is assumed that we could see ourselves in the same way as beings from another planet would see us. As human beings we are, however, always bound to our (human) perception capabilities; we cannot imagine how intelligent beings from another planet would see us.[76] Second, it is assumed that such beings could see us more 'objectively' than we see ourselves. This claim connected with this 'outside-perspective' is often also raised by anthropologists. More than forty years ago, KARL R. POPPER already wrote "that it can be fascinating and significant for us Europeans to see ourselves, for a change, through the spectacles of the social anthropologist. But although these spectacles are perhaps more coloured than others, they hardly are, for this reason, more objective. The anthropologist is not the observer from Mars which he so often believes himself to be and whose social role he often attempts to play (and not without gusto); quite apart from the fact that there is no reason to suppose that an inhabitant of Mars would see us more 'objectively' than we, for instance, see ourselves." (1962, p. 92). What KARL R. POPPER said about anthropologists holds for sociobiologists as well. Thus, neither assumption holds. Therefore, it is not to be expected that sociobiology would ever lead to a generally new orientation of the social sciences or even to a

[75] See, for example, K.F. ZIMMERMANN (1984).
[76] See, for example, H. ALBERT (1987).

'super social science', as the terminology of MICHAEL T. GHISELIN (1978) at least suggests. Sociobiology might provide some new insights for the social sciences; it will hardly ever change it basically.

Incidentally, all that has been said above against a behaviourist reductionism holds even more strongly against the natural science reductionism which is implied in the sociobiological programme. Intentional action, as it is in the centre of the economic model of behaviour, cannot be explained. Thus, the independence of the social sciences cannot be abolished by this natural science, and, in addition, it is highly questionable whether sociobiology can make any contribution to solve problems as tackled by the social sciences, which demands more than the idea of evolution already contained in traditional biology. Sociobiology might perhaps "curb our expectations and explain why in many cases our demands on social and behavioral scientists and 'engineers' have not been satisfied", as ALEXANDER ROSENBERG (1980, p. 177) hopes. But this is not more than a hope because, as SCOTT GORDON remarks, so far "no sociobiologist has yet been able to advance a superior explanation of any social problem of the sort that economists and other social scientists regard as lying within their territory." (1980, p. 244.) Today, this still holds. Thus, it is to be expected that things are going as RONALD H. COASE suspects: "The danger is that dabbling in sociobiology may prove to be more attractive to many economists than the use of sociobiological findings to improve our economics." (1978, p. 245.) Therefore, it still makes sense to follow the recommendation of EDITH TILTON PENROSE given more than fifty years ago: "But in seeking the fundamental explanations of economic and social phenomena in human affairs the economist, and the social scientist in general, would be well advised to attack his problems directly and in their own terms rather than indirectly by imposing sweeping biological models upon them." (1952, p. 819.)[77]

[77] This is, of course, no argument against the approach of Neuroeconomics mentioned in *Chapter 2*. There, researchers do not simply use analogies, but develop hypotheses which they can test empirically. Contrary to sociobiology, in some areas, this approach gave rise to new explanations which are superior to those of the traditional economic approach. On the relevance of neuroeconomics see also the contributions in *Analyse und Kritik* 29 (2007), issue 2.

9 Concluding Remarks: Economic versus Sociological Approaches in the Social Sciences

After a short explanation of what Economics as a positive science can and should achieve, first the model of individual behaviour was presented, as it is the basis not only of modern Economics but also of many 'individualistic' approaches in other social sciences. In this model, we differentiate between the preferences of an individual on the one hand and the leeway he has for his actions on the other. It is supposed that the individual judges the different alternatives for action, as far as they are known to him, according to their costs and benefits, and that he finally chooses the relatively most beneficial alternative, i.e. the one with the highest expected net benefit. Human action in this model is understood as a rational choice between alternatives or as utility maximisation under constraints, respectively.

In this process, one needs to keep in mind that the individual has to make his choice under incomplete information; he knows only part of his alternatives, and he knows only part of the consequences that will occur if he chooses one of these alternatives. Thus, he will often use behavioural rules, but he will do so in a rational manner: he will react to known changes of his action leeway in a (predictable) systematic manner. In most cases, he will consider only his own preferences: he is self-interested. Altruistic behaviour is the exception. Social interactions, i.e. actions which include more than one individual, are seen as 'exchange' in the framework of this model.

The basic concept of this model is one of individual behaviour, although its main purpose is not the explanation of the behaviour of single individuals, but the explanation of the 'typical' (average) behaviour of individuals and, therefore, of its social results. 'Collective behaviour' is explained as the result of individual actions, although in almost all cases these individuals are not isolated, but are in mutual relations with other individuals. Collective actors who are different subjects and whose interests are independent of the acting individuals are not compatible with this model. Moreover, if the behaviour of individuals is investigated, it is always to be taken into account that, as a rule, there are unintended social side effects connected

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with this behaviour. In most cases, these side effects and not the intended consequences of the actions are the focus of the analysis.

This model of rational behaviour was first applied in Economics, in Micro- as well as in macroeconomics. During recent decades, both areas have been further developed quite substantially. In macroeconomics, for example, the fact that agents always have only limited information and that this information is, in addition, often unequally distributed, has been taken into account more seriously, as well as the institutional conditions under which economic actions take place. In macroeconomics, on the other hand, the main focus was on its micro-foundation. Today, economists attempt to derive the relations between economic aggregates, which are still the object of macroeconomic analysis, from the actions of rational individuals. In doing so, the problem of expectation formation plays a central role in most cases.

For non-economists it should be especially interesting as to how this model can be applied outside of Economics, in other social sciences, like Political Science or Law. The 'Economic Theory of Politics' analyses, besides other areas, the behaviour of voters, politicians and bureaucrats, and it investigates the conditions for successful organisation and political influence of interest groups. The 'Economic Analysis of Law' considers the social results of legal regulations, for example, of laws to protect the natural environment. These are – in most cases – not specifically 'economic' questions; the only 'economic' aspect of these approaches is the application of the economic model of behaviour, i.e. the individual model of rational behaviour. Political Science and Law are, moreover, not the only social sciences in which this model can be applied; the range of its application is all of human behaviour and, within this range, its application is principally unlimited. Thus, there exists, for example, also an individualistic approach to sociology.

If this model is applied, changes of the behaviour of people are explained by changes of the restrictions, i.e. their leeway of action. Such changes provide incentives to which the individuals react in a systematic (predictable) manner. Problems in the application of this approach arise whenever in 'low-cost situations' no strong incentives are available which might have an impact on the individuals' behaviour. In such situations 'soft incentives' like moral norms can play a similar role as strong (financial) incentives in typically economic situations. There is in fact some evidence that such moral rules play an important role for politically and socially relevant decisions.

That no strong incentives are available to govern the behaviour of individuals is, however, only one of several problems which arise if the economic model of behaviour is applied. Such problems arise already from

the fact that even a general approach to explain human behaviour cannot be all-embracing, but that always only certain aspects can be considered. Moreover, every scientific theory is surrounded by anomalies, and this holds, as a series of psychological papers have shown during recent decades, for the economic model of behaviour as well. On the other hand, these anomalies provide no sufficient reason to dismiss this model, at least as long as no better alternative is available.

The economic approach finally aims at (political) application: If it is known how individuals react (on average) to a change of the conditions under which they act, and if one can influence these conditions, it is possible to indirectly influence their actions. This makes policy possible, not only in the field of Economics, but in many other fields, too, like the natural environment, health or education. However, one should be rather cautious not to overstate the manageability of social conditions. In many cases the citizens will try to evade the impact of political measures; they behave differently than desired and/or expected (for example, by the legislator). This does not mean that it would be impossible or completely unnecessary to influence social conditions; the world in which we live is neither the only nor the best of all possible worlds. This also holds if there is a market economy and the political order is democratic. Economics as a positive science justifies in this respect neither exaggerated optimism nor exaggerated pessimism.

The economic approach to the social sciences is a positive, explanatory one, which does not contain any value judgements. It strives for cognitive statements; the main question is how individuals behave under which conditions. On the other hand, using the results of this approach, the 'normative' discussion can be enriched as well. It can be shown, for example, which consequences are to be expected if a specific measure is applied in order to solve a conflict. Or arguments can be provided as to which tasks should be assigned to the government in democratic societies and what should remain in the private sphere. Of course, such arguments can only provide some assistance: the corresponding decisions have to be taken (and the responsibility has to be accepted) by the legitimate political decision makers.

The approach presented here, which is based on methodological individualism, stems from (traditional) Economics, but it transcends its limits towards the unity of the social sciences. Human beings are seen as autonomously acting subjects. They do not behave systematically differently with respect to political, legal, and economic problems. Within the framework of this concept, the distinction between 'action' and 'behaviour' is overcome as well as the distinction between 'explanation' and 'understanding': human behaviour results from rational actions of individuals,

and we can only explain this behaviour if we understand their actions, i.e. if we are able to reconstruct these actions from the intentions of the individuals and the restrictions they have been confronted with. This approach has in common with the natural sciences, especially with physics, the search for nomological laws; with biology it shares, in addition, the idea of evolution: individuals adjust to altered environmental conditions according to their objectives (preferences) in a systematic manner. On the other hand, the distinction from the natural sciences refers to the role of intentions in the economic approach: human beings can deliberately set themselves goals and adjust their actions in order to reach them.

During recent decades, Economics has left its traditional area, the economy, more and more and has been applied to other social sciences. Such applications, which by the neighbouring social science concerned are in most cases considered as 'imperialism', can be justified if in this way results can be obtained which could not be derived using the traditional approaches in these social sciences. This often really happens to be the case. Sometimes, however, the 'theoretical' achievement in applying the economic model of behaviour in 'unconventional' areas consists (nearly) exclusively of coercing banal matters into a scientific jargon, in this case an economic one.[1] Such a 'language game' is, of course, always possible, but it does not necessarily make much sense. In many cases, these theories lose their empirical content. Economic theory should not emulate such tendencies which are, admittedly, not so unusual in (German) sociology.[2]

On the other hand, there is a very useful competition between the economic approach and the 'sociological method', if one thinks of the latter as the concept of EMILE DURKHEIM (1895). The basic principle of the economic approach (of methodological individualism) is to explain social facts by (rational) actions of individuals. Contrary to this, EMILE DURKHEIM proposes the following principle: "*The determining cause of a social fact should be sought among the social facts preceding it and not among the states of individual consciousness*." (1895, p. 110.) RÉNE KÖNIG comments on this: "This is the rule which we have often already mentioned with the formula 'to explain social facts only by social facts'. This is not only in the shortest formula the essence of DURKHEIM'S efforts in his 'Rules' and the rest of his work, but it is also the principle of modern scientific sociology." (1961, p.71.) EMILE DURKHEIM strengthens this posi-

[1] See, for example, the economic theory of suicide by D.S. HAMERMESH and N.M. SOSS (1974). For a critique of this theory with such an argument, see M. PRISCHING (1983).

[2] For a critique of the scientific language of (German) sociological theory of society, see F. KAMBARTEL (1976, pp. 62ff.).

tion by writing: "Consequently, every time that a social phenomenon is directly explained by a psychological phenomenon, we may be sure that the explanation is false" (p. 104), because: "A purely psychological explanation of social facts cannot fail, therefore, to allow all that is characteristic (i.e., social) in them to escape." (p. 107.)[3] If one substitutes in these passages 'psychological' by 'individualistic', which should be permitted without changing the original meaning of EMILE DURKHEIM, it is hardly possible to pronounce more clearly the difference between the 'economic approach' and the 'sociological approach' within the social sciences. Both concepts or 'paradigms', to use the language of THOMAS S. KUHN (1962), are in competition as to which one provides the 'better' explanations of social facts.

There might be some doubt, however, whether this difference is really as large as it might seem. At least, there are some good reasons for the difference being much less significant. RÉNE KÖNIG, for example, points to the fact that whenever EMILE DURKHEIM is polemic against psychology (and, therefore, implicitly also against methodological individualism), he thinks of an "atomistic psychology" which considers human beings as single (isolated) beings, while on the other hand he often refers to social psychology.[4] In addition, it does not cause great problems to 'individualistically reconstruct' the perhaps most important applied sociological work of EMILE DURKHEIM, his "*Suicide*" (1897), without losing anything.[5] EMILE DURKHEIM can also be understood in the following way: Whenever he ar-

[3] A similar, if not the same, position is taken by historical materialism. This is also a 'sociological' approach in the sense of EMILE DURKHEIM. LEZEK KOLAKOWSKI describes its position with respect to this problem in the following way: "All human acts are governed by specific intentions – personal feelings or private interests, religious ideals or concern for the public welfare. But the result of all theses multifarious acts does not reflect the intentions of any one person; it is subject to a kind of statistical regularity, which can be traced in the evolution of large social units but does not tell us what happens to their components as individuals. Historical materialism does not state that personal motives are necessarily perverse or selfish; it is not concerned with such motives at all, and does not attempt to predict individual behaviour. It is only concerned with mass phenomena which are not consciously willed by anyone but which obey social laws that are as regular and impersonal as the laws of physical nature." (1976, p. 341.)

[4] See R. KÖNIG (1961, pp. 36f.). – For the view of EMILE DURKHEIM, see also G. HARTFIEL (1968, pp. 226ff.) and B. ABEL (1983).

[5] The same holds for many Marxian approaches. They can (at least partly) be individually reconstructed as well. MICHIO MORISHIMA (1973) does this, for example, with Marxian Political Economy.

gues that the intentions of the individuals are not relevant for the investigation of social processes, he wants to make clear that the social processes result (mainly) from non-intended side effects of individual actions. This interpretation comes, however, very close to the idea of the 'invisible hand' of ADAM SMITH.

Moreover, the economic approach comes much closer to the intentions of EMILE DURKHEIM than it might seem at first glance. Recurring on the intentions does in no way imply the claim that the social result is in line with these intentions. The intentions are important for the way in which the individuals act. The social result depends on these actions; it does, however, not have to be intended, and in fact, it is very often not intended at all. Moreover, especially within the framework of the economic approach, the restrictions are much more important for the explanation of human behaviour than the intentions. As mentioned above, the main impetus is to explain changes in the behaviour by changes in the restrictions. Thus, an economic explanation is never a 'purely psychological explanation' in the sense of EMILE DURKHEIM. This is very obvious in macroeconomics. If we discuss, for example, the relation between consumption and income, individual entities do not play any role: we are interested in the relationship between aggregates. There the maxim of EMILE DURKHEIM, to explain social facts by social facts, is certainly followed.[6]

If there is a difference between both approaches, it might be a question of whether the relations between social facts demand an individualistic foundation for their explanation, a foundation which derives the macro relations from rational actions of the respective individuals. As mentioned in *Chapter 3*, whether such a micro-basis is necessary has also been debated in economics. At the beginning of the seventies of the last century, there were still quite a number of economists who believed that it is possible and sensible to develop macro-theories without a micro-foundation.[7] Such macroeconomic theories were, if one likes to use this term, sociological theories in the sense of EMILE DURKHEIM. The failure of these approaches, once practically applied to support economic policy decisions, has changed, however, the opinion of (nearly) all macroeconomists. Today, it is generally believed that a micro-foundation of macroeconomics is useful, if not necessary, whenever one wants to establish more than statistical rela-

[6] It is interesting to note that exactly this has often been criticised when, for example, it has been pointed out that psychological factors play an essential role for consumption and investment decisions. See, for example, J.S. DUESENBERRY (1949), or G. KATONA (1951, 1960, 1975).

[7] This view is, at least implicitly, also held by SPIRO J. LATSIS (1983).

tions which disappear as soon as one tries to exploit them for economic policy purposes.

The experiences made in developing macroeconomics are rather unambiguous. We can learn from them and accept that it makes sense to develop macro-theories (only) with a micro-basis in other social sciences too. Moreover, one has to give up a good deal, if one tries to work without such a micro-basis. It no longer makes sense to speak of 'understanding' actions if one does not recur to the intentions, and speaking of 'actions' also becomes difficult. Strictly speaking, without a micro-basis it is only possible to explain 'behaviour'. This might be totally sufficient for somebody who is interested only in the relationships between macro aggregates. Thus, the arguments for the use of a micro-basis are not fully coercive. Macro-theories which do not have such a foundation are not only possible, but they still find enough supporters, as the examples of functionalism and of LUHMANN's system theory show.[8] Insofar, sociological approaches in the sense of Emile Durkheim are still quite common within the social sciences and are rather the rule within sociology itself.

On the other hand, the sociological approach is increasingly challenged by its economic alternative. And this economic approach has within the (other) social sciences certainly not yet reached its limits. All those scientists who are sceptical or even refuse it, can only be invited to attempt to explore its limits. A refusal simply for ideological reasons is not sufficient. Which of the two approaches will finally survive in the social sciences remains to be seen. If one believes KARL R. POPPER (1935) or IMRE LAKATOS (1970), the 'better' approach will win. If somebody follows more PAUL K. FEYERABEND (1975), he might expect that the approach with better advertising will succeed. In any case, to go back once again to MAX PLANCK (1933) and THOMAS S. KUHN (1962), if (only) one of these approaches survives in the long-run, the reason for that will be not so much because the proponents of the other approach have been convinced and converted, but rather because they will have died out. It is more plausible, however, that both approaches will still find proponents and, therefore, will be retained in the future as mutually critical correctives.

[8] It might be disregarded for the moment how far these approaches are really theories (in a stricter sense) including nomological statements or whether they are (mainly) classification schemes and/or language games.

References[1]

B. ABEL (1983), *Grundlagen der Erklärung menschlichen Handelns*, Mohr (Siebeck), Tübingen 1983.

S.K. ABEREGG, E.F. HAPONIK and P.B. TERRY (2005), Omission Bias and Decision Making in Pulmonary and Critical Care Medicine, *CHEST* 128 (2005), pp. 1497 – 1505. (http://www.chestjournal.org/cgi/reprint/128/3/1497 (27/12/06))

B.A. ABRAMS and M.D. SCHMITZ (1978), The 'Crowding Out' Effect of Governmental Transfers on Private Charitable Contributions, *Public Choice* 33 (1978), pp. 29 – 39.

B.A. ABRAMS and M.D. SCHMITZ (1984), The Crowding Out Effect of Government Transfers on Private Charitable Contributions, Cross-Section Evidence, *National Tax Journal* 37 (1984), pp. 563 – 568.

M. ADAMS (1985), *Ökonomische Analyse der Gefährdungs- und Verschuldenshaftung*, R. v. Decker, Heidelberg 1985.

M. ADAMS (1989), Das 'Verursacherprinzip' als Leerformel, *Juristenzeitung* 44 (1989, pp. 787 – 789.

T.W. ADORNO et al. (1969), *Der Positivismusstreit in der deutschen Soziologie*, Luchterhand, Neuwied 1969; English translation: *The Positivist Dispute in German Sociology*, Harper Torchbooks, New York 1976.

G.A. AKERLOF (1970), The Market for Lemons, Quality Uncertainty and the Market Mechanism, *Quarterly Journal of Economics* 84 (1970), pp. 488 – 500.

G.A. AKERLOF and W.T. DICKENS (1982), The Economic Consequences of Cognitive Dissonance, *American Economic Review* 72 (1982), pp. 307 – 319.

G.A. AKERLOF and J YELLEN (1986), Efficiency Wage Models of the Labor Market, Cambridge University Press, Cambridge et al. 1986.

H. ALBERT (1953), Der Trugschluss in der Lehre vom Güter-Maximum, *Zeitschrift für Nationalökonomie* 14 (1953/54), pp. 90 – 103.

H. ALBERT (1956), Werturteil und Wertbasis: Das Werturteilsproblem im Lichte der logischen Analyse, *Journal of Institutional and Theoretical Economics* 112 (1956), pp. 410 – 439.

[1] The number in parentheses behind the name(s) of the author(s) is the year of the first publication; wherever we refer to a later edition, this year is given separately.

H. ALBERT (1960), Wissenschaft und Politik, Zum Problem der Anwendbarkeit einer wertfreien Sozialwissenschaft, in: E. TOPITSCH (ed.), *Probleme der Wissenschaftstheorie, Festschrift für Viktor Kraft*, Springer, Wien 1960. pp. 201 – 439.

H. ALBERT (1961), Reine Theorie und politische Ökonomie: Die Problematik der ökonomischen Perspektive, *Journal of Institutional and Theoretical Economics* 117 (1961), pp. 438 – 467.

H. ALBERT (1963), Wertfreiheit als methodisches Prinzip, in: E. V. BECKERATH, H. GIERSCH and H. LAMPERT (eds.), *Probleme der normativen Ökonomik und der wirtschaftspolitischen Beratung*, Duncker und Humblot, Berlin (1963), pp. 32 – 63.

H. ALBERT (1963a), Modell-Platonismus: Der neoklassische Stil des ökonomischen Denkens in kritischer Beleuchtung, in: F. KARRENBERG and H. ALBERT (eds.), *Sozialwissenschaft und Gesellschaftsgestaltung, Festschrift für Gerhard Weisser*, Duncker und Humblot, Berlin 1963, pp. 45 – 76.

H. ALBERT (1964), Nationalökonomie und Sozialphilosophie: Zur Kritik des Normativismus in den Sozialwissenschaften, in: *The Critical Approach to Science and Philosophy*, New York 1964, pp. 385 – 409.

H. ALBERT (1967), *Marktsoziologie und Entscheidungslogik*, Luchterhand, Neuwied/ Berlin 1967. (New edition: Mohr (Siebeck), Tübingen 1998.)

H. ALBERT (1968), *Traktat über kritische Vernunft*, Mohr (Siebeck), Tübingen 1968; English translation: *Treatise on Critical Reason*, Princeton University Press, Princeton 1985.

H. ALBERT (1973), Der Gesetzesbegriff im ökonomischen Denken, in: H.K. SCHNEIDER and C. WATRIN (eds.), *Macht und ökonomisches Gesetz*, Duncker und Humblot, Berlin 1973, pp. 129 – 162.

H. ALBERT (1977), Individuelles Handeln und soziale Steuerung, Die ökonomische Tradition und ihr Erkenntnisprogramm, in: H. LENK (ed.), *Handlungstheorien interdisziplinär*, Vol. IV, Wilhelm Fink Verlag, München 1977, pp. 177 – 225.

H. ALBERT (1978), Die Einheit der Sozialwissenschaften, in: F.-J. KAISER (ed.), *Die Stellung der Ökonomie im Spannungsfeld sozialwissenschaftlicher Disziplinen*, Verlag Julius Klinkhardt, Bad Heilbrunn 1978, pp. 39 – 66.

H. ALBERT (1978a), Nationalökonomie als sozialwissenschaftliches Erkenntnisprogramm, in: H. ALBERT et al., *Ökonometrische Modelle und sozialwissenschaftliche Erkenntnisprogramme*, Bibliographisches Institut – Wissenschaftsverlag, Zürich 1978, pp. 49 – 71.

H. ALBERT (1978b), *Traktat über rationale Praxis*, Mohr (Siebeck), Tübingen 1978.

H. ALBERT (1985), Modell-Denken und historische Wirklichkeit: Zur Frage des logischen Charakters der theoretischen Ökonomie, in: H. ALBERT (ed.), *Ökonomisches Denken und soziale Ordnung*, Mohr (Siebeck), Tübingen 1984, pp. 39 – 61.

H. ALBERT (1986), Anmerkungen zum ökonomischen Denken, *Konstanzer Blätter für Hochschulfragen* 23 (1986), pp. 6 – 17.

H. ALBERT (1987), *Kritik der reinen Erkenntnislehre*, Mohr (Siebeck), Tübingen 1987.

H. ALBERT (1990), Die Verfassung der Freiheit, Bedingungen der Möglichkeit sozialer Ordnung, in: O. MARQUARD (ed.), *Einheit und Vielheit*, Felix Meiner Verlag, Hamburg 1990, pp. 253 – 276.

H. ALBERT (2000), *Kritischer Rationalismus*, Mohr (Siebeck), Tübingen 2000.

A.A. ALCHIAN (1950), Uncertainty, Evolution, and Economic Theory, *Journal of Political Economy* 58 (1950), pp. 211 – 221.

A.A. ALCHIAN (1953), Biological Analogies in the Theory of the Firm: Comment, *American Economic Review* 43 (1953), pp. 600 – 603.

A.A. ALCHIAN and W.R. ALLEN (1964), *Exchange and Production, Theory in Use*, Wadsworth, Belmont California 1964.

J.H. ALDRICH (1997), When is it Rational to Vote?, in: D.C. MUELLER (1997), pp. 373 – 390.

A. ALESINA and R. PEROTTI (1995), The Political Economy of Budget Deficits, *IMF Staff Papers* 42 (1995), pp. 1 – 31.

A. ALESINA and D. RODRIK (1994), Distributive Politics and Economic Growth, *Quarterly Journal of Economics* 109 (1994), pp. 465 – 490.

A. ALESINA and H. ROSENTHAL (1995), *Partisan Politics, Divided Government, and the Economy*, Cambridge University Press, Cambridge 1995.

L. DE ALESSI (1983), Property Rights, Transaction Costs, and X-Efficiency: An Essay in Economic Theory, *American Economic Review* 73 (1983), pp. 64 – 81.

M. ALLAIS (1953), Le comportement de l'homme rationnel devant risque: Critique des postulats et axiomes de l'école Américaine, *Econometrica* 21 (1953), pp. 503 – 546; extended English version: The Foundations of a Positive Theory of Choice Involving Risk and a Criticism of the Postulate and Axioms of the American School, in: M. ALLAIS and O. HAGEN (eds.), *Expected Utility Hypotheses and the Allais Paradox*, Reidel, Dordrecht 1979, pp. 27 – 145.

E. ALLEN et al. (1975), Against "Sociobiology", *The New York Review of Books*, November 13, 1975, pp. 182 – 186; reprinted in and quoted from: A.L. CAPLAN (1978), pp. 259 – 268.

CH.J. ANDERSON (2003), The Psychology of Doing Nothing: Forms of Decision Avoidance Result from Reason and Emotion, *Psychological Bulletin* 129 (2003), pp. 139 – 167.

T.M. ANDERSEN (2004), Challenges to the Scandinavian Welfare Model, European Journal of Political Economy 20 (2004), pp. 743 – 754.

T.M. ANDERSEN (2007), The Scandinavian Model: Prospects and Challenges, CESifo Working Paper No. 1903, Munich, January 2007.

J. ANDREONI (1988), Privately Produced Public Goods in a Large Economy: The Limits of Altruism, *Journal of Public Economics* 35 (1988), pp. 57 – 73.

J. ANDREONI (1989), Giving with Impure Altruism: Applications to Charity and Ricardian Equivalence, *Journal of Political Economy* 97 (1989), pp. 1447 – 1458.

J. ANDREONI (1990), Impure Altruism and Donations to Public Goods: A Theory of Warm Glow Giving, *Economic Journal* 100 (1990), pp. 464 – 477.

J. ANDREONI, (1991), Reasonable Doubt and the Optimal Magnitude of Fines: Should the Penalty Fit the Crime?, *Rand Journal of Economics* 22 (1991), pp. 385 – 395.

J. ANDREONI (1995), Cooperation in Public Goods Experiments: Kindness or Confusion? *American Economic Review* 85 (1995), pp. 891 – 904.

J. ANDREONI and J.H. MILLER (1993), Rational Cooperation in the Finitely Repeated Prisoner's Dilemma: Experimental Evidence, *Economic Journal* 103 (1993), pp. 570 – 585.

E. ANGEHRN (1983), Handlungserklärung und Rationalität, Zur Methodologie Max Webers, *Zeitschrift für philosophische Forschung* 37 (1983), pp. 341 – 362.

A. ANZENBACHER (1995) Ethik als Anreizethik: Koreferat, *Jahrbuch für Neue Politische Ökonomie* 14 (1995),pp. 212 – 215.

K.-O. APEL and M. KETTNER (eds.) (1992), *Zur Anwendung der Diskursethik in Politik, Recht und Wissenschaft*, Suhrkamp, Frankfurt 1992.

H.W. ARNDT (1976), Kausalitätsprinzip, in: J. RITTER and K. GRÜNDER (eds.), *Historisches Wörterbuch der Philosophie*, Schwabe und Co, Basel, Vol. 4, 1976, pp. 803 – 806.

J.-L. ARNI (1989), *Die Kontroverse um die Realitätsnähe der Annahmen in der Ökonomie*, Rüegger, Grüsch 1989.

J.-L. ARNI (1989a), Das Verhältnis von Moral und Rationalität: Eine Auseinandersetzung mit David Gauthiers 'Morals by Agreement', *Analyse und Kritik* 11 (1989), pp. 154 – 178.

H.H. V. ARNIM (1987), Staatsversagen, Schicksal oder Herausforderung?, *Aus Politik und Zeitgeschichte*, Issue B 48/1987, pp. 17 – 28.

E. ARONSON (1972), *The Social Animal*, W.H. Freeman and Company, San Francisco, 2nd edition 1976.

K.J. ARROW (1951), *Social Choice and Individual Values*, Wiley, New York 1951. (2nd edition 1963.)

K.J. ARROW (1963), Uncertainty and the Welfare Economics of Medical Care, *American Economic Review* 53 (1963), pp. 941 – 973.

K.J. ARROW (1970), The Organization of Economic Activity: Issues Pertinent to the Choice of Market Versus Non-Market Allocation, in: R.H. HAVEMAN and J. MARGOLIS (eds.), *Public Expenditure and Policy Analysis*, Rand McNally College Publishing Company, Chicago 1970, pp. 67 – 81.

K.J. ARROW (1982), Risk Perception in Psychology and Economics, *Economic Inquiry* 20 (1982), pp. 1 – 9.

K.J. ARROW (1985), The Economics of Agency, in: W. PRATT and R.J. ZECKHAUSER (eds.), *Principals and Agents, The Structure of Business*, Harvard Business School Press, Boston 1985, pp. 37 – 51.

K.J. ARROW (1986), Rationality of Self and Others in an Economic System, *Journal of Business* 59 (1986), pp. 385 – 399.

K.J. ARROW (1994), Methodological Individualism and Social Knowledge, *American Economic Review* 84 (1994), pp. 1 – 9.

K.J. ARROW and G. DEBREU (1954), Existence of an Equilibrium for a Competitive Economy, *Econometrica* 22 (1954), pp. 265 – 290.

A. AUER (1984), *Umweltethik*, Patmos, Düsseldorf, 3rd edition 1989.
R.J. AUMANN (1987), Game Theory, in: *The New Palgrave, A Dictionary of Economics*, Band 2, MacMillan, London 1987,pp. 460 – 482.
CH. AVERY and P. ZEMSKY (1998), Multidimensional Uncertainty and Herd Behavior in Financial Markets, *American Economic Review* 88 (1998), pp. 724 – 748.
R. AXELROD (1984), *The Evolution of Cooperation*, Basic Books, New York 1984.
R. AXELROD and W.D. HAMILTON (1981), The Evolution of Cooperation, *Science* 211 (1981), pp. 1390 – 1396.
L. BALL and G. MANKIW (2002), The NAIRU in Theory and Practice, *Journal of Economic Perspectives* 16/4 (2002), pp. 115 – 136.
D.P. BARASH (1977), *Sociobiology and Behavior*, North-Holland, Amsterdam 1977.
G.W. BARLOW and J. SILVERBERG (eds.) (1980), *Sociobiology: Beyond Nature/ Nurture?, Reports, Definitions and Debate*, American Association for the Advancement of Science, Washington 1980.
R.J. BARRO and D.B. GORDON (1983), Rules, Discretion and Reputation in a Model of Monetary Policy, *Journal of Monetary Economics* 12 (1983), pp. 101 – 121.
B. BARRY (1970), Sociological Study of Political Choice: Recent Developments in Study of Political Choice, *Advancement of Science* 26 (1970), pp. 394 – 399.
W.W. BARTLEY, III (1985), Knowledge is a Product Not Fully Known to its Producer, in: K.R. LEUBE and A.H. ZLABINGER (eds.), *The Political Economy of Freedom, Essays in Honor of F.A. v. Hayek*, Philosophia Verlag, München/ Wien 1985, pp. 17 – 45.
W.J. BAUMOL (1968), Entrepreneurship in Economic Theory, *American Economic Review* 58.2 (Papers and Proceedings) (1968), pp. 64 – 71.
W.J. BAUMOL and W.E. OATES (1979), *Economics, Environmental Policy, and the Quality of Life*, Prentice Hall, Englewood Cliffs 1979.
M. BAURMANN (1996), *Der Markt der Tugend: Recht und Moral in der liberalen Gesellschaft*, Mohr (Siebeck), Tübingen 1996.
M.H. BAZERMAN and W.F. SAMUELSON (1983), I Won the Auction but Don't Want the Prize, *Journal of Conflict Resolution* 27 (1983), pp. 618 – 634.
CH.R. BEAN (1994), European Unemployment: A Survey, *Journal of Economic Literature* 32 (1994), pp. 573 – 620.
G.S. BECKER (1962), Irrational Behavior and Economic Theory, *Journal of Political Economy* 70 (1962), pp. 1 – 13.
G.S. BECKER (1968), Crime and Punishment: An Economic Approach, *Journal of Political Economy* 76 (1968), pp. 169 – 217.
G.S. BECKER (1974), A Theory of Social Interactions, *Journal of Political Economy* 82 (1974), pp. 1063 – 1093.
G.S. BECKER (1976), *The Economic Approach to Human Behavior*, University of Chicago Press, Chicago 1976.
G.S. BECKER (1976a), Altruism, Egoism, and Genetic Fitness: Economics and Sociobiology, *Journal of Economic Literature* 14 (1976), pp. 817 – 826.

G.S. BECKER (1981), *A Treatise on the Family*, Harvard University Press, Cambridge 1981.

G.S. BECKER (1988), Family Economics and Macro Behavior, *American Economic Review* 78 (1988), pp. 1 – 13.

G.S. BECKER and K.M. MURPHY (1988), A Theory of Rational Addiction, *Journal of Political Economy* 96 (1988), pp. 675 – 700.

G.S. BECKER and G.J. STIGLER (1977), De Gustibus Non Est Disputandum, *American Economic Review* 67 (1977), pp. 76 – 90.

P. BEHRENS (1986), *Die ökonomischen Grundlagen des Rechts, Politische Ökonomie als rationale Jurisprudenz*, Mohr (Siebeck), Tübingen 1986.

J.T. BENNETT and TH.J. DILORENZO (1984), Political Entrepreneurship and Reform of the Rent-Seeking Society, in: DAVID C. COLANDER (1984), pp. 217 – 227.

Y. BEN-PORATH (1982), Economics and the Family, Match or Mismatch?, A Review of Becker's 'Treatise on the Family', *Journal of Economic Literature* 20 (1982), pp. 52 – 64.

M. BENZ (2004), *Institutionen und menschliches Wohlergehen: Die Rolle von Prozessnutzen in Wirtschaft und Gesellschaft*, Mohr Siebeck, Tübingen 2004.

M. BENZ und S. MEIER (2006), Do People Behave in Experiments as in the Field? Evidence from Donations, Federal Bank of Boston, Working Paper No. 06-8, Boston, January 2006.

L. BERGSTRÖM (2002), Putnam on the Fact-Value Dichotomy, *Croatian Journal of Philosophy* 2 (2002), pp. 117 – 129.

P. BERNHOLZ (1986), Growth of Government, Economic Growth and Individual Freedom, *Journal of Institutional and Theoretical Economics* 142 (1986), pp. 661 – 683.

P. BERNHOLZ (1998), Homo Oeconomicus and Homo Politicus: A Comment, *Kyklos* 51 (1998), pp. 409 – 415.

T. BESLEY (2007), The New Political Economy, *Economic Journal* 117 (2007), pp. F570 – F587.

T. BESLEY and A. PAYNE (2003), Judicial Accountability and Economic Policy Outcomes: Evidence from Employment Discrimination Charges, Institute for Fiscal Studies, Working Paper No. 03/11, June 2003.

W. BESSON (1970), *Die Aussenpolitik der Bundesrepublik*, Piper, München 1970.

J.N. BHAGWATI (1982), Directly Unproductive Profit-Seeking (DUP) Activities, *Journal of Political Economy* 90 (1982), pp. 988 – 1002.

J.N. BHAGWATI and T.N. SRINIVASAN (1980), Revenue-Seeking: A Generalization of the Theory of Tariffs, *Journal of Political Economy* 88 (1980), pp. 1069 – 1087.

K. BINMORE (1993), Bargaining and Morality, in: D. GAUTHIER and R. SUGDEN (eds.), *Rationality, Justice and the Social Contract: Themes from Morals by Agreement,* Harvester Wheatsheaf, New York 1993, pp. 131 – 156.

K. BINMORE and L. SAMUELSON (2006), The Evolution of Focal Points, *Games and Economic Behavior* 55 (2006), pp. 21 – 42.

D. BLACK (1948), On the Rationale of Group Decision-Making, *Journal of Political Economy* 56 (1948), pp. 23 – 34.

D. BLACK (1958), *The Theory of Committees and Elections*, Cambridge University Press, London 1958.

K. BLACKBURN (1987), Macroeconomic Policy Evaluation and Optimal Control Theory: A Critical Review of Some Recent Developments, *Journal of Economic Surveys* 1 (1987), pp. 111 – 148.

O. BLANCHARD (2000), What Do We Know About Macroeconomics Fisher and Wicksell Did Not?, *Quarterly Journal of Economics* 115 (2000), pp. 1375 – 1409.

O. BLANCHARD (2006), European Unemployment: The Evolution of Facts and Ideas, *Economic Policy* 45 (2006), pp. 5 – 59.

CH.B. BLANKART (1994), ‚Neue Finanzwissenschaft': Eine alternative Sicht, *Zeitschrift für Wirtschafts- und Sozialwissenschaften* 114 (1994),pp. 245 – 254.

P. BLAU (1964), *Exchange and Power in Social Life*, Wiley, London 1964.

A. BLINDER (1987), The Rules-Versus-Discretion Debate in the Light of Recent Experience, *Weltwirtschaftliches Archiv* 123 (1987), pp. 399 – 414.

P. BOHM, (1994), Time Preference and Preference Reversal Among Experienced Subjects: The Effects of Real Payments, *Economic Journal* 104 (1994), pp. 1370 – 1378.

H. BOHN and R.P. INMAN (1996), Balanced-Budget Rules and Public Deficits: Evidence from the U.S. States, *Carnegie-Rochester Conference Series on Public Policy* 45 (1996), pp. 13 – 76.

A. BOHNEN (1975), *Individualismus und Gesellschaftstheorie*, Mohr (Siebeck), Tübingen 1975.

I. BOHNET (1997), *Kooperation und Kommunikation: Eine ökonomische Analyse individueller Entscheidungen*, Mohr (Siebeck), Tübingen 1997.

I. BOHNET und B.S. FREY (1994), Kooperation, Kommunikation und Kommunitarismus: Eine experimentelle Analyse, *Kölner Zeitschrift für Soziologie und Sozialpsychologie* 46 (1994), pp. 453 – 463.

I. BOHNET und B.S. FREY (1995), Ist Reden Silber und Schweigen Gold? Eine experimentelle Analyse, *Zeitschrift für Wirtschafts- und Sozialwissenschaften* 115 (1995), pp. 169 – 211.

L.A. BOLAND (1997), *Critical Economic Methodology: A Personal Odyssey*, Routledge, New York 1997.

G. BOMBACH (1977), Neue Politische Ökonomie, *List Forum* 9 (1977), pp. 65 – 77, pp. 133 – 144.

W.F.M. DE BONDT and A.K. MAKHIJA (1988), Throwing Good Money After Bad?, Nuclear Power Plant Investment Decisions and the Relevance of Sunk Costs, *Journal of Economic Behavior and Organization* 10 (1988), pp. 173 – 199.

W.F.M. DE BONDT and R.H. THALER (1987), Further Evidence on Investor Overreaction and Stock Market Seasonality, *Journal of Finance* 42 (1987), pp. 557 – 581.

H. BONUS (1980), Öffentliche Güter und der Öffentlichkeitsgrad von Gütern, *Journal of Institutional and Theoretical Economics* 136 (1980), pp. 50 – 81.

H. BONUS (1982), On Social Justice, *Journal of Institutional and Theoretical Economics* 138 (1982), pp. 599 – 617.

S.A. BOORMAN and P.R. LEVITT, *The Genetics of Altruism*, Academic Press, New York 1980.

K.E. BOULDING (1968), *Beyond Economics, Essays of Society, Religion, and Ethics*, University of Michigan Press, Ann Arbor 1968.

K.E. BOULDING (1969), Economics as a Moral Science, *American Economic Review*, 59 (1969), pp. 1 – 12..

K.E. BOULDING (1970), *Economics as a Science*, McGraw-Hill, New York 1970.

K.E. BOULDING (1973), *The Economy of Love and Fear, A Preface to Grants Economics*, Wadsworth, Belmont 1973.

S. BOWLES and H. GINTIS (1993), The Revenge of Homo Economicus: Contested Exchange and the Revival of Political Economy, *Journal of Economic Perspectives* 7/1 (1993), pp. 83 – 102.

H.W. BRACHINGER and R. SCHUBERT (1986), Ausstieg aus der Kernenergie-Rationale Entscheidung oder Glaubenskrieg, *Wirtschaftsdienst* 66 (1986), pp. 361 – 365.

B. BREHMER (1980), In One Word: Not from Experience, *Acta Psychologica* 45 (1980), pp. 223 – 241.

G. BRENNAN (1975), Pareto-Optimal Redistribution: A Perspective, *Finanzarchiv* 33 (1975), pp. 237 – 251.

G. BRENNAN and J.M. BUCHANAN (1980), *The Power to Tax, Analytical Foundations of a Fiscal Constitution*, Cambridge University Press, Cambridge (Mass.) 1980.

G. BRENNAN and J.M. BUCHANAN (1983), Predictive Power and the Choice Among Regimes, *The Economic Journal* 93 (1983), pp. 89 – 105.

G. BRENNAN and J.M. BUCHANAN (1984), Voter Choice, Evaluating Political Alternatives, *American Behavioral Scientist* 28 (1984), pp. 185 – 201.

G. BRENNAN and J.M. BUCHANAN(1985), *The Reason of Rules*, Cambridge University Press, Cambridge 1985.

G. BRENNAN and L. LOMASKY (1984), Institutional Aspects of Merit Goods Analysis, *Finanzarchiv* N.F. 41 (1984), pp. 183 – 206.

G. BRENNAN and L. LOMASKY (1985), The Impartial Spectator Goes to Washington, *Economics and Philosophy* 1 (1985), pp. 189 – 211.

G. BRENNAN and L. LOMASKY (1993), *Democracy and Decision: The Pure Theory of Electoral Preference*, Cambridge University Press, Cambridge /New York 1993.

G. BRENNAN and A. HAMLIN (1998), Expressive Voting and Electoral Equilibrium, *Public Choice* 95 (1998), pp. 149 – 175.

G. BRENNAN and A. HAMLIN (2000), *Democratic Devices and Desires*, Cambridge University Press, Cambridge (U.K.) 2000.

G. BRENNAN and J. PINCUS (1987), Rational Actor Theory in Politics: A Critical Review of John Quiggin, *The Economic Record* 63 (1987), pp. 22 – 32.

G. BRENNAN and G. TULLOCK (1982), An Economic Theory of Military Tactics, Methodological Individualism at War, *Journal of Economic Behavior and Organization* 3 (1982), pp. 225 – 242.

G. BRENNAN, W. GÜTH and H. KLIEMT (1997), Trust in the Shadow of the Courts, *Journal of Institutional and Theoretical Economics* 159 (2003), pp. 16 – 36.

M.J. BRENNAN (1987), Capital Asset Pricing Model, in: *The New Palgrave, A Dictionary of Economics*, Vol. 1, MacMillan, London 1987, pp. 336 – 341.

I. BROCAS and J.D. CARILLO (2003), *The Psychology of Economic Decisions. Vol. 1: Rationality and Well-Being*, 2003, Oxford University Press, Oxford 2003.

M.A. BROOKS and B.J. HEIJDRA (1988), In Search of Rent-Seeking, in: CH.K. ROWLEY, R.D. TOLLISON and G. TULLOCK (eds.), *The Political Economy of Rent-Seeking*, Kluwer Academic Publishers, Boston 1988, pp. 27 – 49.

M.A. BROOKS and B.J. HEIJDRA (1989), An Exploration of Rent-Seeking, *Economic Record* 65 (1989), pp. 32 – 50.

M. BROWNING and P.A. CHIAPPORI (1998), Efficient Intra-Household Allocations: A General Characterization and Empirical Tests, *Econometrica* 66 (1998), pp. 1241 – 1278.

K. BRUNNER (1987), The Perception of Man and the Conception of Society: Two Approaches to Understanding Society, *Economic Inquiry* 25 (1987), pp. 367 – 388.

K. BRUNNER and W.H. MECKLING (1977), The Perception of Man and the Conception of Government, *Journal of Money, Credit, and Banking* 9 (1977), pp. 70 – 85.

J.M. BUCHANAN (1954), Individual Choice in Voting and in the Market, *Journal of Political Economy* 62 (1954), pp. 334 – 343.

J.M. BUCHANAN (1975), *The Limits of Liberty*, University of Chicago Press, Chicago 1975.

J.M. BUCHANAN (1975a), A Contractarian Paradigm for Applying Economic Theory, *American Economic Review, Papers and Proceedings*, 65.2 (1975), pp. 225 – 230.

J.M. BUCHANAN (1976), A Hobbesian Interpretation of the Rawlsian Difference Principle, *Kyklos* 29 (1976), pp. 5 – 25.

J.M. BUCHANAN (1986), Kommentar, in: P. KOSLOWSKI (1986), *Ethik des Kapitalismus*, Mohr (Siebeck), Tübingen 1986, pp. 81 – 92.

J.M. BUCHANAN (1987), Constitutional Economics, in: *The New Palgrave, A Dictionary of Economics*, Macmillan, London 1987, Vol. 1, pp. 585 – 588.

J.M. BUCHANAN (1987a), The Constitution of Economic Policy, *American Economic Review* 77 (1987), pp. 243 – 250.

J.M. BUCHANAN and G. TULLOCK (1962), *The Calculus of Consent: Logical Foundations of Constitutional Democracy*, University of Michigan Press, Ann Arbor 1962.

J.M. BUCHANAN and R.E. WAGNER (1977), *Democracy in Deficit: The Political Legacy of Lord Keynes*, Academic Press, New York 1977.

J.M. BUCHANAN and R.E. WAGNER (1978), The Political Biases of Keynesian Economics, in: J.M. BUCHANAN and R.E. WAGNER (eds.), *Fiscal Responsibility in Constitutional Democracy*, Martinus Nijhoff, Leiden/Boston 1978, pp. 79 – 100.

J.M. BUCHANAN and Y.J. YOON (2000), Symmetric Tragedies: Commons and Anticommons, *Journal of Law and Economics* 43 (2000), pp. 1 – 13.

A. BÜHLER (1987), Die Einheit der wissenschaftlichen Methode und Maximen des Verstehens, Zeitschrift für philosophische Forschung 41 (1987), pp. 633 – 644.

W.H. BUITER (1980), The Macroeconomics of Dr. Pangloss, A Critical Survey of the New Classical Macroeconomics, *Economic Journal* 90 (1980), pp. 34 – 50.

W.H. BUITER (1988), Debt Neutrality, Redistribution and Consumer Heterogeneity, A Survey and Some Extensions, mimeo, 1988.

M. BUNGE (1959), *Causality: The Place of the Causal Principle in Modern Science*, Harvard University Press, Cambridge (Mass.), 1959.

J.R. CABLE and F.R. FITZROY (1980), Productive Efficiency, Incentives and Employee Participation, Some Preliminary Results for West Germany, *Kyklos* 33 (1980), pp. 100 – 121.

C.F. CAMERER (1995), Individual Decision Making, in: J. KAGEL and A.E. ROTH (eds.), *Handbook of Experimental Economics*, Princeton University Press, Princeton 1995, pp. 587 – 703.

C. CAMERER, G. LOEWENSTEIN and D. PRELEC (2004), Neuroeconomics: Why Economics Needs Brains, *Scandinavian Journal of Economics* 106 (2004), pp. 555 – 579.

C. CAMERER, G. LOEWENSTEIN and D. PRELEC (2005), Neuroeconomics: How Neuroscience Can Inform Economics, *Journal of Economic Literature* 43 (2005), pp. 9 – 64.

S. CAMERON (1988), The Economics of Crime Deterrence: A Survey of Theory and Evidence, *Kyklos* 41 (1988), pp. 301 – 323.

D.T. CAMPBELL (1972), On the Genetics of Altruism and the Counter-Hedonic Components in Human Culture, *Journal of Social Issues* 28, issue 3/1972, pp. 21 – 37.

E.C. CAPEN, R.V. CLAPP and W.M. CAMPBELL (1971), Competitive Bidding in High-Risk Situations, *Journal of Petroleum Technology* 23 (1971), pp. 641 – 653.

A.L. CAPLAN (ed.) (1978), *The Sociobiology Debate*, Harper and Row, New York 1978.

F. CARLSEN and E.F. PEDERSEN (1999), Rational Partisan Theory: Evidence for Seven OECD Countries, *Economics and Politics* 11 (1999), pp. 13 – 32.

J. CARPENTER and P.H. MATTHEWS (2004), Social Reciprocity, IZA Working Paper No. 1347, Bonn, October 2004.

E. CHAMBERLIN (1933), *The Theory of Monopolistic Competition*, Harvard University Press, Cambridge (Mass.) 1933.

S.R. CHANT and Z. ERNST (2007), Group Intentions as Equilibria, *Philosophical Studies* 133 (2007), pp. 95 – 109.

K. CHOI (1983), A Statistical Test of Olson's Model, in D.C. MUELLER (1983), pp. 57 – 78.

G.C. CHOW (1975), *Analysis and Control of Dynamic Economic Systems*, Wiley, New York 1975.

G.C. CHOW and S.B. MEGDAL (1978), An Econometric Definition of the Inflation-Unemployment Trade-off, *American Economic Review* 68 (1978), pp. 446 – 453.
A. CICCONE (2004), Resistance to Reform: Status Quo Bias in the Presence of Individual-Specific Uncertainty: Comment, *American Economic Review* 94 (2004), pp. 785 – 795.
R.H. COASE (1937), The Nature of the Firm, *Economica* 4 (1937), pp. 386 – 405.
R.H. COASE (1960), The Problem of Social Cost, *Journal of Law and Economics* 3 (1960), pp. 1 – 44.
R.H. COASE (1976), Adam Smith's View of Man, *Journal of Law and Economics* 19 (1976), pp. 529 – 546.
R.H. COASE (1978), Discussion, *American Economic Review (Papers and Proceedings)* 68.2, (1978), pp. 244 – 245.
R.H. COASE (1984), The New Institutional Economics, *Journal of Institutional and Theoretical Economics* 40 (1984), pp. 229 – 231.
D.C. COLANDER (ed.) (1984), *Neoclassical Political Economy: The Analysis of Rent-Seeking and DUP Activities*, Ballinger, Cambridge (Mass.) 1984.
J.L. COLEMAN (1984), Economics and the Law: A Critical Review of the Foundations of the Economic Approach to Law, *Ethics* 94 (1984),pp. 649 – 679.
J.S. COLEMAN (1964), Collective Decisions, *Sociological Inquiry* 34 (1964), pp. 166 – 181.
J.S. COLEMAN (1990), *Foundations of Social Theory*, Harvard University Press, Cambridge (Mass.) 1990
D. COLLARD (1978), *Altruism and Economy, A Study in Non-Selfish Economics*, Martin Robertson, Oxford 1978.
MARQUIS DE CONDORCET (1785), *Essai sur l'application de l'analyse à la probabilité des décisions rendues à la pluralité des voix*, L'imprimerie Royale, Paris 1785. (Reprint: Chelsea Publishing Company, New York 1972.)
R.D. CONGLETON (1988), An Overview of the Contractarian Public Finance of James Buchanan, *Public Finance Quarterly* 16 (1988), pp. 131 – 157.
R.D. CONGLETON (1991), The Economic Role of Work Ethic, *Journal of Economic Behavior and Organization* 15 (1991), pp. 365 – 385.
J.G. CONLISK (1996), Why Bounded Rationality? *Journal of Economic Literature* 34 (1996), pp. 669 – 700.
R. CONSTANZA et al. (1997), *An Introduction into Ecological Economics*, St. Lucie Press, Boca Raton 1997.
J.M. COTE and D.L. SANDERS (1997), Herding Behavior: Explanations and Implications, *Behavioral Research in Accounting* 9 (1997), pp. 20 – 45.
P.J. COUGHLIN (1991), *Probabilistic Voting Theory*, Cambridge University Press, Cambridge (Mass.) 1991.
A.A. COURNOT (1838), Recherches sur les principes mathématiques de la théorie des richesses, Paris 1938; English translation: *Researches Into the Mathematical Principles of the Theory of Wealth*, Macmillan, New York 1927.
J.C. COX (2004), How to Identify Trust and Reciprocity, *Games and Economic Behavior* 46 (2004), pp. 260 – 281.

J.C. COX and R.M. ISAAC (1984), In Search of the Winner' s Curse, *Economic Inquiry* 22 (1984), pp. 579 – 592.

R.A. DAHL and C.E. LINDBLOM (1953), *Politics, Economics, and Welfare*, Harper and Brothers, New York 1953.

R. DAHRENDORF (1958), Homo Sociologicus: Versuch zur Geschichte, Bedeutung und Kritik der Kategorie der sozialen Rolle, *Kölner Zeitschrift für Soziologie und Sozialpsychologie* 10 (1958), pp. 178 – 208; quoted from the English translation: Homo Sociologicus: On the History, Significance, and Limits of the Category of Social Role, in: R. DAHRENDORF, *Essays in the Theory of Society*, Stanford University Press, Stanford 1968, pp. 19 – 87.

R. DAHRENDORF (1963), Soziologie und menschliche Natur, in: A. FLITNER (ed.), *Wege zur Pädagogischen Anthropologie*, Heidelberg 1963, pp. 110 – 127; quoted from the English translation: Sociology and Human Nature: A Postscript to Homo Sociologicus, in: R. DAHRENDORF, *Essays in the Theory of Society*, Stanford University Press, Stanford 1968, pp. 88 – 106.

H.E. DALY (1995), On Nicholas Georgescu-Roegen's Contributions to Economics: An Obituary Essay, *Ecological Economics* 13 (1995), pp. 149 – 154.

H.E. DALY (1999), *Ecological Economics and the Ecology of Economics: Essays in Criticism*, Edward Elgar, Cheltenham 1999.

J. DARLEY and B. LATANÉ (1968), Bystander Intervention in Emergencies: Diffusion of Responsibility, *Journal of Personality and Social Psychology* 8 (1968), pp. 377 – 383.

C. DARWIN (1859), *The Origin of Species*, London 1859; quoted from the new edition by J.M. Dent and Sons Ltd, London 1972.

B.D. DAVIS (1976), A Middle Course Between Irrelevance and Scientism, Hastings Center Report, October 1976; reprinted in und quoted from: A.L. CAPLAN (1978), pp. 315 – 318.

R.M. DAWES and R.H. THALER (1988), Anomalies: Cooperation, *Journal of Economic Perspectives* 2/3 (1988), pp. 187 – 197.

R. DAWKINS (1976), *The Selfish Gene*, Oxford University Press, Oxford 1976.

R. DAWKINS (1982), *The Extended Phenotype, The Gene as the Unit of Selection*, W.H. Freeman, Oxford and San Francisco 1982.

A.S. DEATON and J. MUELLBAUER (1980), *Economics and Consumer Behavior*, Cambridge University Press, New York 1980.

E.L. DECI (1971), Effects of Externally Mediated Rewards on Intrinsic Motivation, *Journal of Personality and Social Psychology* 18 (1971), pp. 105 – 115.

E.L. DECI (1975), *Intrinsic Motivation*, Plenum Press, New York 1975.

G. DEBREU (1984), Economic Theory in the Mathematical Mode, *Scandinavian Journal of Economics* 86 (1984), pp. 393 – 410.

G. DEBREU (1991), The Mathematization of Economic Theory, *American Economic Review* 81 (1991), pp. 1 – 7.

E. DEKEL, J.C. ELY and O. YILANKAYA (2007), Evolution of Preferences, *Review of Economic Studies* 74 (2007), pp. 685 – 704.

H. DEMSETZ (1969), Information and Efficiency: Another Viewpoint, *Journal of Law and Economics* 12 (1969), pp. 1 – 22.

A. DEVENOW and I. WELCH (1996), Rational Herding in Financial Economics, *European Economic* Review 40 (1996), pp. 603 – 615.
M. DEWATRIPONT and J. TIROLE (1999), Advocates, *Journal of Political Economy* 107 (1999), pp. 1 – 39.
A. DIEKMANN (1985), Volunteer's Dilemma, *Journal of Conflict Resolution* 29 (1985), pp. 605 – 610.
A. DIEKMANN (1996), Homo ÖKOnomicus: Anwendungen und Probleme der Theorie rationalen Handelns im Umweltbereich, in: A. DIEKMANN und C.J. JAEGER (eds.), *Umweltsoziologie*, Westdeutscher Verlag, Opladen 1996, pp. 89 – 118.
A. DIEKMANN and P. PREISENDÖRFER (1991), Umweltbewusstsein, ökonomische Anreize und Umweltverhalten, *Schweizerische Zeitschrift für Soziologie* 2 (1991), pp. 207 – 231.
A. DIEKMANN and P. PREISENDÖRFER (1992), Persönliches Umweltverhalten: Diskrepanzen zwischen Anspruch und Wirklichkeit, *Kölner Zeitschrift für Soziologie und Sozialpsychologie* 44 (1992), pp. 226 – 251.
M. DIETRICH (1991), Firms, Markets and Transaction Cost Economics, *Scottish Journal of Political Economy* 38 (1991), pp. 41 – 57.
R. DIETRICH (ed.) (1986), *Die politischen Testamente der Hohenzollern*, Böhlau, Köln/Wien 1986.
R. DI TELLA and R. MACCULLOCH (2005), Partisan Social Happiness, *Review of Economic Studies* 72 (2005), pp. 367 – 393.
W. DOLFSMA (2004), *Institutional Economics and the Formation of Preferences: The Advent of Pop Music*, Edward Elgar, Aldershot 2004
B.E. DOLLERY and A.C. WORTHINGTON (1996), The Empirical Analysis of Fiscal Illusion, *Journal of Economic Surveys* 10 (1996), pp. 261 – 297.
J.J. DONOHUE and J. WOLFERS (2006), Uses and abuses of Empirical Evidence in the Death Penalty Debate, *Stanford Law Review* 58 (2006), pp. 791 – 845.
A. DOWNS (1957), *An Economic Theory of Democracy*, Harper and Row, New York 1957.
CH. DOUCOULIAGOS (1994), A Note on the Evolution of Homo Economicus, *Journal of Economic Issues* 28 (1994), pp. 877 – 883.
H.P. DREITZEL (1965), Rationales Handeln und politische Orientierung, *Soziale Welt* 16 (1965), pp. 1 – 26.
U. DRUWE (1987), The Structural Identity of the Natural and Social Sciences, *Zeitschrift für allgemeine Wissenschaftstheorie* 18 (1987), pp. 96 – 109.
J.S. DUESENBERRY (1949), *Income, Saving, and the Theory of Consumer Behavior*, Harvard University Press, Cambridge (Mass.) 1949.
M. DUFWENBERG and G. KIRCHSTEIGER (2000), Reciprocity and Wage Undercutting, *European Economic Review* 44 (2000), pp. 1069 – 1078.
E. DURKHEIM (1895), *Les règles de la méthode sociologique*, Presses Universitaires de France, Paris 1895; quoted from the English translation: *The Rules of Sociological Method*, The Free Press, Glencoe (Ill.) 1938.
E. DURKHEIM (1897), *Le suicide, Etude de sociologie*, Paris 1897; English translation: *Suicide: A Study in Sociology*, Free Press, New York 1951.

D. DYER, J. KAGEL and D. LEVIN (1989), A. Comparison of Naïve and Experienced Bidders in Common Value Offer Auctions: A Laboratory Analysis, *Economic Journal* 99 (1989), pp. 108 . – 115.

E.B. EBBESEN and V.J. KONECNI (1980), On the External Validity of Decision Making Research: What Do We Know About Decisions in the Real World?, in: T.S. WALLSTEN (1980), pp. 21 – 45.

F.Y. EDGEWORTH (1881), *Mathematical Psychics, An Essay on the Application of Mathematics to the Moral Sciences*, Kegan Paul, London 1881.

A. EDLIN, A. GELMAN and N. KAPLAN (2007), Voting as a Rational Choice: Why and How People Vote to Improve the Well-Being of Others, NBER Working Paper No. 13562, Cambridge (Mass.), October 2007.

R.G. EHRENBERG and R.S. SMITH (2003), *Modern Labor Economics: Theory and Public Policy*, Addison Wesley, Boston et al, 8th edition 2003.

I. EHRLICH (1975), The Deterrent Effect of Capital Punishment: A Question of Life and Death, *American Economic Review* 65 (1975), pp. 397 – 417.

M. EICHENBAUM (1991), Real Business-Cycle Theory: Wisdom or Whimsy?, *Journal of Economic Dynamics and Control* 15 (1991), pp. 607 – 626.

H.J. EINHORN (1980), Learning from Experience and Suboptimal Rules in Decision Making, in: T.S. WALLSTEN (1980), pp. 1 – 20.

H.J. EINHORN and R.M. HOGARTH (1978), Confidence in Judgement: Persistence of the Illusion of Validity, *Psychological Review* 85 (1978), pp. 395 – 416.

D. ELLSBERG (1961), Risk, Ambiguity and the Savage Axioms, *Quarterly Journal of Economics* 75 (1961),pp. 643 – 669.

J. ELSTER (1978), *Logic and Society*, Wiley, London 1978.

J. ELSTER (1979), *Ulysses and the Sirens, Studies in Rationality and Irrationality*, Cambridge University Press, Cambridge 1979.

J. ELSTER (1979a), Anomalies of Rationality: Some Unresolved Problems in the Theory of Rational Behaviours, in: L. LÉVY-GARBOUA (ed.), *Sociological Economics*, Sage, London 1979, pp. 65 – 85.

J. ELSTER (ed.) (1987), *The Multiple Self*, Cambridge University Press, Cambridge 1987.

J. ELSTER (1988), Arguments for Constitutional Choice: Reflections on the Transition to Socialism, in: J. ELSTER and R. SLAGSTAD (eds.), *Constitutionalism and Democracy*, Cambridge University Press, Cambridge 1988, pp. 303 – 323.

A. ENDRES (1991), *Ökonomische Grundlagen des Haftungsrechts*, Physica, Heidelberg 1991.

A. ENDRES und K. HOLM-MÜLLER (1998), *Die Bewertung von Umweltschäden: Theorie und Praxis sozioökonomischer Verfahren*, Kohlhammer, Stuttgart et al 1998.

CH. ENGEL (1999), Vertrauen: Ein Versuch, Max-Planck-Projektgruppe Recht der Gemeinschaftsgüter, Preprint Nr. 1999/12, Bonn, November 1999.

CH. ENGEL and M. MORLOCK (eds.), *Öffentliches Recht als ein Gegenstand ökonomischer Forschung*, Mohr (Siebeck), Tübingen 1998.

W. ENGELS (1980), *Börsen und Börsengeschäfte, in: Handwörterbuch der Wirtschaftswissenschaft*, Band 2, Gustav Fischer et al., Stuttgart/New York 1980, pp. 56 – 69.

S. ENKE (1951), On Maximizing Profits: A Distinction Between Chamberlin and Robinson, *American Economic Review* 41 (1951), pp. 566 – 578.

H. ESSER (1996), Die Definition der Situation, *Kölner Zeitschrift für Soziologie und Sozialpsychologie* 48 (1996), pp. 1 – 34.

H. ESSER (1999/2000), *Soziologie: Spezielle Grundlagen*, 3 Volumes, Campus, Frankfurt/New York 1999/2000.

W. EUCKEN (1940), *Die Grundlagen der Nationalökonomie*, Gustav Fischer, Jena 1940; English translation: *The Foundations of Economics: History and Theory in the Analysis of Economic Reality*, The University of Chicago Press, Chicago 1951.

W.M. EVAN (ed.), *The Sociology of Law: A Social-Structural Perspective*, The Free Press, New York 1980.

CH.L. EVANS (1994), The Post-War U.S. Phillips Curve: A Comment, *Carnegie-Rochester Conference Series on Public Policy* 41 (1994), pp. 221 – 230.

J.S.B.T. EVANS (1982), *The Psychology of Deductive Reasoning*, Routledge and Kegan Paul, London 1982.

J.S.B.T. EVANS (1983) (ed.), *Thinking and Reasoning*, Routledge and Kegan Paul, London, 1983.

M. FABER and J.L.R. PROOPS (1985), Interdisciplinary Research Between Economists and Physical Scientists: Retrospect and Prospect, *Kyklos* 38 (1985), pp. 599 – 616.

M. FABER and J.L.R. PROOPS (1986), Time Irreversibilities in Economics: Some Lessons from the Natural Sciences, in: M. FABER (ed.), *Studies in Austrian Capital Theory, Investment and Time*, Springer, Heidelberg 1986, pp. 294 – 316.

M. FABER and J.L.R. PROOPS (1990), *Evolution, Time, Production and the Environment*, Springer, Heidelberg , 3rd edition 1997.

M. FABER, R. MANSTETTEN and TH. PETERSEN (1997), Homo Oeconomicus and Homo Politicus: Political Economy, Constitutional Interest and Ecological Interest, *Kyklos* 50 (1997), pp. 457 – 483.

M. FABER, R. MANSTETTEN and J.L.R. PROOPS (1996), *Ecological Economics: Concepts and Methods*, Edward Elgar, Cheltenham 1996.

M. FABER, N. NIEMES und G. STEPHAN (1983), *Entropie, Umweltschutz und Rohstoffverbrauch*, Springer, Berlin/Heidelberg/New York 1983.

A. FALK and U. FISCHBACHER (2006), A Theory of Reciprocity, *Games and Economic Behavior* 54 (2006), pp. 293 – 315.

E.F. FAMA and M.H. MILLER (1972), *The Theory of Finance*, Drydon Press, Hinsdale (Ill.) 1972.

N.T. FEATHER (1959), Subjective Probability and Decision under Uncertainty, *Psychological Review* 66 (1959), pp. 150 – 164.

E. FEHR (2006), Neuroökonomik: Die Erforschung der biologischen Grundlagen des menschlichen Sozialverhaltens, Universität St. Gallen, Forschungsgemeinschaft für Nationalökonomie, Volkswirtschaftliche Beiträge No. 3, August 2006.

E. FEHR and A. FALK (1999), Wage Rigidity in a Competitive Incomplete Contract Market, *Journal of Political Economy* 107 (1999), pp. 106 – 134.

E. FEHR and U. FISCHBACHER (2002), Why Social Preferences Matter: The Impact of Non-Selfish Motives on Competition, Cooperation and Incentives, *Economic Journal* 112 (2002), pp. C1 – C33.

E. FEHR and U. FISCHBACHER (2003), The Nature of Human Altruism, *Nature* 425 (2003), pp. 785 – 791.

E. FEHR and S. GÄCHTER (1998), Reciprocity and Economics: The Economic Implications of Homo Reciprocans, *European Economic Review* 42 (1998), pp. 845 – 859.

E. FEHR and S. GÄCHTER (2000), Fairness and Retaliation: The Economic of Reciprocity, *Journal of Economic Perspectives* 14/3 (2000), pp. 159 – 181.

E. FEHR and S. GÄCHTER (2002), Altruistic Punishment in Humans, *Nature* 415 (2002), pp. 137 – 140.

E. FEHR and S. GÄCHTER (2002a), Do Incentive Contracts Undermine Voluntary Cooperation?, University of Zürich, Institute for Empirical Research in Economics, Working Paper No. 34, April 2002.

E. FEHR and J. HENRICH (2005), Is Strong Reciprocity a Maladaption?, On the Evolutionary Foundations of Human Altruism, forthcoming in: P. HAMMERSTEIN (ed.), *The Genetic and Cultural Evolution of Cooperation*, MIT Press, Cambridge (Mass.) 2005, pp. 55 – 82.

E. FEHR and B. ROCKENBACH (2003), Detrimental Effects of Sanctions on Human Altruism, *Nature* 422 (2003), pp. 137 – 140.

E. FEHR and J.-R. TYRAN (2005), Individual Irrationality and Aggregate Outcomes, *Journal of Economic Perspectives* 19/4 (2005), pp. 43 – 66.

E. FEHR and P.K. ZYCH (1998), Do Addicts Behave Rationally?, *Scandinavian Journal of Economics* 100 (1998), pp. 643 – 662.

E. FEHR, S. GÄCHTER and G. KIRCHSTEIGER (1997), Reciprocity as a Contract Enforcement Devise: Experimental Evidence, *Econometrica* 65 (1997), pp. 833 – 860.

L.P. FELD und G. KIRCHGÄSSNER (2001), Erwartete Knappheit und die Höhe der Wahlbeteiligung: Empirische Ergebnisse für die neunziger Jahre, in: M. KAASE und H.-D. KLINGEMANN (eds.), *Wahlen und Wähler: Analysen aus Anlass der Bundestagswahl 1998*, Westdeutscher Verlag, Wiesbaden 2001, pp. 415 – 441.

L.P. FELD und S. VOIGT (2003), Economic Growth and Judicial Independence: Cross-Country Evidence Using a New Set of Indicators, *European Journal of Political Economy* 19 (2003), pp. 497 – 527.

L.P. FELD und S. VOIGT (2004), Making Judges Independent: Some Proposals Regarding the Judiciary, CESifo Working Paper No. 1260, Munich, August 2004.

L.P. FELD, W.W. POMMEREHNE and A. HART (1996), Private Provision of a Public Good: A Case Study, in: R.D. CONGLETON (ed.), *The Political Economy of Environmental Protection: Analysis and Evidence*, The University of Michigan Press, Ann Arbor 1996, pp. 227 – 250.

J.A. FEREJOHN and M.P. FIORINA (1974), The Paradox of Not Voting, A Decision Theoretic Analysis, *American Political Science Review* 69 (1974), pp. 525 – 536.

J.A. FEREJOHN and M.P. FIORINA (1975), Closeness Counts Only in Horseshoes and Dancing, *American Political Science Review* 69 (1975), pp. 920 – 925.

R. FERNANDEZ and D. RODRIK (1991), Resistance to reform: Status Quo Bias in the Presence of Individual-Specific Uncertainty, *American Economic Review* 81 (1991), pp. 1146 – 1155.

J.S. FERRIS and E.G. WEST (2003), Private versus Public Charity: Reassessing Crowding Out from the Supply Side, *Public Choice* 116 (2003). pp. 399 – 417.

L. FESTINGER (1956), A *Theory of Cognitive Dissonance*, Stanford 1956.

P.K. FEYERABEND (1975), *Against Method*, New Left Book, New York 1975; 3rd revised edition: Verso, London and New York 1993.

P.K. FEYERABEND (1978), *Der wissenschaftstheoretische Realismus und die Autorität der Wissenschaften*, Vieweg, Braunschweig 1978.

P.K. FEYERABEND (1979), *Erkenntnis für freie Menschen*, Suhrkamp, Frankfurt 1979.

M.P. FIORINA (1997), Voting Behavior, in: D.C. MUELLER (1997), pp. 391 – 414.

A.J. FISCHER, (1999), The Probability of Being Decisive, *Public Choice* 101 (1991), pp. 267 – 283.

P.C. FISHBURN (1987), Reconsiderations in the Foundations of Decision Under Uncertainty, *Economic Journal* 97 (1987), pp. 825 – 841.

I. FISHER (1892), *Mathematical Investigations in the Theory of Value and Price*, Yale University Press, 1892. (Reprint 1925.)

I. FISHER (1892a), The Utility and History of Mathematical Method in Economics, Appendix III zu I. FISHER (1892), pp. 106 – 119.

S. FISCHER (1988), Recent Developments in Macroeconomics, *Economic Journal* 98 (1988), pp. 294 – 339.

S. FISCHER (1994), The Costs and Benefits of Disinflation, in: O. DE BEAUFORT WIJNHOLDS, S.C.W. EIJFFINGER and L.H. HOOGDUIN (eds.), *A Framework for Monetary Stability*, Kluwer, Dordrecht, 1994, pp. 31 – 42.

G. FLEISCHMANN (1966), *Nationalökonomie und sozialwissenschaftliche Integration*, Mohr (Siebeck), Tübingen 1966.

G. FLEISCHMANN (1988), Nationalökonomie und sozialwissenschaftliche Integration, *Jahrbuch für Neue Politische Ökonomie* 7 (1988), pp. 20 – 37.

J.W. FORRESTER (1971), Counterintuitive Behavior of Social Systems, *Theory and Decisions* 2 (1971), pp. 109 – 140.

M. FRANK and T. STENGOS (1988), Chaotic Dynamics in Economic Time Series, *Journal of Economic Surveys* 2 (1988), pp. 103 – 133.

R.H. FRANK (1985), The Demand for Unobservable and Other Nonpositional Goods, *American Economic Review* 75 (1985), pp. 101 – 116.

R.H. FRANK (1987), If Homo Economicus Could Choose His Own Utility Function, Would He Want One With a Conscience?, *American Economic Review* 77 (1987), pp. 593 – 604.

R.H. FRANK (1988), *Passions Within Reason: The Strategic Role of the Emotions,* W.W. Norton, New York/London 1988.

R.H. FRANK (1992), Melding Sociology and Economics: James Coleman's Foundations of Social Theory, *Journal of Economic Literature* 30 (1992), pp. 147 – 170.

R.H. FRANK (2005), Positional Externalities Cause Large and Preventable Welfare Losses, *American Economic Review* 95.2 (Papers and Proceedings) (2005), pp. 137 – 141.

H.G. FRANKFURT (1971), Freedom of the Will and the Concept of a Person, *Journal of Philosophy* 68 (1971), pp. 5 – 20.

P. FRANZ (1986), Der "Constraint Choice"-Ansatz als gemeinsamer Nenner individualistischer Ansätze in der Soziologie, Ein Vorschlag zur theoretischen Integration, *Kölner Zeitschrift für Soziologie und Sozialpsychologie* 38 (1986), pp. 32 – 54.

W. FRANZ (1982), Der Beitrag einiger neuerer mikroökonomischer Arbeitsmarkttheorien zur Erklärung der Arbeitslosigkeit, *Jahrbücher für Nationalökonomie und Statistik* 197 (1982), pp. 43 – 59.

F. FRASER-DARLING (1969), Man's Responsibility for the Environment, in: F.J. EBLING (ed.), *Biology and Ethics*, London 1969, pp. 117 – 122.

R.B. FREEMAN (1999), The Economics of Crime, in: O. ASHENFELTER and D. CARD (eds.), *Handbook of Labor Economic*s, Vol. 3, North-Holland, Amsterdam 1999, pp. 3529 – 3571.

B.S. FREY (1970), Die ökonomische Theorie der Politik oder die neue politische Ökonomie: Eine Übersicht, *Journal of Institutional and Theoretical Economics* 126 (1970), pp. 1 – 23.

B.S. FREY (1977), *Moderne Politische Ökonomie*, Piper, München 1977; English translation: *Modern Political Economy*, Wiley, New York 1978.

B.S. FREY (1979), Economic Policy by Constitutional Contract, *Kyklos* 32 (1979), pp. 307 – 319.

B.S. FREY (1980), Ökonomie als Verhaltenswissenschaft, *Jahrbuch für Sozialwissenschaft* 31 (1980), pp. 21 – 35.

B.S. FREY (1985), State and Prospect of Public Choice: A European View, *Public Choice* 46 (1985), pp. 141 – 161.

B.S. FREY (1986), Economists Favour the Price System – Who Else Does?, *Kyklos* 39 (1986), pp. 537 – 563.

B.S. FREY (1992), *Economics as a Science of Human Behaviour: Towards a New Social Science Paradigm*, Kluwer Academic Publishers, Boston/Dordrecht/ London, 2nd edition 1999.

B.S. FREY, (1992a), Tertium Datur: Pricing, Regulating and Intrinsic Motivation, *Kyklos* 45 (1992), pp. 161 – 184.

B.S. FREY, (1993), Does Monitoring Increase Work Effort? The Rivalry with Trust and Loyalty, *Economic Inquiry* 31 (1993), pp. 663 – 70.

B.S. FREY (1994), Supreme Auditing Institutions: A Politico-Economic Analysis, *European Journal of Law and Economics* 1 (1994), pp. 169 – 176.

B.S. FREY, (1997), *Not just for the money: An economic theory of personal motivation*, Edward Elgar, Cheltenham 1997.

B.S. FREY (1997a), A Constitution for Knaves Crowds Out Civic Virtues, *Economic Journal* 107 (1997), pp. 1043 – 1053.

B.S. FREY (2000), Leistung durch Anreizlohn? Grenzen marktlicher Anreizsysteme für Managerverhalten, *Zeitschrift für betriebswirtschaftliche Forschung* 44 (2000), pp. 67 – 95.

B.S. FREY and R.E. EICHENBERGER (1989), Zur Bedeutung entscheidungstheoretischer Anomalien für die Ökonomik, *Jahrbücher für Nationalökonomie und Statistik* 206 (1989), pp. 81 – 101.

B.S. FREY and R.E. EICHENBERGER (1991), Anomalies in Political Economy, *Public Choice* 68 (1991), pp. 71 – 89.

B.S. FREY and K. FOPPA (1986), Human Behavior: Possibilities Explain Action, *Journal of Economic Psychology* 7 (1986), pp. 137 – 160.

B.S. FREY and G. KIRCHGÄSSNER (1994), *Demokratische Wirtschaftspolitik: Theorie und Anwendung*, Vahlen, München 1994, 3rd edition 2002.

B.S. FREY and S. MEIER (2004), Pro-Social Behavior in a Natural Setting, *Journal of Economic Behavior and Organization* 54 (2004), pp. 65 – 88.

B.S. FREY and W.W. POMMEREHNE (1988), Für wie fair gilt der Markt? Eine empirische Untersuchung von Einschätzungen in der Bevölkerung, *Hamburger Jahrbuch für Wirtschafts- und Gesellschaftspolitik* 33 (1988), pp. 223 – 237.

B.S. FREY and W.W. POMMEREHNE (1989), *Muses and Markets, Explorations in the Economics of the Arts*, Basil Blackwell, Oxford 1989.

B.S. FREY and W.W. POMMEREHNE (1993), On the Fairness of Pricing: An Empirical Survey Among the General Population, *Journal of Economic Behavior and Organization* 20 (1993), pp. 295 – 307.

B.S. FREY and F. SCHNEIDER (1978), An Empirical Study of Politico-Economic Interaction in the United States, *The Review of Economics and Statistics* 60 (1978), pp. 174 – 183.

B.S. FREY and F. SCHNEIDER (1978a), A Politico-Economic Model of the United Kingdom, *The Economic Journal* 88 (1978), pp. 243 – 253.

B.S. FREY and F. SCHNEIDER (1979), An Econometric Model with an Endogenous Government Sector, *Public Choice* 34 (1979), pp. 29 – 43.

B.S. FREY and F. SCHNEIDER (1981), Central Bank Behavior, A Positive Empirical Analysis, *Journal of Monetary Economics* 7 (1981), pp. 291 – 315.

B.S. FREY and W. STROEBE (1980), Ist das Modell des Homo Oeconomicus "unpsychologisch"?, *Journal of Institutional and Theoretical Economics* 136 (1980), pp. 82 – 97.

B.S. FREY, M. BENZ and A. STUTZER (2004), Introducing Procedural Utility: Not only What, but also How Matters, *Journal of Institutional and Theoretical Economics* 160 (2004), pp. 377 – 401.

L.S. FRIEDMAN (1984), *Microeconomic Analysis*, McGraw-Hill, New York 1984.

M. FRIEDMAN (1948), A Monetary and Fiscal Framework for Economic Stability, *American Economic Review* 38 (1948), pp. 245 – 264.

M. FRIEDMAN (1953), The Methodology of Positive Economics, in: M. FRIEDMAN, *Essays in Positive Economics*, University of Chicago Press, Chicago 1953, pp. 3 – 43.

M. FRIEDMAN (1968), The Role of Monetary Policy, *American Economic Review* 58 (1968), pp. 1 – 17.

M. FRIEDMAN (1977), Nobel Lecture: Inflation and Unemployment, *Journal of Political Economy* 85 (1977), pp. 451 – 472.

M. FRIEDMAN (1986), Economists and Economic Policy, *Economic Inquiry* 24 (1986), pp. 1 – 10.

M. FRIEDMAN and L.J. SAVAGE (1948), The Utility Analysis of Choices Involving Risk, *Journal of Political Economy* 56 (1948), pp. 279 – 304.

A. FRINGS (2007), Rationales Handeln und historische Erklärung, *Journal of General Philosophy of Science* 38 (2007), pp. 31 – 56.

K.A. FROOT and R.H. THALER (1990), Anomalies: Foreign Exchange, *Journal of Economic Perspectives* 4/3 (1990), pp. 179 – 192.

F. FUKUYAMA (1995), *Trust: The Social Virtues and the Creation of Prosperity*, Free Press, New York et al. 1995.

A. FURNHAM and A. LEWIS (1986), *The Economic Mind, The Social Psychology of Economic Behaviour*, Wheatsheaf Books, Brighton 1986.

W. GAAB (1983), *Devisenmärkte und Wechselkurse, Eine theoretische und empirische Analyse*, Springer, Berlin/Heidelberg/New York 1983.

S. GÄCHTER and E. FEHR (1997), Social Norms as a Social Exchange, *Schweizerische Zeitschrift für Volkswirtschaft und Statistik* 133 (1997), pp. 275 – 292.

S. GÄCHTER, B. HERRMANN and C. THÖNI (2004); Trust, Voluntary Cooperation, and Socio-Economic Background: Survey and Experimental Evidence, *Journal of Economic Behavior and Organization* 55 (2004), pp. 505 – 531.

G. GÄFGEN (1963), *Theorie der wirtschaftlichen Entscheidung*, Mohr (Siebeck), Tübingen, 3rd edition 1974.

G. GÄFGEN (1976), Politische Ökonomie und Lehre von der Wirtschaftspolitik, Zur Realisierbarkeit wirtschaftspolitischer Vorschläge, in: H. KÖRNER et al. (eds.), *Wirtschaftspolitik, Wissenschaft und politische Aufgabe*, Haupt, Bern 1976, pp. 123 – 143.

G. GÄFGEN (1983), Institutioneller Wandel und ökonomische Erklärung, *Jahrbuch für Neue Politische Ökonomie* 2 (1983), pp. 19 – 49.

B. GAHLEN, H. HESSE and H.J. RAMSER (eds.) (1996), *Arbeitslosigkeit und Möglichkeiten ihrer Überwindung,* Mohr (Siebeck), Tübingen 1996.

J. GALE, K.G. BINMORE and L. SAMUELSON (1995), Learning to Be Imperfect: The Ultimatum Game, *Games and Economic Behavior* 8 (1995), pp. 56 – 90.

M. GÄRTNER (1994), Democracy, Elections, and Macroeconomic Policy, *European Journal of Political Economy* 10 (1994), pp. 85 – 109.

T.A. GARRETT and R.M. RHINE (2006), Does Government Spending Really Crowd Out Charitable Contributions? New Time Series Evidence, Federal Reserve Bank of St. Louis , Working Paper No. 2007-012A, March 2007.

M. GÄRTNER (2000), Political Macroeconomics: A Survey of Recent Developments, *Journal of Economic Surveys* 14 (2000), pp. 527 – 561.

M. GÄRTNER (2006), The Political Economy of Monetary Policy Conduct and Central Bank Design, University of St. Gallen, Department of Economics, Working Paper No. 2006-25, October 2006.

M. GÄRTNER and K.W. WELLERSHOFF (1995), Is There an Election Cycle in American Stock Returns?, *International Review of Economics and Finance* 4 (1995), pp. 387 – 410.

D. GAUTHIER, Coordination, *Dialogue* 14 (1975), pp. 195 – 221.

D. GAUTHIER (1986), *Morals by Agreement*, Clarendon Press, Oxford 1986.

J. GEANAKOPLOS (1987), Overlapping Generations Model of General Equilibrium, in: *The New Palgrave, A Dictionary of Economics*, Vol. 3, Macmillan, London 1987, pp. 767 – 779.

R. GELY and P.T. SPILLER (1990), A Rational Choice Theory of Supreme Court Statutory Decisions with Applications to the State Farm and Grove City Cases, *Journal of Law, Economics, and Organization* 6 (1990), pp. 263 – 213.

N. GEORGESCU-ROEGEN (1971), *The Entropy Law and the Economic Process*, Harvard University Press, Cambridge 1971.

N. GEORGESCU-ROEGEN (1975), Energy and Economic Myths, *Southern Economic Journal* 41 (1975), pp. 347 – 381.

H. GERFIN (1982), Informationsprobleme des Arbeitsmarktes, *Kyklos* 35 (1982), pp. 398 – 429.

M.T. GHISELIN (1974), *The Economy of Nature and the Evolution of Sex*, Berkeley 1974.

M.T. GHISELIN (1978), The Economy of the Body, *American Economic Review, Papers and Proceedings*, 68.2 (1978), pp. 233 – 237.

G. GIGERENZER (1994), Why the Distinction Between Single-Event Probabilities and Frequencies is Important for Psychology (and Vice Versa), in: G. WRIGHT and P. AYTON (eds.), *Subjective Probability*, Wiley, Chichester et al. 1994, pp. 129 – 160.

G. GIGERENZER (1997), Bounded Rationality Models of Fast and Frugal Inference, *Schweizerische Zeitschrift für Volkswirtschaft und Statistik* 133 (1997), pp. 201 – 218.

G. GIGERENZER and D.G. GOLDSTEIN (1996), Reasoning the Fast and Frugal Way: Models of Bounded Rationality, *Psychological Review* 103 (1996), pp. 650 – 669.

E. GLAESER, D.I. LAIBSON, J.A. SCHEINKMAN and CH.L. SOUTTER (2000), Measuring Trust, *Quarterly Journal of Economics* 115 (2000), pp. 811 – 846.

B. GOFF (2006), Supreme Court Consensus and Dissent: Estimating the Role of the Selection Screen, *Public Choice* 127 (2006), pp. 483 – 489.

C.A.E. GOODHART and R.J. BHANSALI (1970), Political Economy, *Political Studies* 18 (1970), pp. 43 – 106.

W. v. GOOL and J.J.C. BRUGGINK (eds.) (1985), *Energy and Time in the Economic and Physical Sciences*, North-Holland, Amsterdam 1985.

R.J. GORDON (1990), What is New-Keynesian Economics?, *Journal of Economic Literature* 28 (1990), pp. 1115 – 1171.

R.J. GORDON (1997), The Time-Varying NAIRU and its Implications for Economic Policy, *Journal of Economic Perspectives* 11/1 (1997), pp. 11 – 32.

S. GORDON (1979), A Critique of Sociobiology, Institute for Economic Research, University, Discussion Paper No. 346, Kingston, Ontario 1979.

S. GORDON (1980), Sociobiology, *Transactions of the Royal Society of Canada*, Series 4, 18 (1980), pp. 239 – 246.

S. GORDON (1981), The Political Economy of F.A. v. Hayek, *Canadian Journal of Economics* 14 (1981), pp. 470 – 487.

S.J. GOULD (1976), Biological Potential vs. Biological Determinism, *Natural History Magazine*, May 1976; reprinted in und quoted from: A.L. CAPLAN (1978), pp. 343 – 351.

S.J. GOULD (1980), Sociobiology and the Theory of Natural Selection, in: G.W. BARLOW and J. SILVERBERG (1980), pp. 257 – 269.

A.W. GOULDNER (1960), The Norm of Reciprocity: A Preliminary Statement, *American Sociological Review* 25 (1960), pp. 161 – 178.

L. GRAHAM and D.J. SNOWER (2002), The Return of the Long-Run Phillips Curve, CEPR Discussion Paper No. 3691, January 2003.

W.D. GRAMPP (2000), What Did Smith Mean by the Invisible Hand?, *Journal of Political Economy* 108 (2000), pp. 441 – 465.

D.P. GREEN and I. SHAPIRO (1994), *Pathologies of Rational Choice: A Critique of Applications in Political Science*, Yale University Press, New Haven 1994.

P. DE GRAUWE (1989), Disinflation in the EMS and in the Non-EMS Countries, What Have We Learned?, *Empirica* 16 (1989), pp. 161 – 176.

F. GUALA (2000), Artefacts in Experimental Economics: Preference Reversals and the Becker-Degroot-Marschak Mechanism, *Economics and Philosophy* 16 (2000), pp. 47 – 75.

W.E. GULIJEW (1977), Die relative Selbständigkeit des Staates, *Marxismus Digest* 32 (1977), pp. 32 – 53.

W. GÜTH (1995), On Ultimatum Bargaining Experiments: A Personal View *Journal of Economic Behavior and Organization* 27 (1995), pp. 329 – 344.

W. GÜTH and H. KLIEMT (1994), Competition or Cooperation: On the Evolutionary Economics of Trust, Exploitation and Moral Attitudes, *Metroeconomica* 45 (1994), pp. 155 – 187.

W. GÜTH, R. SCHMITTBERGER und B. SCHWARZE (1982), An Experimental Analysis of Ultimatum Bargaining, *Journal of Economic Behavior and Organization* 3 (1982), pp. 367 – 388.

J. HABERMAS (1971), Vorbereitende Bemerkungen zu einer Theorie der kommunikativen Kompetenz, in: J. HABERMAS and N. LUHMANN (eds.), *Theorie der Gesellschaft oder Sozialtechnologie*, Suhrkamp, Frankfurt 1971, pp. 101 – 141.

J. HABERMAS (1973), *Legitimationsprobleme im Spätkapitalismus*, Suhrkamp, Frankfurt 1973; English translation: *Legitimation Crisis*, Heinemann, London 1976.

J. HABERMAS (1983), *Moralbewusstsein und kommunikatives Handeln*, Suhrkamp, Frankfurt 1983; English translation: *Moral Consciousness and Communicative Action*, MIT Press, Cambridge (Mass.) 1990.

J. HABERMAS (1991), *Erläuterungen zur Diskursethik*, Suhrkamp, Frankfurt 1991.
M.S. HAIGH, N.E. BOYD and B. BUYUKSAHIN (2007), Herding Among Large Speculative Traders in Futures Markets, mimeo, George Washington University, Department of Finance, Washington D.C., April 2007.
J.B.S. HALDANE (1932), *The Causes of Evolution*, Longmans, London 1932.
J.B.S. HALDANE (1957), The Cost of Natural Selection, *Journal of Genetics* 55 (1957), pp. 511 – 524.
D.S. HAMERMESH and N.M. SOSS (1974), An Economic Theory of Suicide, *Journal of Political Economy* 82 (1974), pp. 83 – 98.
W.D. HAMILTON (1964), The Genetics of Evolution of Social Behaviour, *Journal of Theoretical Biology* 7 (1964), pp. 1 – 52.
P. HAMMOND (1975), Charity: Altruism or Cooperative Egoism, in: E.S. PHELPS (ed.), *Altruism, Morality, and Economic Theory*, Russel Sage Foundation, New York 1975, pp. 115 – 131.
D.W. HANDS (1985), Karl Popper and Economic Methodology, *Economics and Philosophy* 1 (1985), pp. 63 – 99.
M.T. HANNAN (1982), Families, Markets, and Social Structures: An Essay on Becker's `A Treatise on the Family', *Journal of Economic Literature* 20 (1982), pp. 65 – 72.
H. HANSMANN (1981), Nonprofit Enterprise in the Performing Arts, *Bell Journal of Economics* 12 (1981), pp. 341 – 361.
F.A. HANSSEN (1999), The Effect of Judicial Institutions on Uncertainty and the Rate of Litigation: The Election versus Appointment of State Judges, *Journal of Legal Studies* 28 (1999), pp. 205 – 232.
F.A. HANSSEN (2000), Independent Courts and Administrative Agencies: An Empirical Analysis of the States, *Journal of Law, Economics and Organization* 16 (2000), pp. 534 – 571.
F.A. HANSSEN (2004), Is There a Politically Optimal Level of Judicial Independence?, *American Economic Review* 94 (2004), pp. 712 – 729.
A.C. HARBERGER (1993), Secrets of Success: A Handful of Heroes, *American Economic Review, Papers and Proceedings*, 83.2 (1993), pp. 343 – 350.
G. HARDIN (1968), The Tragedy of the Commons, *Science* 162 (1968), pp. 1243 – 1248.
F.O. HARDING (1959), *Politisches Modell zur Wirtschaftstheorie*, Freiburg 1959.
R.M. HARE (1973), Rawls' Theory of Justice, *Philosophical Quarterly* 23 (1973), pp. 144 – 155, pp. 241 – 251; reprinted in: N. DANIELS (ed.), *Reading Rawls, Critical Studies of A Theory of Justice*, Basil Blackwell, Oxford 1975, pp. 81 – 107.
J.C. HARSANYI (1953), Cardinal Utility in Welfare Economics and in the Theory of Risk-Taking, *Journal of Political Economy* 61 (1953), pp. 434 – 435.
J.C. HARSANYI (1955), Cardinal Welfare, Individualistic Ethics and Interpersonal Comparisons of Utility, *Journal of Political Economy* 63 (1955), pp. 309 – 321.
J.C. HARSANYI (1969), Rational-Choice Models of Political Behavior vs. Functionalist and Conformist Theories, *World Politics* 21 (1968/69), pp. 513 – 538.

J.C. HARSANYI (1975), Can the Maximim Principle Serve as a Basis of Morality?, A Critique of John Rawls's Theory, *American Political Science Review* 69 (1975), pp. 594 – 606.
J.C. HARSANYI (1977), Morality and the Theory of Rational Behaviour, *Social Research* 44 (1977), pp. 623 – 656.
G. HARTFIEL (1968), *Wirtschaftliche und Soziale Rationalität*, Enke, Stuttgart 1968.
J.E. HARTLEY (1996), Retrospectives: The Origins of the Representative Agent, *Journal of Economic Perspectives* 10/2 (1996), pp. 169 – 177.
D.M. HAUSMAN (1985), Is Falsificationism Unpractised or Unpractisable?, *Philosophy of Social Sciences* 15 (1993), pp. 313 – 319.
D.M. HAUSMAN (1992), *The Inexact and Separate Science of Economics*, Cambridge University Press, Cambridge (Mass.) 1992.
D.M. HAUSMAN (1996), Economics as Separate and Inexact, *Economics and Philosophy* 12 (1996), pp. 207 – 220.
D.M. HAUSMAN and M.S. MCPHERSON (1993), Taking Ethics Seriously: Economics and Contemporary Moral Philosophy, *Journal of Economic Literature* 31 (1993), pp. 671 – 731.
TH. HAVRILESKY (1991), The Federal Reserve Chairman as Hero: Our Defense Against Monetary Excesses?, *Cato Journal* 11 (1991), pp. 65 – 72.
F.A. V.HAYEK (1944), *The Road to Serfdom*, Routledge, London 1944.
F.A. V.HAYEK (1945), The Use of Knowledge in Society, *American Economic Review* 35 (1945), pp. 519 – 530.
F.A. V.HAYEK (1949), *Individualism and Economic Order*, Routledge and Kegan Paul, London 1949.
F.A. V.HAYEK (1952), *The Counter Revolution of Science: Studies in the Abuse of Reason*, The Free Press, Glencoe 1952.
F.A. V.HAYEK (1960), *The Constitution of Liberty*, Routledge and Kegan Paul, London 1960.
F.A. V.HAYEK (1973), La*w, Legislation and Liberty: A New Statement of the Liberal Principles of Justice and Political Economy, Vol. 1: Rules and Order*, University of Chicago Press, Chicago 1973.
F.A. V.HAYEK (1976), La*w, Legislation and Liberty: A New Statement of the Liberal Principles of Justice and Political Economy, Vol. 2: The Mirage of Social Justice*, University of Chicago Press, Chicago 1976.
F.A. V. HAYEK (1977), *Drei Vorlesungen über Demokratie, Gerechtigkeit und Sozialismus*, Mohr (Siebeck), Tübingen 1977.
F.A. V. HAYEK (1979), *Law, Legislation and Liberty: A New Statement of the Liberal Principles of Justice and Political Economy, Vol. 3: The Political Order of a Free People*, University of Chicago Press, Chicago 1979.
M. HECHTER, K.-D. OPP and R. WIPPLER (1990), *Social Institutions: Their Emergence, Maintenance, and Effects*, Walter de Gruyter, Berlin/New York 1990.
R. HEGSELMANN (1992), Moralität im iterativen Gefangenen-Dilemma, in: M. HOLLIS und W. VOSSENKUHL (ed.), *Moralische Entscheidung und rationale Wahl*, Oldenbourg, München 1992 pp. 183 – 190.

R.A. HEINER (1983), The Origin of Predictable Behavior, *American Economic Review* 73 (1983), pp. 560 – 595.

R.A. HEINER (1990), Rule Governed Behavior in Evolution and Human Society, *Constitutional Political Economy* 1 (1990), pp. 19 – 46.

M.A. HELLER (1998), The Tragedy of the Anticommons: Property in the Transition from Marx to Markets, *Harvard Law Review* 111 (1998), pp. 621 – 688.

C.G. HEMPEL (1961), Rational Action, *Proceedings and Addresses of the American Philosophical Association* 35 (1961/62), pp. 5 – 23

C.G. HEMPEL (1962), Explanation in Science and History, in: R.G. COLDONY (ed.), *Frontiers of Science and Philosophy*, University of Pittsburg Press, Pittsburg 1962, pp. 7 – 33.

C.G. HEMPEL (1965), *Aspects of Scientific Explanation, And Other Essays in the Philosophy of Science*, The Free Press, New York 1965.

C.G. HEMPEL and P. OPPENHEIM (1948), Studies in the Logic of Explanation, *Philosophy of Science* 15 (1948), pp. 135 – 175; reprinted in: H. FEIGL and M. BRODBECK (eds.), *Readings in the Philosophy of Science*, Appleton-Century-Crofts, New York 1953, pp. 319 – 352.

H. HENDERSON (1985), *Das Ende der Ökonomie, Die ersten Tage des nachindustriellen Zeitalters*, Dianus-Trikont, München 1985.

D.A. HIBBS (1977), Political Parties and Macroeconomic Policy, *American Political Science Review* 71 (1977), pp. 1467 – 1487.

D.A. HIBBS (1992), Partisan Theory After Fifteen Years, *European Journal of Political Economy* 8 (1992), pp. 361 – 373.

D.A. HIBBS (1994), The Partisan Model of Macroeconomic Cycles: More Theory and Evidence for the United States, *Economics and Politics* 6 (1994), pp. 1 – 23.

J.R. HICKS (1939), *Value and Capital, An Inquiry into Some Fundamental Principles of Economic Theory*. Oxford University Press, Oxford 1939. (2nd edition 1946.)

J. HIGH (1982), Alertness and Judgement: Comment on Kirzner, in: I.M. KIRZNER (1982a), pp. 161 – 168.

J.R. HINES and R.H. THALER (1995), The Flypaper Effect, *Journal of Economic Perspectives* 9/4 (1995), pp. 217 – 226.

F. HIRSCH (1977), *Social Limits to Growth*, Harvard University Press, Cambridge 1976.

A.O. HIRSCHMAN (1970), *Exit, Voice, and Loyalty*, Harvard University Press, Cambridge (Mass.) 1970.

A.O. HIRSCHMAN (1977), *The Passions and the Interest: Political Arguments for Capitalism before its Triumph*, Princeton University Press, Princeton 1977.

J. HIRSHLEIFER (1977), Economics from a Biological Viewpoint, *Journal of Law and Economics* 20 (1977), pp. 1 – 52.

J. HIRSHLEIFER (1978), Natural Economy Versus Political Economy, *Journal of Social and Biological Structures* 1 (1978), pp. 319 – 337; reprinted in: J. HIRSHLEIFER (1987), pp. 169 – 193.

J. HIRSHLEIFER (1982), Evolutionary Models in Economics and Law: Cooperation versus Conflict Strategies, *Research in Law and Economics* 4 (1982), pp. 1 – 60; reprinted in: J. HIRSHLEIFER (1987), pp. 211 – 272.

J. HIRSHLEIFER (1985), The Expanding Domain of Economics, *American Economic Review* 75.6 (1985), pp. 53 – 68.

J. HIRSHLEIFER (1987), *Economic Behaviour in Adversity*, Wheatsheaf Books, Brighton 1987.

N. HOERSTER (1982), Rechtsethik ohne Metaphysik, *Juristenzeitung* 37 (1982), pp. 265 – 272, pp. 714 – 716.

N. HOERSTER (1983), Moralbegründung ohne Metaphysik, *Erkenntnis* 19 (1983), pp. 225 – 238.

O. HÖFFE (1975), *Strategien der Humanität, Zur Ethik öffentlicher Entscheidungsprozesse*, Karl Alber, Freiburg 1975.

O. HÖFFE (1987), *Politische Gerechtigkeit, Grundlegung einer kritischen Philosophie von Recht und Staat*, Suhrkamp, Frankfurt 1987; English translation: *Political Justice: Foundations for a Critical Philosophy of the Law and the State*, Basil Blackwell, Cambridge (Mass.) 1995.

O. HÖFFE (1988), Soll der Philosoph König sein?, in: O. HÖFFE, *Den Staat braucht selbst ein Volk von Teufeln, Philosophische Versuche zur Rechts- und Staatsethik*, Reclam, Stuttgart 1988, pp. 8 – 23.

R.M. HOGARTH and M.W. REDER (eds.) (1987), *Rational Choice*, Chicago University Press, Chicago 1987.

H. HOLCOMB and J. BYRON (2005), Sociobiology, in: *Stanford Encyclopedia of Philosophy*; http://plato.stanford.edu/entries/sociobiology/ (07/12/07).

K. HOMANN (1988), Philosophie und Ökonomik, Bemerkungen zur Interdisziplinarität, *Jahrbuch für Neue Politische Ökonomie* 7 (1988), pp.99 – 127.

K. HOMANN and CH. KIRCHNER (1995), Ordnungsethik, *Jahrbuch für Neue Politische Ökonomie* 14 (1995), pp. 189 – 211.

K. HOMANN and I. PIES (1994), Wirtschaftsethik in der Moderne: Zur ökonomischen Theorie der Moral, *Ethik und Sozialwissenschaften* 5 (1994), pp. 3 – 12.

K. HOMANN and A. SUCHANEK (1989), Methodologische Überlegungen zum ökonomischen Imperialismus, *Analyse und Kritik* 11 (1989), pp. 70 – 93.

K. HOMANN and A. SUCHANEK (2000), *Ökonomik: Eine Einführung*, Mohr (Siebeck), Tübingen 2000.

G.C. HOMANS (1958), Social Behavior as Exchange, *American Journal of Sociology* 63 (1957/58), pp. 597 – 606.

G.C. HOMANS (1961), *Social Behavior: Its Elementary Forms*, Harcourt, Brace and World, New York 1961.

K.D. HOOVER (1988), *The New Classical Macroeconomics: A Sceptical Inquiry*, Basil Blackwell, Oxford 1988.

K.D. HOOVER (ed.) (1992), *The New Classical Macroeconomics*, Volume I – III, Edward Elgar, Aldershot 1992.

H. HOTELLING (1929), Stability in Competition, *Economic Journal* 39 (1929), pp. 41 – 57.

H.S. HOUTHAKKER (1956), Economics and Biology: Specialization and Speciation, *Kyklos* 9 (1956), pp. 181 – 189.

D. HUME (1739), *A Treatise of Human Nature*, John Noon, London 1730; reprinted by: Clarendon Press, Oxford, 1978.

D. HUME (1741), That Politics May Be Reduced to a Science, reprinted in: D. HUME, *Essays: Moral, Political, and Literary*, A. Kincaid/A. Donaldson, Edinburgh 1758, pp. 98 – 109.

D. HUME (1741a), On the Independency of Parliament, reprinted in: D. HUME, *Essays: Moral, Political, and Literary*, A. Kincaid/A. Donaldson, Edinburgh 1758, pp. 117 – 122.

H.J. HUMMEL and K.-D. OPP (1971), *Die Reduzierbarkeit von Soziologie auf Psychologie*, Vieweg, Braunschweig 1971.

T.W. HUTCHINSON (1981), On the Aims and Methods of Economic Theorizing, in: T.W. HUTCHINSON (ed.), *The Politics and Philosophy of Economics: Marxians, Keynesians and Austrians*, New York University Press, New York and London 1981, pp. 266 – 307.

M. HUXHAM und D. SUMNER (1999), Emotion, Science and Rationality: The Case of the Brent Spar, *Environmental Values* 8 (1999), pp. 349 – 368.

G. ILLING (1992), *Neue Keynesianische Makroökonomik*, J.C.B. Mohr (Paul Siebeck), Tübingen 1992.

G. ILLING (1997) *Theorie der Geldpolitik: Eine spieltheoretische Einführung*, Springer, Berlin et al. 1997.

K. JAEGER, (1996), Gewerkschaftsverhalten und Arbeitslosigkeit, in: B. GAHLEN, H. HESSE und H.J. RAMSER (1996), pp. 179 – 209.

A.J. JAIN (2001), Corruption: A Review, *Journal of Economic Surveys* 15 (2001), pp. 71 – 121.

P. JANICH (1979), Möglichkeiten und Grenzen quantitativer Methoden, in: J. MITTELSTRASS (ed.), *Methodenprobleme der Wissenschaften vom gesellschaftlichen Handeln*, Suhrkamp, Frankfurt 1979, pp. 370 – 383.

P. JANICH, F. KAMBARTEL and J. MITTELSTRASS (1974), *Wissenschaftstheorie als Wissenschaftskritik*, Aspekte Verlag, Frankfurt 1974.

B. JESSOP (1977), Recent Theories of the Capitalist State, *Cambridge Journal of Economics* 1 (1977), pp. 353 – 373.

W.S. JEVONS (1871), *The Theory of Political Economy*, London 1871, 3rd edition 1888.

CH. JOCHUM (1999), *Stock Market Volatility: Estimation and Causes, An Investigation into the Nature of Stock Market Risk*, Dissertation, University of Sty. Gallen, April 1999.

P.N. JOHNSON-LAIRD and P.C. WASON (1970), Insight into a Logical Relation, Quarterly *Journal of Experimental Psychology* 22 (1970), pp. 49 – 61.

P.N. JOHNSON-LAIRD and P.C. WASON (1977), A Theoretical Analysis of Insight into a Reasoning Task, in: P.N. JOHNSON-LAIRD and P.C. WASON (eds.), *Thinking, Readings in Cognitive Science*, Cambridge University Press, Cambridge 1977, pp. 143 – 157.

G. JONES (1980), *Social Darwinism and English Thought, The Interaction Between Biology and Social Theory*, Harvester Press, Sussex 1980.

L.B. JONES (1989), Schumpeter versus Darwin: In Re Malthus, S*outhern Economic Journal* 52 (1989), pp. 410 – 422.

PH. JONES and J. HUDSON (2000), Civic Duty and Expressive Voting: Is Virtue its Own Reward?, *Kyklos* 53 (2000), pp. 3 – 16.

P.-A. JOUVET, PH. MICHEL and J.-P. VIDAL (2000), Intergenerational Altruism and the Environment, *Scandinavian Journal of Economics* 102 (2000), pp. 135 – 150.

D. KAHNEMAN and A. TVERSKY (1973), On the Psychology of Prediction, *Psychological Review* 80 (1973), pp. 237 – 251.

D. KAHNEMAN and A. TVERSKY (1979), Prospect Theory: An Analysis of Decision under Risk, *Econometrica* 47 (1979), pp. 263 – 291.

D. KAHNEMAN and A. TVERSKY (1982), Variants of Uncertainty in D. KAHNEMAN, P. SLOVIC and A. TVERSKY(1982), pp. 509 – 520.

D. KAHNEMAN, J.L. KNETSCH und R.H. THALER (1986), Fairness and the Assumptions of Economics, *Journal of Business* 59 (1986), pp. S285 – S300.

D. KAHNEMAN, J.-L. KNETSCH and R.H. THALER (1991), The Endowment Effect, Loss Aversion, and Status Quo Bias, *Journal of Economic Perspectives* 5/1 (1991), pp. 193 – 206.

D. KAHNEMAN, P. SLOVIC and A. TVERSKY(1982), *Judgement Under Uncertainty, Heuristics and Biases*, Cambridge University Press, Cambridge 1982.

F. KAMBARTEL (1974) (ed.), *Praktische Philosophie und konstruktive Wissenschaftstheorie*, Suhrkamp, Frankfurt 1974.

F. KAMBARTEL (1974a), Moralisches Argumentieren, Methodische Analysen zur Ethik, in: F. KAMBARTEL (1974), pp. 54 – 72.

F. KAMBARTEL (1975), Bemerkungen zum normativen Fundament der Ökonomie, in: J. MITTELSTRASS (ed.), *Methodologische Probleme einer normativ-kritischen Gesellschaftstheorie*, Suhrkamp, Frankfurt 1975, pp. 107 – 125.

F. KAMBARTEL (1976), *Theorie und Begründung: Studien zum Philosophie- und Wissenschaftsverständnis*, Suhrkamp, Frankfurt 1976.

F. KAMBARTEL (1979), Ist rationale Ökonomie als empirisch-quantitative Wissenschaft möglich?, in: J. MITTELSTRASS (ed.), *Methodenprobleme der Wissenschaften vom gesellschaftlichen Handeln*, Suhrkamp, Frankfurt 1979, pp. 299 – 319.

I. KANT (1785), *Grundlegung zur Metaphysik der Sitten*, Johann Friedrich Hartknoch, Riga 1785; English translation in: *Foundations of the Metaphysics of Morals, and What is Enlightenment*?, Macmillan, London 1985.

I. KANT (1787), *Kritik der reinen Vernunft*, Preussische Akademie der Wissenschaften, 2nd edition, Berlin 1787: English translation: *The Critique of Pure Reason*, Macmillan, London 1958.

L. KAPLOW and ST. SHAVELL (2002), Economic Analysis of Law, in: A.J. AUERBACH and M. FELDSTEIN (eds.), *Handbook of Public Economics*, Vol. 3, North-Holland, Amsterdam 2002, pp. 1661 – 1784.

A. KAPTEYN and T. WANSBEEK (1982), Empirical Evidence on Preference Formation, *Journal of Economic Psychology* 2 (1982), pp. 137 – 154.

A. KAPTEYN, T. WANSBEEK and J. Buyze (1979), Maximizing or Satisficing?, *The Review of Economics and Statistics* 61 (1979), pp. 549 – 563.

M. KARANASSOU, H. SALA and D.J. SNOWER (2003), The European Phillips Curve: Does the NAIRU Exist?, *Applied Economics Quarterly* 49 (2003), pp. 93 – 121.

M. KARANASSOU, H. SALA and D.J. SNOWER (2003a), Unemployment in the European Union: A Dynamic Reappraisal, *Economic Modelling* 20 (2003), pp. 237 – 273.

M. KARANASSOU, H. SALA and D.J. SNOWER (2005), A Reappraisal of the Inflation–Unemployment Trade-Off, *European Journal of Political Economy* 21 (2005), pp. 1 – 32.

G. KATONA (1951), Psychological Analysis of Economic Behavior, McGraw-Hill, New York 1951.

G. KATONA (1960), *The Powerful Consumer*, New York 1960.

G. KATONA (1975), *Psychological Economics*, Elsevier, Amsterdam/New York 1975.

K. KAUFMANN-MALL (1978), *Kognitiv-hedonistische Theorie menschlichen Verhaltens*, Huber, Bern 1978.

K. KAUFMANN-MALL (1981), Grundzüge einer kognitiv-hedonistischen Theorie menschlichen Verhaltens, in: H. LENK (ed.), *Handlungstheorien – interdisziplinär*, Vol. 3.1, Wilhelm Fink, München 1981, pp. 123 – 189.

A. KEEL (1982), Zur Diskussion um den Landesindex der Konsumentenpreise, *Schweizerische Zeitschrift für Volkswirtschaft und Statistik* 118 (1982), pp. 59 – 67.

S. KELMAN (1981), *What Price Incentives?, Economists and the Environment*, Auburn House, Boston 1981.

A. KEMPF and S. RUENZI (2006), Status Quo Bias and the Number of Alternatives: An Empirical Illustration from the Mutual Funds Industry, *Journal of Behavioural Finance* 7 (2006), pp. 204 – 213.

J. V. KEMPSKI (1956), Über die Einheit der Sozialwissenschaft, *Journal of Institutional and Theoretical Economics* 112 (1956), pp. 385 – 397.

J.M. KEYNES (1936), *The General Theory of Employment, Interest, and Money*, Macmillan, London 1936.

J.M. KEYNES (1944), Letter to F.A. v. Hayek of June 28, 1944, reprinted in: *The Collective Writings of John Maynard Keynes*, Vol. 27, Macmillan, London 1980, pp. 385 – 388.

E.L. KHALIL (2004), What is Altruism?, *Journal of Economic Psychology* 25 (2004), pp. 97 – 123.

D. KIEFER (1997), *Macroeconomic Policy and Public Choice*, Springer, Berlin et al., 2nd edition 1999.

K. KIM and A.R. PAGAN (1995), The Econometric Analysis of Calibrated Macroeconomic Models, in: M.H. PESARAN and M. WICKENS (eds.), *Handbook of Econometrics: Macroeconomics*, Blackwell, Oxford 1995, pp. 356 – 390.

R.G. KING and M.W. WATSON (1994), The Post-War U.S. Phillips Curve, *Carnegie-Rochester Conference Series on Public Policy* 41 (1994), pp. 157 – 219.

G. KIRCHGÄSSNER (1977), Ein neues Fundament der Ökonomie?, Bemerkungen zu: Friedrich Kambartel, Bemerkungen zum normativen Fundament der Ökonomie, *Zeitschrift für allgemeine Wissenschaftstheorie* 8 (1977), pp. 118 – 131.

G. KIRCHGÄSSNER (1980), Können Ökonomie und Soziologie voneinander lernen?, Zum Verhältnis zwischen beiden Wissenschaften, mit besonderem Bezug auf die Theorie des Wählerverhaltens, *Kyklos* 33 (1980), pp. 420 – 448.

G. KIRCHGÄSSNER (1982), Zwischen Dogma und Dogmatismusvorwurf, Bemerkungen zur Diskussion zwischen Kritischem Rationalismus und konstruktivistischer Wissenschaftstheorie, *Jahrbuch für Sozialwissenschaft* 33 (1982), pp. 64 – 91.

G. KIRCHGÄSSNER (1983), Ökonometrie: Datenanalyse oder Theorienüberprüfung, *Jahrbücher für Nationalökonomie und Statistik* 198 (1983), pp. 511 – 538.

G. KIRCHGÄSSNER (1983a),The Political Business Cycle if the Government is Not Myopic, *Mathematical Social Sciences* 4 (1983), pp. 243 – 260.

G. KIRCHGÄSSNER (1984), *Optimale Wirtschaftspolitik und die Erzeugung politisch-ökonomischer Konjunkturzyklen*, Hain, Königstein 1984.

G. KIRCHGÄSSNER (1985), Rationales Verhalten und vernünftiges Handeln, ein Widerspruch?, in: H. MILDE and H.G. MONISSEN (eds.), *Rationale Wirtschaftspolitik in komplexen Gesellschaften*, Kohlhammer, Stuttgart 1985, pp. 29 – 41.

G. KIRCHGÄSSNER (1985a), Ist 'rationale' Wirtschaftspolitik möglich?, Zu den Auswirkungen der Theorie rationaler Erwartungen und der ökonomischen Theorie der Politik auf die Theorie der Wirtschaftspolitik, *Konjunkturpolitik* 31 (1985),pp. 209 – 237.

G. KIRCHGÄSSNER (1986), Rationale Erwartungen und ökonomische Theorie der Politik, *Jahrbuch für Neue Politische Ökonomie* 5 (1986), pp. 103 – 121.

G. KIRCHGÄSSNER (1988), Ökonomie als imperial(istisch)e Wissenschaft, *Jahrbuch für Neue Politische Ökonomie* 7 (1988), pp. 128 – 145.

G. KIRCHGÄSSNER (1989), On the Political Economy of Economic Policy, *Economia delle scelte publiche* 7 (1989), pp. 111 – 123.

G. KIRCHGÄSSNER (1992), Towards a Theory of Low-Cost Decisions, *European Journal of Political Economy* 8 (1992), pp. 305 – 320.

G. KIRCHGÄSSNER (1992a), Haftungsrecht und Schadensersatzansprüche als umweltpolitische Instrumente, *Zeitschrift für Umweltpolitik und Umweltrecht* 15 (1992), pp. 15 – 44.

G. KIRCHGÄSSNER (1993), Hält sich der Homo oeconomicus an Regeln?, Einige Bemerkungen zur Rolle von Normen und Regeln im Rahmen der Konzeption des ökonomischen Verhaltensmodells, *Jahrbuch für Neue Politische Ökonomie* 12 (1993), pp. 181 – 197.

G. KIRCHGÄSSNER (1993a), Testing Weak Rationality of Forecasts with Different Time Horizons, *Journal of Forecasting* 12 (1993), pp. 541 – 558.

G. KIRCHGÄSSNER (1993b), Vom Nutzen der Wirtschaftstheorie für die Wirtschaftspolitik, *Konjunkturpolitik* 39 (1993), pp. 201 – 225.

G. KIRCHGÄSSNER (1996), Bewusst erzeugte und duldend hingenommene Arbeitslosigkeit: Zum Problem der Arbeitslosigkeit aus der Sicht der Neuen Politischen Ökonomie, in: B. GAHLEN, H. HESSE und H.J. RAMSER (1996), pp. 396 – 432.

G. KIRCHGÄSSNER (1996a), Geldpolitik und Zentralbankverhalten aus der Sicht der Neuen Politischen Ökonomie, in: P. BOFINGER und K.-H. KETTERER (eds.), *Neuere Entwicklungen in der Geldtheorie und Geldpolitik: Implikationen für die Europäische Währungsunion*, Mohr (Siebeck), Tübingen 1996, pp. 21 – 41.

G. KIRCHGÄSSNER (1996b), Ideologie und Information in der Politikberatung: Einige Bemerkungen und ein Fallbeispiel, *Hamburger Jahrbuch für Wirtschafts- und Gesellschaftspolitik* 41 (1996), pp. 9 – 41.

G. KIRCHGÄSSNER (1997), Auf der Suche nach dem Gespenst des Ökonomismus: Einige Bemerkungen über Tausch, Märkte und die Ökonomisierung der Lebensverhältnisse, *Analyse und Kritik* 19 (1997), pp. 127 – 152.

G. KIRCHGÄSSNER (1997a), Nachhaltigkeit in der Umweltnutzung: Einige Bemerkungen, *Zeitschrift für Umweltpolitik und Umweltrecht* 20 (1997), pp. 1 – 34.

G. KIRCHGÄSSNER (1999), On the Political Economy of Economic Policy Advice, in: E. MOHR (ed.), *The Transfer of Economic Knowledge*, Edward Elgar, Cheltenham 1999, pp. 13 – 31.

G. KIRCHGÄSSNER (2000), Die Bedeutung moralischen Handelns für die Umweltpolitik, *GAiA* 9 (2000), pp. 41 – 49.

G. KIRCHGÄSSNER (2000a), Probabilistic Voting and Equilibrium: An Impossibility Result, *Public Choice* 103 (2000), pp. 35 – 48.

G. KIRCHGÄSSNER (2001), On Heroes and Average Moral Human Beings, University of St. Gallen Department of Economics, Discussion Paper No. 2001-21, December 2001.

G. KIRCHGÄSSNER (2002), Gemeinwohl in der Spannung von Wirtschaft und politischer Organisation: Bemerkungen aus ökonomischer Perspektive, in: W. BRUGGER, S. KIRSTE und M. ANDERHEIDEN (eds.), *Gemeinwohl in Deutschland, Europa und der Welt*, Nomos, Baden-Baden 2002, pp. 289 – 326.

G. KIRCHGÄSSNER (2004), Empirical Economic Research and Economic Policy Advice: Some Remarks, in: K. AIGINGER und G. HUTSCHENREITER (eds.), *Economic Policy Issues fort he Next Decade*, Kluwer, Boston et al. 2004, pp. 265 – 288.

G. KIRCHGÄSSNER (2005), (Why) Are Economists Different?, *European Journal of Political Economy* 21 (2005), pp. 543 – 542.

G. KIRCHGÄSSNER (2005a), The Weak Rationality Principle in Economics, CESifo Working Paper No. 1410, Munich, February 2005.

G. KIRCHGÄSSNER (2005b), On the Political Economy of Economic Policy Advice: With Applications of Environmental Policy, in: CH. BÖHRINGER und A. LANGE (eds.), *Applied Research in Environmental Economics*, Physica, Heidelberg/New York 2005, pp. 277 – 298

G. KIRCHGÄSSNER (2006), Wertfreiheit und Objektivität in den Wirtschaftswissenschaften: Mythos oder Realität, in: G. ZECHA (ed.), *Werte in den Wissenschaften: 100 Jahre nach Max Weber*, Mohr Siebeck, Tübingen 2006, pp. 137 – 171.

G. KIRCHGÄSSNER (2006a), Ökonomische Theorie der Verfassung, in: PH. MASTRONARDI und D. TAUBERT (eds.), *Staats- und Verfassungstheorie im Spannungsfeld der Disziplinen*, Franz Steiner, Stuttgart 2006,pp. 75 – 99.

G. KIRCHGÄSSNER (2007), The Status Quo Bias in Direct Democracy, mimeo, University of St. Gallen, October 2007.

G. KIRCHGÄSSNER and A. MEYER ZU HIMMERN (1997), Expected Closeness and Turnout: An Empirical Analysis for the German General Elections, 1983 – 1994, *Public Choice* 91 (1997), pp. 3 – 25.

G. KIRCHGÄSSNER and W.W. POMMEREHNE (1988), Das ökonomische Modell individuellen Verhaltens: Implikationen für die Beurteilung staatlichen Handelns, *Kritische Vierteljahresschrift für Gesetzgebung und Rechtswissenschaft*, Issue 3/1988, pp. 230 – 250.

G. KIRCHGÄSSNER and M. SAVIOZ (1997), Empirische Forschung in den Wirtschaftswissenschaften: Ein Überblick, in: A. PFINGSTEN (ed.), *Betriebswirtschaftslehre und Volkswirtschaftslehre*, Sondernummer der Zeitschrift *Homo Oeconomicus* 14 (1997), pp. 209 – 247.

G. KIRCHGÄSSNER and J. SCHIMMELPFENNIG (1991), Closeness Counts if it Matters for Electoral Victory: Some Empirical Results for the United Kingdom and the Federal Republic of Germany, *Public Choice* (1991).

G. KIRCHGÄSSNER and TOBIAS SCHULZ (2005), Was treibt die Stimmbürger an die Urne? Eine empirische Untersuchung der Abstimmungsbeteiligung in der Schweiz, 1981 – 1999, *Swiss Political Science Review* 11 (2005), pp. 1 – 56.

G. KIRCHGÄSSNER, L.P. FELD und M.R. SAVIOZ (1999), *Die direkte Demokratie: Modern, erfolgreich, entwicklungs- und exportfähig*, Helbing und Lichtenhahn/Vahlen, Basel/München 1999.

C. KIRCHNER (1988), Über das Verhältnis der Rechtswissenschaft zur Nationalökonomie: Die neue Institutionenökonomie und die Rechtswissenschaft, *Jahrbuch für Neue Politische Ökonomie* 7 (1988), pp. 192 – 208.

A.P. KIRMAN (1992), Whom or What Does the Representative Individual Represent?, *Journal of Economic Perspectives* 6/2 (1992), pp. 117 – 136.

E.S. KIRSCHEN et al. (1964), *Economic Policy in Our Time*, Band I, North-Holland, Amsterdam 1964.

I.M. KIRZNER (1973), *Competition and Entrepreneurship*, University of Chicago Press, Chicago/ London 1973.

I.M. KIRZNER (1982), Uncertainty, Discovery, and Human Action: A Study of the Entrepreneurial Profile in the Misesian System, in I.M. KIRZNER (1982a), pp. 139 – 159.

I.M. KIRZNER (1982a) (ed.), *Method, Process, and Austrian Economics*, Lexington Books, Lexington/Toronto 1982.

B. KLEIN and K.B. LEFFLER (1981), The Role of Market Forces in Assuring Contractual Performance, *Journal of Political Economy* 89 (1981), pp. 615 – 641.

H. KLIEMT (1984), Nicht-explanative Funktionen eines "Homo oeconomicus" und Beschränkungen seiner explanativen Rolle, in: M.J. HOLLER (ed.), *Homo oeconomicus II*, München 1984.

H. KLIEMT (1985), *Moralische Institutionen*, Karl Alber, Freiburg/München 1985.

H. KLIEMT (1986), The Veil of Insignificance, *European Journal of Political Economy* 2 (1986), pp. 333 – 344.

N. KLOTEN (1958), Mikro- und Makroanalyse als Grundlage wirtschaftspolitischer Entscheidungen, *Journal of Institutional and Theoretical Economics* 114 (1958), pp. 28 – 46.

F.H. KNIGHT (1921), *Risk, Uncertainty and Profit*, Houghton Mifflin Company, 1921; new edition: University of Chicago Press, Chicago 1971.

L. KOLAKOWSKI (1976), *Glóvne Nurtz Marksizmus*, Paris 1976; English translation: *Main Currents of Marxism: Its Rise, Growth, and Dissolution, Vol. 1: The Founders*, Clarendon Press, Oxford 1978.

P. KOLLER (1994), Rationales Entscheiden und moralisches Handeln, in: J. NIDA-RÜMELIN (ed.), *Praktische Rationalität: Grundlagenprobleme und ethische Anwendungen des rational-choice-Paradigmas*, Walter de Gruyter, Berlin/ New York 1994, pp. 281 – 311.

H. KÖNIG (1979), Job-Search-Theorien, in: B. GAHLEN, G. BOMBACH and .E. OTT (eds.), *Neuere Entwicklungen in der Beschäftigungstheorie und -politik*, Mohr (Siebeck), Tübingen 1979, pp. 63 – 121.

R. KÖNIG (1961), Einleitung (Introduction to the German translation):, E. DURKHEIM (1895), *Die Regeln der soziologischen Methode*, Luchterhand, Neuwied 1961, pp. 19 – 82.

J. KONOW (2003), Which is the Fairest One of All?. A Positive Analysis of Justice Theories, *Journal of Economic Literature* 41 (2003), pp. 1186 – 1237.

J. KONOW (2006), Mixed Feelings: Theories and Evidence of Warm Glow and Altruism, Munich Personal RePEc Archive Paper No. 2727, September 2006.

J. KOPP (1995), Zur Stabilität von Framing-Effekten bei Entscheidungssituationen: Eine Replikation und Modifikation des ‚Asian disease problem' von Kahneman und Tversky, *Zeitschrift für Sozialpsychologie* 26 (1995), pp. 107 – 118.

R.J. KOPP, W.W. POMMEREHNE und N. SCHWARZ (1997), *Determining the Value of Non-Marketed Goods: Economic, Psychological, and Policy Relevant Aspects of Contingent Valuation Methods*, Kluwer, Boston et al. 1997.

P. KOSLOWSKI (1982), *Ethik des Kapitalismus*, Mohr (Siebeck), Tübingen, 6th edition 1998.

Y. KOTOWITZ (1987), Moral Hazard, in: *The New Palgrave, A Dictionary of Economics*, Vol. 3, Macmillan, London 1987, pp. 549 – 551.

K. KRAFT and J.-M. V.D. SCHULENBURG (1985), Einige empirische Ergebnisse zur Beurteilung der Wirkung von Selbstbeteiligungsregelungen in der Krankenversicherung, in: P. OBERENDER (ed.), *Gesundheitswesen im Wandel, Beiträge zu einer gesundheitspolitischen Neuorientierung*, Wilfer, Spardorf 1985, pp. 123 – 147.

K. KRAFT and J.-M. V.D. SCHULENBURG (1987), Allokationswirkungen einer Selbstbeteiligung in der gesetzlichen Krankenversicherung, Eine theoretische und empirische Untersuchung, *Jahrbuch für Sozialwissenschaft* 38 (1987), pp. 69 – 84.

G. KRAMER (1973), On a Class of Equilibrium Conditions for Majority Rule, *Econometrica* 41 (1973), pp. 285 – 297.

D.M. KREPS, P. MILGROM, J. ROBERTS and R. WILSON (1982), Rational Cooperation in the Finitely Repeated Prisoner's Dilemma, *Journal of Economic Theory* 27 (1982), pp. 245 – 252.

A.O. KRUEGER (1974), The Political Economy of the Rent-Seeking Society, *American Economic Review* 64 (1974), pp. 291 – 303.

P. KRUGMAN (1994), Past and Prospective Causes of High Unemployment, *Federal Reserve Bank of Kansas Economic Review* 79, Issue 4/1994, pp. 23 – 43.

T.S. KUHN (1962), *The Structure of Scientific Revolutions*, The University of Chicago Press, Chicago 1962.

T.S. KUHN (1970), Logic of Discovery or Psychology of Research?, in: I. LAKATOS and A. MUSGRAVE (eds.) (1970), pp. 1 – 23.

T.S. KUHN (1970a), Reflections on my Critics, in: I. LAKATOS and A. MUSGRAVE (eds.) (1970), pp. 231 – 278.

F.E. KYDLAND and E.C. PRESCOTT (1991), The Econometrics of the General Equilibrium Approach to Business Cycles, *Scandinavian Journal of Economics* 93 (1991), pp. 161 – 178.

R. LA PORTA, F. LÓPEZ-DE-SILANES, C. POP-ELECHES and A. SHLEIFER (2004), Judicial Checks and Balances, *Journal of Political Economy* 112 (2004), pp. 445 – 430.

U. LÄCHLER (1984), The Political Business Cycle Under Rational Voting Behavior, *Public Choice* 44 (1984), pp. 411 – 430.

J.-D. LAFAY (1993), The Silent Revolution of Probabilistic Voting, in: A. BRETON et al. (eds.), *Preferences and Democracy*, Kluwer, Dordrecht 1993, pp. 159 – 191.

I. LAKATOS (1970), Falsification and the Methodology of Scientific Research Programmes, in: I. LAKATOS and A. MUSGRAVE (1970), pp. 91 – 195.

I. LAKATOS and A. MUSGRAVE (eds.) (1970), *Criticism and the Growth of Knowledge*, Cambridge University Press, Cambridge 1970.

K. LANCASTER (1969), *Introduction to Modern Microeconomics*, Rand McNally and Company, Chicago, 2nd edition 1974.

K. LANCASTER (1971), *Consumer Demand, A New Approach*, Columbia University Press, New York 1971.

W.M. LANDES and R.A. Posner (1975), The Independent Judiciary in an Interest-Group Perspective, *Journal of Law and Economics* 18 (1975), pp. 875 – 901.

W.M. LANDES and R.A. POSNER (1979), Adjudication as a Private Good, *Journal of Legal Studies* 8 (1979), pp. 235 – 284.

W.M. LANDES and R.A. POSNER (1980), Legal Change, Judicial Behavior, and the Diversity of Jurisdiction, *Journal of Legal Studies* 9 (1980), pp. 367 – 386.

S.J. LATSIS (1983), The Role and Status of the Rationality Principle in the Social Sciences, in: R.S. COHEN and M.W. WARTOFSKY (eds.), *Epistemology, Methodology and the Social Sciences*, Reidel Publishing Company, Dordrecht/ Boston 1983, pp. 123 – 151.

F. LAVILLE (2000), Foundations of Procedural Rationality: Cognitive Limits and Decision Processes, *Economics and Philosophy* 16 (2000), pp. 117 – 138.

E.P. LAZEAR (2000), Economic Imperialism, *Quarterly Journal of Economics* 115 (2000), pp. 99 – 146.

H. LEIBENSTEIN (1966), Allocatice Efficiency vs. X-Efficiency', *American Economic Review* 56 (1966), pp. 392 – 415.

H. LEIBENSTEIN (1976), *Beyond Economic Man: A New Foundation for Micro-Economics*, Harvard University Press, Cambridge (Mass.) 1976.

H. LEIBENSTEIN (1978), On the Basic Proposition of X-Efficiency Theory, *American Economic Review, Papers and Proceedings*, 68.2 (1978), pp. 328 – 334.

H. LENK (1977), Der methodologische Individualismus ist (nur?) ein heuristisches Postulat, in: K. EICHNER and W. HABERMEHL (eds.), *Probleme der Erklärung sozialen Verhaltens*, Hain, Meisenheim 1977, pp. 34 – 45.

M.R. LEPPER and D. GREENE (eds.) (1978), *The Hidden Costs of Reward: New Perspectives on the Psychology of Human Motivation*, Lawrence Erlbaum Associates, Publishers, Hillsdale, New Jersey 1978.

S.F. LEROY and R. PORTER (1981), The Present Value Relation: Tests Based on Implied Variance Bounds, *Econometrica* 49 (1981), pp. 555 – 574.

D.K. LEVINE and ST.A. LIPPMAN (eds.) (1995), *The Economics of Information*, 2. Volumes, Edward Elgar, Aldershot 1995.

G. LEVY (2005), Careerist Judges and the Appeals Process, *Rand Journal of Economics* 36 (2005), pp. 275 – 297.

S.B. LEWIN (1996), Economics and Psychology: Lessons For Our Own Day From the Early Twentieth Century, *Journal of Economic Literature* 43 (1996), pp. 1293 – 1323.

S. LICHTENSTEIN and P. SLOVIC (1971), Reversals of Preference Between Bids and Choices in Gambling Decisions, *Journal of Experimental Psychology* 89 (1971), pp. 46 – 55.

K. LIEPELT and A. MITSCHERLICH (1968), *Thesen zur Wählerfluktuation*, Europäische Verlagsanstalt, Frankfurt 1968.

A. LINDBECK and D.J. SNOWER (2001), Insiders versus Outsiders, *Journal of Economic Perspectives* 15/1 (2001), pp. 165 – 188.

C.E. LINDBLOM (1977), *Politics and Markets, The Worlds Political Economic Systems*, Basic Books, New York 1977.

S. LINDENBERG (1977), Individuelle Effekte, kollektive Phänomene und das Problem der Transformation, in: K. EICHNER and W. HABERMEHL (eds.), *Probleme der Erklärung sozialen Verhaltens*, Hain, Meisenheim 1977, pp. 46 – 84.

S. LINDENBERG (1980), Marginal Utility and Restraints on Gain Maximization: The Discrimination Model of Rational Repetitive Choice, *Journal of Mathematical Sociology* 7 (1980), pp. 289 – 316.

S. LINDENBERG (1983), Utility and Morality, *Kyklos* 36 (1983), pp. 450 – 468.

S. LINDENBERG (1983a), The New Political Economy: Its Potential and Limitations for the Social Sciences in General and for Sociology in Particular, in: W. SODEUR (ed.), *Ökonomische Erklärungen sozialen Verhaltens*, Verlag der Sozialwissenschaftlichen Kooperative, Duisburg 1983, pp. 7 – 66.

S. LINDENBERG (1984), Preferences versus Constraints, A Commentary on von Weizsäcker's 'The Influence of Property Rights on Tastes', *Journal of Institutional and Theoretical Economics* 140 (1984), pp. 96 – 103.

S. LINDENBERG (1985), Rational Choice and Sociological Theory: New Pressures on Economics as a Social Science, *Journal of Institutional and Theoretical Economics* 141 (1985), pp. 244 – 255.

S. LINDENBERG (1990), Homo Socio-oeconomicus: The Emergence of a General Model of Man in the Social Sciences, *Journal of Institutional and Theoretical Economics* 146 (1990), pp. 727 – 748.

S. LINDENBERG (1992), An Extended Theory of Institutions and Contractual Discipline, *Journal of Institutional and Theoretical Economics* 148 (1992), pp. 125 – 154.

J.A. LIST (2003), Does Market Experience Eliminate Market Anomalies?, *Quarterly Journal of Economics* 118 (2003), pp. 41 – 71.

J.A. LIST (2004), Neoclassical Theory Versus Prospect Theory: Evidence from the Market Place, *Econometrica* 72 (2004), pp. 615 – 625.

S. LOFTHOUSE and J. VINT (1978), Some Conceptions and Misconceptions Concerning Economic Man, *Rivista Internazionale di Scienze Economiche e Commerciali* 25 (1978), pp. 586 – 615.

G. LOOMES (1988), When Actions Speak Louder Than Prospects, *American Economic Review* 78 (1988), pp. 463 – 470.

G. LOOMES and R. SUDGEN (1982), Regret Theory: An Alternative Theory of Rational Choice Under Uncertainty, *Economic Journal* 92 (1982), pp. 805 – 824.

G. LOOMES and R. SUGDEN (1987), Some Implications of a More General Form of Regret Theory, *Journal of Economic Theory* 41 (1987), pp. 270 – 287.

G. LOOMES, CH. STARMER and R. SUGDEN (1991), Observing Violations of Transitivity by Experimental Methods, *Econometrica* 59 (1991), pp. 425 – 439.

R.E. LUCAS (1972), Expectations and the Neutrality of Money, *Journal of Economic Theory* 4 (1972), pp. 103 – 124.

R.E. LUCAS (1976), Econometric Policy Evaluation, A Critique, in: K. BRUNNER and A.H. MELTZER (eds.), *The Phillips Curve and Labor Markets*, Carnegie-Rochester Conference Series on Public Policy, Vol. 1, North-Holland, Amsterdam 1976, pp. 19 – 46.

R.E. LUCAS (1980), Methods and Problems in Business Cycle Theory, *Journal of Money, Credit, and Banking* 12 (1980), pp. 696 – 715.

R.E. LUCAS and T.J. SARGENT (1981), *Rational Expectations and Econometric Practice*, 2 Vols., University of Minnesota Press, Minneapolis 1981.

R.D. LUCE and H. RAIFFA (1957), *Games and Decisions, Introduction and Critical Survey*, Wiley, New York 1957.

N. LUHMANN (1970), Wirtschaft als soziales System, in: N. LUHMANN, *Soziologische Aufklärung, Aufsätze zur Theorie sozialer Systeme*, Vol. 1, Westdeutscher Verlag, Köln/Opladen 1970, pp. 204 – 231; English translation: The Economy as a Social System, in: N. LUHMANN, *The Differentiation of Society*, Columbia University Press, New York 1982, pp. 190 – 225.

N. LUHMANN (1988), *Die Wirtschaft der Gesellschaft*, Suhrkamp, Frankfurt 1988.

G. LÜHRS, T. SARRAZIN, F. SPREER and M. TIETZEL (1975), *Kritischer Rationalismus und Sozialdemokratie*, J.H.W. Dietz, Berlin/Bonn 1975.

G. LÜHRS, T. SARRAZIN, F. SPREER and M. TIETZEL (1976), *Kritischer Rationalismus und Sozialdemokratie II, Diskussion und Kritik*, J.H.W. Dietz, Berlin/Bonn 1976.

S. LUKES (1973), *Individualism*, Basil Blackwell, Oxford 1973.

A.J. MACFADYEN and H.W. MACFADYEN (eds.) (1986), *Economic Psychology: Intersection in Theory and Application*, North-Holland, Amsterdam 1986.

M.J. MACHINA (1982), 'Expected Utility' Analysis Without the Independence Axiom, *Econometrica* 50 (1982), pp. 277 – 323.

M.J. MACHINA (1987), Choice Under Uncertainty: Problems Solved and Unsolved, *Journal of Economic Perspectives* 1/1 (1987), pp. 121 – 154.

F. MACHLUP (1963), Micro- and Macroeconomics, Contested Boundaries and Claims of Superiority, in: F. MACHLUP, *Essays an Economic Semantics*, Prentice-Hall, Englewood Cliffs 1963, pp. 97 – 144.

J.L. MACKIE (1977), *Ethics, Inventing Right and Wrong*, Penguin Books, Harmondsworth 1977.

S. MAITAL (1986), Prometheus Rebound: On Welfare – Improving Constraints, *Eastern Economic Journal* 12 (1986), pp. 337 – 344.

U. MÄKI (2000), Kinds of Assumptions and Their Truth: Shaking an Untwisted F-Twist, *Kyklos* 53 (2000), pp. 317 – 336.

E. MALINVAUD (1952), Note on von Neumann-Morgenstern's Strong Independence Axiom, *Econometrica* 20 (1952), pp. 679.

T. MALTHUS (1798), *Essay on the Principle of Population as It Affects the Future Improvement of Society,* London 1798.

B.D. MANDEVILLE (1714), *The Fable of the Bees: or, Private Vices, Publick Benefits*, 6. edition, London 1932.

N.G. MANKIW (1989), Real Business Cycles: A New Keynesian Perspective, *Journal of Economic Perspectives* 3/3 (1989), pp. 79 – 90.

N.G. MANKIW (1990), A Quick Refresher Course in Macroeconomics, *Journal of Economic Literature* 28 (1990), pp. 1645 – 1660.

N.G. MANKIW (2001), The Inexorable and Mysterious Tradeoff Between Inflation and Unemployment, *Economic Journal* 111 (2001), pp. C45 – C61.

H. MARGOLIS (1981), A New Model of Rational Choice, *Ethics* 91 (1981), pp. 265 – 279.

H. MARGOLIS (1982), *Selfishness, Altruism, and Rationality, A Theory of Social Choice*, Cambridge University Press, Cambridge 1982.

H. MARGOLIS (1987), *Patterns, Thinking, and Cognition, A Theory of Judgment*, University of Chicago Press, Chicago 1987.

J. MARSCHAK (1950), Rational Behavior, Uncertain Prospects, and Measurable Utility, *Econometrica* 18 (1950), pp. 111 – 141.

A. MARSHALL (1890), *Principles of Economics*, Macmillan, 8th edition (Reprint) 1982.

A. MARSHALL (1890a), The Scope and Method of Economic Science, Appendix C to: A. MARSHALL (1890), pp. 636 – 643.

K. MARX (1867), *Das Kapital, Vol. I: Der Produktionsprozess des Kapitals*, Hamburg 1867. (Quoted from the English edition of 1987: *Capital: A Critical Analysis of Capitalist Production*, *Vol. I*, Foreign Languages Publishing House, Moscow 1961.)

K. MARX (1894), *Das Kapital, Vol. III, Der Gesamtprozess der kapitalistischen Produktion*, Otto Meissner, Hamburg 1894. (Quoted from English translation: *Capital: A Critique of Political Economy, Vol. III, The Process of Capitalist Production as a Whole*, Foreign Languages Publishing House, Moscow 1959.)

A. MAS-COLELL, M.D. WHINSTON and J.R. GREEN (1995), *Microeconomic Theory*, Oxford University Press, New York/Oxford 1995.

E. MASKIN and J. TIROLE (2004), The Politician and the Judge: Accountability in Government, *American Economic Review* 94 (2004), pp. 1034 – 1054.

H. MATTFELDT (1974), Einige Bemerkungen zur Bedeutung des systemtheoretischen Ansatzes von Luhmann für die Nationalökonomie, *Jahrbuch für Sozialwissenschaft* 25 (1974), pp. 158 – 169.

R.C.O. MATTHEWS (1984), Darwinism and Economic Change, *Oxford Economic Papers* 36 (1984), Supplement, pp. 91 – 117.

TH. MAYER, (1993), Friedman's Methodology of Positive Economics: A Soft Reading, *Economic Inquiry* 31 (1993), pp. 213 – 223.

J. MAYNARD SMITH (1968), Haldane's Dilemma and the Rate of Evolution, *Nature* 219 (1968), pp. 1114 – 1116.

K.O. MCGRAW (1978), The Detrimental Effects of Reward on Performance, in: M.R. LEPPER and D. GREENE (1978), pp. 33 – 60.

W.S. MCMANUS (1985), Estimates of the Deterrent Effect of Capital Punishment: The Importance of Researcher's Prior Beliefs, *Journal of Political Economy* 93 (1985), pp. 417 – 425.

W.H. MECKLING (1976), Values and the Choice of the Model of the Individual in the Social Sciences, *Schweizerische Zeitschrift für Volkswirtschaft und Statistik* 112 (1976), pp. 545 – 560.

P. MEEHL (1977), The Selfish Voter Paradox and the Thrown-Away Vote Argument, *American Political Science Review* 71 (1977), pp. 11 – 30.

G. MEGGLE (1977), Grundbegriffe der rationalen Handlungstheorie, in: G. MEGGLE (ed.), *Handlungstheorie, Vol. 1, Handlungsbeschreibungen*, Suhrkamp, Frankfurt 1977, pp. 415 – 428.

F. MEINECKE (1924), *Die Idee der Staatsraison in der neueren Geschichte*, Oldenbourg, München/Berlin 1924.

C. MENGER (1883), *Untersuchungen über die Methode der Sozialwissenschaften und der politischen Ökonomie insbesondere*, Duncker und Humblot, Leipzig 1883; English translation: *Problems of Economics and Sociology*, University of Illinois Press, Urbana 1963.

W. MEYER (1980), Erkenntnistheoretische Orientierungen und der Charakter des ökonomischen Denkens, in: E. STREISSLER and CH. WATRIN (eds.), *Zur Theorie marktwirtschaftlicher Ordnungen*, Mohr (Siebeck), Tübingen 1980, pp. 80 – 123.

W. MEYER (1987), Was leistet die ökonomische Theorie der Familie?, in: H. TODT (eds.), *Die Familie als Gegenstand sozialwissenschaftlicher Forschung*, Duncker und Humblot, Berlin 1987, pp. 11 – 45.

W. MEYER (1991), Wirtschaftstheorie und Falsifikationismus, in: A. BOHNEN und A. MUSGRAVE (eds.), *Wege der Vernunft*, Mohr (Siebeck), Tübingen 1991, pp. 44 – 87.

J.S. MILL (1836), On the Definition of Political Economy; and on the Method of Philosophical Investigation in that Science, *London and Westminster Review* 4/26 (1836), pp. 1 – 29; reprinted in: J.S. MILL, *Essays on Economics and Society*, Routledge and Kegan Paul, London 1967, pp. 309 – 339.

J. MIRON and J. ZWIEBEL (1995), The Economic Case Against Drug Prohibition, *Journal of Economic Perspectives* 9/4 (1995), pp. 175 – 192.

L. V. MISES (1944), *Bureaucracy*, Yale University Press, New Haven 1944.

L. V. MISES (1949), *Human Action*, Yale University Press, New Haven 1949.

E.J. MISHAN (1971), Pangloss on Pollution, *The Swedish Journal of Economics* 73 (1971), pp. 113 – 120.

W. MISHLER and R.S. SHEEHAN (1993), The Supreme Court as a Countermajoritarian Institution?, The Impact of Public Opinion on Supreme Court Decisions, *American Political Science Review* 87 (1993), pp. 87 – 101.

W. MISHLER and R.S. SHEEHAN (1994), Popular Influence on Supreme Court Decisions: Response, *American Political Science Review* 88 (1994), pp. 716 – 724.

T.M. MOE (1997), The Positive Theory of Public Bureaucracy, in: D.C. MUELLER (ed.), *Perspectives on Public Choice: A Handbook*, Cambridge University Press, Cambridge (UK) et al. 1997, pp. 455 – 480.

K.O. MOENE (1986), Types of Bureaucratic Interaction, *Journal of Public Economics* 29 (1986), pp. 333 – 345.

D.H. MONRO (1987), Self-Interest, in: *The New Palgrave, A Dictionary of Economics*, Vol. 4, Macmillan, London 1987, pp. 297 – 300.

A. MONTAGU (ed.) (1980), *Sociobiology Examined*, Oxford University Press, New York/Oxford 1980.

M. MORISHIMA (1973), *Marx's Economics, A Dual Theory of Value and Growth*, Cambridge University Press, Cambridge 1973.

B.R. MOULTON (1996), Bias in the Consumer Price Index: What is the Evidence?, *Journal of Economic Perspectives* 10/4/ (1996), pp. 159 – 177.

D.C. MUELLER (ed.) (1983), *The Political Economy of Growth*, Yale University Press, New Haven/London 1983.

D.C. MUELLER (1996), *Constitutional Democracy*, Oxford University Press, Oxford 1996.

D.C. MUELLER (ed.) (1997), *Perspectives on Public Choice*, Cambridge University Press, Cambridge (England) 1997.

D.C. MUELLER (2003), *Public Choice III*, Cambridge University Press, Cambridge (England) 2003.

U. MUELLER (1990), Optimale Vergeltung zwecks optimaler Kooperation, in: U. MUELLER (ed.), *Evolution und Spieltheorie*, Oldenbourg, München 1990, pp. 61 – 81.

S. MULLAINATHAN (2007), Psychology and Development Economics, in: P. DIAMOND and H. VARTIAINEN (eds.), *Behavioral Economics and Its Applications*, Princeton University Press, Princeton (N.J.) 2007, pp. 85 – 112.

R.A. MUSGRAVE and P.B. MUSGRAVE (1973), *Public Finance in Theory and Practice*, McGraw-Hill, New York et al., 4th edition 1984.

J. MUTH (1961), Rational Expectations and the Theory of Price Movements, *Econometrica* 29 (1961), pp. 315 – 335.

D.P. MYATT, H.S. SHIN and C. WALLACE (2002), The assessment: Games and Coordination, *Oxford Review of Economic Policy* 28 (2002), pp. 397 – 417.

G. MYRDAL (1930), *Vetenskap och politik i nationalekonomien*, Stockholm 1930; English translation: The *Political Element in the Development of Economic Theory*, Routledge and Kegan Paul, London 1953.

G. MYRDAL (1933), Das Zweck-Mittel-Denken in der Nationalökonomie, *Zeitschrift für Nationalökonomie* 4 (1933), pp. 305 – 329.

E. NAGEL (1963), Assumptions in Economic Theory, *American Economic Review, Papers and Proceedings*, 53.2 (1963), pp. 211 – 219.

P. NANNESTAD and M. PALDAM (1994), The VP-Function: A Survey of the Literature on Vote and Popularity Functions After 25 Years, *Public Choice* 79 (1994), pp. 213 – 245.

J.F. NASH, The Bargaining Problem, *Econometrica* 18 (1950), pp. 155 – 162.

R.R. NELSON and S.G. WINTER (1982), *An Evolutionary Theory of Economic Change*, Harvard University Press, Cambridge, Mass. 1982.

CH. DE NEUBOURG and M. VENDRIK (1994), An Extended Rationality Model of Social Norms in Labor Supply, *Journal of Economic Psychology* 15 (1994), pp. 93 – 126.

J. V. NEUMANN and O. MORGENSTERN (1944), *Theory of Games and Economic Behavior*, Princeton University Press, Princeton 1944.

M.J.M. NEUMANN (1985), Homo Oeconomicus als Wirtschaftspolitiker, Variationen eines bekannten Themas, in: H. MILDE and H.G. MONISSEN (eds.), *Rationale Wirtschaftspolitik in komplexen Gesellschaften*, Gérard Gäfgen zum 60. Geburtstag, Kohlhammer, Stuttgart 1985, pp. 129 – 137.

D NEWBERY and J. STIGLITZ (1987), Wage Rigidity, Implicit Contracts, Unemployment and Economic Efficiency, *Economic Journal*, 97 (1987), pp. 416 – 984308.

W.A. NISKANEN (1968), The Peculiar Economics of Bureaucracy, *American Economic Review, Papers and Proceedings*, 58.2 (1968), pp. 293 – 305.

W.A. NISKANEN (1971), *Bureaucracy and Representative Government*, Chicago University Press, Chicago 1971.
S. NITZAN (1994), Modeling Rent-Seeking Contests, *European Journal of Political Economy* 10 (1994),pp. 41 – 60.
W.D. NORDHAUS (1975), The Political Business Cycle, *Review of Economic Studies* 42 (1975), pp. 169 – 190.
W.D. NORDHAUS (1989), Alternative Approaches to the Political Business Cycle, *Brookings Papers on Economic Activity* 2/1989, pp. 1 – 49.
W.D. NORDHAUS and J. TOBIN (1972), Is Growth Obsolete?, in: NATIONAL BUREAU OF ECONOMIC RESEARCH (ed.), *50th Anniversary Colloquium* V, Columbia University Press, New York/London 1972, pp. 1 – 80.
H. NORPOTH and J.R. SEGAL (1994), Popular Influence on Supreme Court Decisions: Comment, *American Political Science Review* 88 (1994), pp. 711 – 716.
D.C. NORTH (1981), *Structure and Change in Economic History*, Norton, New York 1981.
D.C. NORTH (1991), Institutions, *Journal of Economic Perspectives* 5/1 (1991), pp. 97 – 112.
R. NOZICK (1974), *Anarchy, State, and Utopia*, Basil Blackwell, Oxford 1974.
H.G. NUTZINGER (1997), Homo oeconomicus: Reichweite und Grenzen der ökonomischen Verhaltenstheorie, *Zeitschrift für Evangelische Ethik* 41 (1997), pp. 84 – 98.
A. OLIVER (2006), Further Evidence of Preference Reversals: Choice, Valuation and Ranking Over Distribution of Life Expectancy, *Journal of Health Economics* 25 (2006), pp. 803 – 820.
M. OLSON (1965), *The Logic of Collective Action*, Harvard University Press, Cambridge (Mass.) 1965.
M. OLSON (1982), *The Rise and Decline of Nations: Economic Growth, Stagflation, and Social Rigidities*; Yale University Press, New Haven/London 1982.
M. OLSON (1995), The Secular Increase in European Unemployment Rates, *European Economic Review* 39 (1995), pp. 593 – 599.
M. OLSON (1984), Beyond Keynesianism and Monetarism, *Economic Inquiry* 22 (1984), pp. 297 – 322.
K.-D. OPP (1970), *Methodologie der Sozialwissenschaften*, Einführung in Probleme ihrer Theorienbildung, Rowohlt, Hamburg 1970.
K.-D. OPP (1972), *Verhaltenstheoretische Soziologie, Eine neue soziologische Forschungsrichtung*, Rowohlt, Hamburg 1972.
K.-D. OPP (1979), *Individualistische Sozialwissenschaft*, Enke, Stuttgart 1979.
K.-D. OPP (1979a), Das 'ökonomische Programm' in der Soziologie, in: H. ALBERT and K.H. STAPF (eds.), *Theorie und Erfahrung, Beiträge zu Grundlagenproblemen der Sozialwissenschaften*, Klett-Cotta, Stuttgart 1979, pp. 313 – 349.
K.-D. OPP (1985), Sociology and Economic Man, *Journal of Institutional and Theoretical Economics* 141 (1985), pp. 213 – 243.
K.-D. OPP (1985a), Soft Incentives and Collective Action, Participation in the Anti Nuclear Movement, *British Journal of Political Science* 15 (1985), pp. 269 – 294.

K.-D. OPP (1986), Das Modell des Homo Sociologicus, Eine Explikation und eine Konfrontierung mit dem utilitaristischen Verhaltensmodell, *Analyse und Kritik* 8 (1986), pp. 1 – 27.

K.-D. OPP (1988), Spontaneous Order and Tit for Tat: Some Hypotheses and an Empirical Test, *Journal of Institutional and Theoretical Economics* 144 (1988), pp. 374 – 385.

K.-D. OPP (1989), Ökonomie und Soziologie, Die gemeinsamen Grundlagen beider Fachdisziplinen, in: H.-B. SCHÄFER and K. WEHRT (eds.), *Die Ökonomisierung der Sozialwissenschaften, Sechs Wortmeldungen*, Campus, Frankfurt/ New York 1989, pp. 103 – 127.

K.-D OPP, (1993), Politischer Protest als rationales Handeln, in: B.-TH. RAMB und M. TIETZEL (eds.), *Ökonomische Verhaltenstheorie*, Vahlen, München 1993, pp. 207 – 246.

K.-D. OPP (1997), Norms, Rationalizations and Collective Political Actions: A Rational Choice Perspective, *Schweizerische Zeitschrift für Volkswirtschaft und Statistik* 133 (1997), pp. 241 – 274.

K.-D. OPP (1999), Contending Perceptions of the Theory of Rational Action, *Journal of Theoretical Politics* 11 (1999), pp. 171 – 202.

K.-D. OPP and H.J. HUMMEL (1973), *Kritik der Soziologie*, Athenäum, Frankfurt 1973.

K.-D. OPP and H.J. HUMMEL (1973a), *Soziales Verhalten und soziale Systeme*, Athenäum, Frankfurt 1973.

K.-D. OPP, P. VOSS and CH. GERN (1993), *Die volkseigene Revolution*, Klett-Cotta, Stuttgart 1993.

W. ORZECHOWSKI (1977), Economic Models of Bureaucracy: Survey, Extension, and Evidence, in: T.E. BORCHERDING (ed.), *Budgets and Bureaucrats: The Sources of Government Growth*, Duke University Press, Durham, North Carolina 1977, pp. 229 – 259.

G.F. OSTER and E.O. WILSON (1978), *Caste and Ecology in Social Insects*, Princeton University Press, Princeton 1978.

E. OSTROM (1990), *Governing the Commons: The Evolution of Institutions of Collective Action*, Cambridge University Press, Cambridge (Mass.) et al. 1990.

M. PALDAM (1997), Political Business Cycles, in: D.C. MUELLER (1997), pp. 342 – 370.

T.R. PALFREY *und* H. ROSENTHAL (1983), A Strategic Calculus of Voting, *Public Choice* 41 (1983), pp. 11 – 30.

T.R. PALFREY und H. ROSENTHAL (1985), Voter Participation and Strategic Uncertainty, *American Political Science Review* 79 (1985), pp. 62 – 78.

M. PATZAK (1984), Rationalmodell und analytische Handlungstheorie, in: M.J. HOLLER (ed.), *Homo oeconomicus III*, München 1984, pp. 7 – 42.

M. PAULY (1968), The Economics of Moral Hazard: Comment, *American Economic Review* 58 (1968), pp. 531 – 537.

G. PELLONI, (1996), De Finetti, Friedman, and the Methodology of Positive Economics, *Journal of Econometrics* 75 (1996), pp. 33 – 50.

E.T. PENROSE (1952), Biological Analogies in the Theory of the Firm, *American Economic Review* 42 (1952), pp. 804 – 819.

E.T. PENROSE (1953), Biological Analogies in the Theory of the Firm: Rejoinder, *American Economic Review* 43 (1953), pp. 603 – 609.

R. PEROTTI (1996), Growth, Income Distribution and Democracy: What the Data Say, *Journal of Economic Growth* 1 (1996), pp. 149 – 187.

T.J. PERRI (1995), Is There a Winner's Curse in the Labor Market?, *Journal of Economic Behavior and Organization* 28 (1995), pp. 79 – 89.

J. PERSKY (1995), The Ethology of Homo Economicus, *Journal of Economic Perspectives* 9/2 (1995), pp. 221 – 231.

M.H. PESARAN (1987), *The Limits of Rational Expectations*, Basil Blackwell, Oxford 1987.

E.S. PHELPS (1975), The Indeterminacy of Game-Equilibrium Growth in the Absence of an Ethic, in: E.S. PHELPS (ed.), *Altruism, Morality, and Economic Theory*, Russel Sage Foundation, New York 1975, pp. 87 – 105.

A.W. PHILLIPS (1958), The Relation Between Unemployment and the Rate of Change of Money Wage Rates in the United Kingdom, 1861 – 1957, *Economica* 25 (1958), pp. 283 – 299.

R. PIETERS and H. ROBBEN (1999), Consumer Evaluation of Money as a Gift: A Two-Utility Model and an Empirical Test, *Kyklos* 52 (1999), pp. 173 – 200.

A.C. PIGOU (1950), *Keynes' 'General Theory', A Retrospective View*, Macmillan, London 1950.

I.M. PILIAVIN, J. RODIN and J.A. PILIAVIN (1969), Good Samaritanism: An Underground Phenomenon?, *Journal of Personality and Social Psychology* 13, (1969), pp. 289 – 299.

M. PLANCK (1933), Ursprung und Auswirkung wissenschaftlicher Ideen, reprinted in: M. PLANCK, *Wege zur physikalischen Erkenntnis*, Hirzel, Leipzig 1943, pp. 206 – 226: English translation: Scientific Ideas: Their Origin and Effects, in: M. PLANCK, The New Science, Meridian Books, 1959, pp. 291 – 313.

F.V.D. PLOEG (1987), Optimal Government Policy in a Small Open Economy with Rational Expectations and Uncertain Election Outcomes, *International Economic Review* 28 (1987), pp. 469 – 491.

CH.I. PLOSSER (1989), Understanding Real Business Cycles, *Journal of Economic Perspectives* 3/3 (1989), pp. 51 – 77.

A. PODGÓRECKI and CH. J. WHELAN (eds.) (1981), *Sociological Approaches to Law*, St. Martins Press, New York 1981.

W. POGGE (1981), The Kantian Interpretation of Justice as Fairness, *Zeitschrift für philosophische Forschung* 35 (1981), pp. 47 – 65.

W.W. POMMEREHNE (1975), Budgetäre Umverteilung in der Demokratie: Ein empirischer Test alternativer Hypothesen, *Zeitschrift für Wirtschafts- und Sozialwissenschaften* 95 (1975), pp. 327 – 364.

W.W. POMMEREHNE(1987), *Präferenzen für öffentliche Güter, Ansätze zu ihrer Erfassung*, Mohr (Siebeck), Tübingen 1987.

W.W. POMMEREHNE (1993), Verbieten oder nicht: Das ist nicht die Frage! in: M. MARTINEK, J. SCHMIDT und E. WADLE (eds.), *Vestigia Juris: Festschrift für Günther Jahr*, Mohr (Siebeck), Tübingen 1993, pp. 181 – 198.

W.W. POMMEREHNE (1995), Zwischen Repression und Legalisierung: Ökonomische Analyse der Drogenpolitik, in: W. BÖHM und M. LINDAUER (eds.), *Sucht und Sehnsucht: Über unseren Umgang mit Drogen und Drogenproblemen*, Klett, Stuttgart et al. 1995, pp. 243 – 260.

W.W. POMMEREHNE and B.S. FREY (1985), Kunst: Was sagt der Ökonom dazu?, *Schweizerische Zeitschrift für Volkswirtschaft und Statistik* 121 (1985), pp. 139 – 167.

W.W. POMMEREHNE and F. SCHNEIDER (1983), Does Government in a Representative Democracy Follow a Majority of Voters' Preferences?, An Empirical Examination, in: H. HANUSCH (ed.), *Anatomy of Government Deficiencies*, Springer, Berlin/Heidelberg 1983, pp. 61 – 84.

W.W. POMMEREHNE and F. SCHNEIDER (1985), Politisch-ökonomische Überprüfung des Kaufkraftinzidenzkonzepts: Eine Analyse der AHV-Abstimmungen von 1972 und 1978, in: E.A. BRUGGER and R.L. FREY (eds.), *Sektoralpolitik versus Regionalpolitik*, Rüegger, Gruesch 1985, pp. 75 – 100.

W.W. POMMEREHNE and H. WECK-HANNEMANN (1996), Tax Rates, Tax Administration and Income Tax Evasion in Switzerland, *Public Choice* 88 (1996), pp. 161 – 170.

W.W. POMMEREHNE, F. SCHNEIDER and P. ZWEIFEL (1982), Economic Theory of Choice and the Preference Reversal Phenomenon, A Reexamination, *American Economic Review* 72 (1982), pp. 569 – 574.

K.R. POPPER (1935), *Logik der Forschung*, Julius Springer, Wien 1935; English translation: *Logic of Scientific Discovery*, Hutchinson, London 1959.

K.R. POPPER (1944/45), The Poverty of Historicism, I, *Economica* 11 (1944), pp. 86 – 103; II, *Economica* 11 (1944), pp. 119 – 137; III, *Economica* 12 (1945), pp. 69 – 89; reprinted as book by: The Beacon Press, Boston 1957.

K.R. POPPER (1945), *The Open Society and Its Enemies, Vol. I, The Spell of Plato, Vol. II, The High Tide of Prophecy: Hegel, Marx, and the Aftermath*, Routledge and Sons, London 1945.

K.R. POPPER (1962), Die Logik der Sozialwissenschaften, *Kölner Zeitschrift für Soziologie und Sozialpsychologie* 14 (1962), pp. 233 – 248; reprinted in and quoted from: T.W. ADORNO et al., (1969), pp. 87 – 104.

K.R. POPPER (1963), Truth, Rationality, and the Growth of Scientific Knowledge, in: K.R. POPPER, *Conjectures and Refutations, The Growth of Scientific Knowledge*, Routledge and Kegan Paul, London 1963, 4th, extended edition 1972, pp. 215 – 250.

K.R. POPPER (1967), La rationalité et le statut du principe de rationalité, in E.M. CLASSEN (ed.), *Les fondements philosophiques des systèmes économiques: Textes de Jaques Rueff et essais rédigés en son honneur*, Payot, Paris 1967, pp. 142 – 150; English translation: The Rationality Principle, reprinted in: B.J. CALDWELL (ed.), *The Philosophy and Methodology of Economics*, Volume III, Edward Elgar, Aldershot 1993, pp. 3 – 11.

K.R. POPPER (1972), *Objective Knowledge*, Clarendon Press, Oxford.

J. POTTERS and R. SLOOF (1996), Interest Groups: A Survey of Empirical Models That Try to Assess Their Influence, *European Journal of Political Economy* 12 (1996), pp. 403 – 442.

R.A. POSNER (1975), The Social Costs of Monopoly and Regulation, *Journal of Political Economy* 83 (1975), pp. 807 – 827.

R.A. POSNER (1972), *Economic Analysis of Law*, Little, Brown and Company, Boston 1972. (7th edition, Aspen, New York 2007.)

R.A. POSNER (1987), The Law and Economics Movement, *American Economic Review, Papers and Proceedings* 77.2 (1987), pp. 1 – 13.

J.W. PRATT and R.J. ZECKHAUSER (1985), Principals and Agents: An Overview, in: J.W. PRATT and R.J. ZECKHAUSER (eds.), *Principals and Agents, The Structure of Business*, Harvard Business School Press, Boston 1985, pp. 1 – 35, pp. 215 – 216.

M. PRISCHING (1983), Über die Karriere einer Handlungstheorie, Der ökonomische Mensch auf dem Weg durch die Sozialwissenschaften, *Zeitschrift für philosophische Forschung* 37 (1983), pp. 256 – 274.

M. PRISCHING (1996), Die Vernichtung des Unternehmers, *Wirtschaftspolitische Blätter* 43 (1996), pp. 515 – 524.

M. PRISCHING (1989), Friedrich von Hayeks Sozialstaatskritik, *Internationales Jahrbuch für Rechtsphilosophie und Gesetzgebung* (1989), pp. 71 – 97.

F.L. PRYOR (1983), A Quasi-Test of Olson's Hypotheses, in D.C. MUELLER (1983), pp. 90 – 105.

F.L. PRYOR (1984), Rent-Seeking and the Growth and Fluctuations of Nations: Empirical Tests of Some Recent Hypotheses, in D. C. COLANDER (1984), pp. 155 – 175.

F.L. PRYOR (1987), Testing Olson: Some Statistical Problems, *Public Choice* 52 (1983), pp. 223 – 226.

P.A. PUHANI (2003), A Test of the ‚Krugman Hypothesis' fort he United States, Britain, and West Germany, Centre for European Economic Research, Discussion Paper No. 03-18, Mannheim, April 2003.

J. PURDY (2006), The Promise (and Limits) of Neuroeconomics, Duke Law School, Research Paper No. 116, Durham N.C., August 2006.

H. PUTNAM (2002), *The Collapse of the Fact/Value Dichotomy and Other Essays*, Harvard University Press, Cambridge (Mass.) 2002.

D. J.-F. DE QUERVAIN, U. FISCHBACHER, V. TREYER, M. SCHELLHAMMER, U. SCHNYDER, A. BUCK and E. FEHR (2004), The Neural Basis of Altruistic Punishment, *Science* 305 (2004), pp. 1254 – 1258.

J. QUIGGIN (1987), Egoistic Rationality and Public Choice: A Critical Review of Theory and Evidence, *The Economic Record* 63 (1987), pp. 10 – 21.

G. RADNITZKY (1981), Wertfreiheitsthese: Wissenschaft, Ethik und Politik, in G. RADNITZKY and G. ANDERSSON (eds.), *Voraussetzungen und Grenzen der Wissenschaft*, Mohr (Siebeck), Tübingen 1981, pp. 47 – 126.

G. RADNITZKY and P. BERNHOLZ (eds.) (1987), *Economic Imperialism*, Paragon House Publishers, New York 1987.

H.J. RAMSER (1977), Phillips-Kurve und Wirtschaftspolitik zwischen Inflation und Arbeitslosigkeit, in: H.J. RAMSER and B. ANGEHRN (eds.), *Beschäftigung und Inflation*, Gustav Fischer, Stuttgart 1977, pp. 73 – 80.

H.J. RAMSER (1978), Rationale Erwartungen und Wirtschaftspolitik, *Journal of Institutional and Theoretical Economics* 134 (1978), pp. 57 – 72.

H.J. RAMSER (1987), *Beschäftigung und Konjunktur*, Springer, Berlin 1987.
D.J. RAPPORT and J.E. TURNER (1977), Economic Models in Ecology, *Science* 195 (1977), pp. 367 – 373.
E. RASMUSEN (1989), *Games and Information, An Introduction to Game Theory*, Basil Blackwell, Oxford 1989.
J. RAWLS (1957), Justice as Fairness, *Journal of Philosophy* 54 (1957), pp. 653 – 662. (Extended Version: *The Philosophical Review* 67 (1958), pp. 164 – 194.)
J. RAWLS (1971), *A Theory of Justice*, Harvard University Press, Cambridge (Mass.) 1971.
P. RAY (1973), Independence of Irrelevant Alternatives, *Econometrica* 41 (1973), pp. 987 – 991.
D. READ (2006), Which Side Are you On?, The Ethics of Self-Command, *Journal of Economic Psychology* 12 (2005), pp. 265 – 276.
R. RICHTER and E.G. FURUBOTN (1998), *Institutions and Economic Theory: The Contribution of the New Institutional Economics*, University of Michigan Press, Ann Arbor 1998.
W.F. RICHTER and W. WIEGARD (1993), Zwanzig Jahre ‚Neue Finanzwissenschaft', *Zeitschrift für Wirtschafts- und Sozialwissenschaften* 113 (1993), pp. 169 – 224, pp. 337 – 400.
W.H. RIKER and P.C. ORDESHOOK (1968), A Theory of the Calculus of Voting, *American Political Science* Review 62 (1968), pp. 25 – 42.
W.H. RIKER and P.C. ORDESHOOK (1973), *An Introduction to Positive Political Theory*, Prentice Hall, Englewood Cliffs 1973.
A. RIKLIN (1985), Mandevilles Bienenfabel: Private Laster als Quelle des Gemeinwohls?, *Zeitschrift für Evangelische Ethik* 29 (1985), pp. 216 – 229.
L. ROBBINS (1932), *An Essay on the Nature and Significance of Economic Science*, Macmillan, London 1932; quoted from the 2nd edition, MacMillan, London 1952.
J. ROBINSON (1933), *The Economics of Imperfect Competition*, Macmillan, London 1933.
J. ROBINSON (1972), The Second Crisis of Economic Theory, *American Economic Review, Papers and Proceedings*, 62.2 (1972), pp. 1 – 10.
J. ROEMER (1996), *Theories of Distributive Justice*, Harvard University Press, Cambridge (Mass.) 1996.
R. ROGERSON, R. SHIMER and R. WRIGHT (2005), Search-Theoretic Models of the Labor Market: A Survey, *Journal of Economic Literature* 43 (2005), pp. 959 – 988.
G. ROHWER, (1985), Zur politischen Ökonomie der Hausarbeit, *Leviathan*, 2/1985, pp. 187 – 211.
D. ROMER (1993), The New Keynesian Synthesis, *Journal of Economic Perspectives* 7/1 (1993), pp. 5 – 22.
R. ROLL (1986), The Hubris Hypothesis of Corporate Takeovers, *Journal of Business* 59 (1986), pp. 197 – 216.
S. ROSE-ACKERMAN (1978), *Corruption, A Study in Political Economy*, Academic Press, New York 1978.

S. ROSE-ACKERMAN (1994), The Economic Analysis of Public Law, *European Journal of Law and-Economics* 1(1994), pp. 53 – 70.
S. ROSE-ACKERMAN (1999), *Corruption and Government: Causes, Consequences, and Reform*, Cambridge University Press, Cambridge (Mass.) et al. 1999.
A. ROSENBERG (1980), *Sociobiology and the Preemption of Social Science*, John Hopkins University Press, Baltimore/London 1980.
J.J. ROTEMBERG and M. WOODFORD (1996), Real-Business-Cycle Models and the Forecastable Movements in Output, Hours, and Consumption, *American Economic Review* 86 (1996), pp. 71 – 89.
T.F. RÖTHELI (1998), Pattern Recognition and Procedurally Rational Expectations, *Journal of Economic Behavior and Organization* 37 (1998), pp. 71 – 90.
E. ROTHSCHILD (1994), Adam Smith and the Invisible Hand, *American Economic Review, Papers and Proceedings*, 84.2 (1994), pp. 319 – 322.
K.W. ROTHSCHILD (1992), *Ethik und Wirtschaftstheorie*, Mohr (Siebeck), Tübingen 1992.
A. RUBINSTEIN (1998), *Modeling Bounded Rationality*, MIT Press, Cambridge (Mass.) 1998.
N.D. RUGGLES (1987), Social Accounting, in: *The New Palgrave, A Dictionary of Economics*, Vol. 4, Macmillan, London 1987, pp. 377 – 382.
M. RUSE (1978), Sociobiology: A Philosophical Analysis, in: A.L. CAPLAN (1978), pp. 355 – 375.
M. RUSE (1979), *Sociobiology: Sense or Nonsense*, Reidel, Dordrecht/Boston 1979.
P.A. SAMUELSON (1948), *Economics*, Mc Graw Hill, New York 1948.
P.A. SAMUELSON (1952), Economic Theory and Mathematics, An Appraisal, *American Economic Review, Papers and Proceedings*, 42.2 (1952), pp. 56 – 66.
P.A. SAMUELSON (1953), Consumption Theorems in Terms of 'Overcompensation' Rather Than Indifference Comparisons, *Economica* 20 (1953), pp. 1 – 9.
P.A. SAMUELSON (1954), The Pure Theory of Public Expenditure, *Review of Economics and Statistics* 36 (1954), pp. 387 – 389.
P.A. SAMUELSON (1958), An Exact Consumption-Loan Model of Interest With or Without the Social Contrivance of Money, *Journal of Political Economy* 66 (1958), pp. 467 – 482.
P.A. SAMUELSON and W.D. NORDHAUS (1995), Economics, McGraw-Hill, New York 1995 (15th edition of P.A. SAMUELSON (1948)).
P.A. SAMUELSON and R.M. SOLOW (1960), Analytical Aspects of Anti-Inflation Policy, *American Economic Review, Papers and Proceedings* 50.2 (1960), pp. 177 – 194.
W. SAMUELSON and R. ZECKHAUSER (1988), Status Quo Bias in Decision Making, *Journal of Risk and Uncertainty* 1 (1988), pp. 7 – 59.
H.J. SANDKÜHLER (ed.) (1973), *Marxistische Erkenntnistheorie, Texte zu ihrem Forschungsstand in den sozialistischen Ländern*, Frommann-Holzboog, Stuttgart 1973.
P.J. SANFEY (1995), Insiders and Outsiders in Union Models, *Journal of Economic Surveys* 9 (1995), pp. 255 – 284.

A.M. SANTAMERO and J.J. SEATER (1978), The Inflation-Unemployment Trade-off: A Critique of the Literature, *Journal of Economic Literature* 16 (1978), pp. 499 – 544.

T.J. SARGENT (1973), Rational Expectations, the Real Rate of Interest, and the Natural Rate of Unemployment, *Brookings Papers on Economic Activity* 2/1973, pp. 429 – 472.

T.J. SARGENT (1979), *Macroeconomic Theory*, Academic Press, New York 1979.

T.J. SARGENT (1981), Interpreting Economic Time Series, *Journal of Political Economy* 89 (1981), pp. 213 – 248.

T.J. SARGENT and N. WALLACE (1975), 'Rational' Expectations, the Optimal Monetary Instrument, and the Optimal Money Supply Rule, *Journal of Political Economy* 83 (1975), pp. 241 – 254.

L.J. SAVAGE (1954), *The Foundation of Statistics*, Wiley, New York 1954. (2nd, extended edition: Dover Publications, New York 1972).

H.-B. SCHÄFER and C. OTT (1986), *Lehrbuch der ökonomischen Analyse des Zivilrechts*, Springer, Berlin/Heidelberg, 3rd edition 2000.

T.C. SCHELLING (1960), *The Strategy of Conflict*, Harvard University Press, Cambridge (Mass.) 1960.

T.C. SCHELLING (1978), *Micromotives and Macrobehavior*, W.W. Norton, New York/London 1978.

T.C. SCHELLING (1978a), Egonomics, or the Art of Self-Management, *American Economic Review, Papers and Proceedings* 68.2 (1978), pp. 290 – 294.

T.C. SCHELLING (1978b), Altruism, Meanness, and Other Potentially Strategic Behaviors, *American Economic Review, Papers and Proceedings* 68.2 (1978), pp. 229 – 230.

T.C. SCHELLING (1980), The Intimate Contest for Self-Command, *Public Interest* 60 (1980), pp. 94 – 118.

T.C. SCHELLING (1984), Self-Command in Practice, in Policy, and in a Theory of Rational Choice, *American Economic Review, Papers and Proceedings*, 74.2 (1984), pp. 1 – 11.

J. SCHIMMELPFENNIG (1994), *Theorien öffentlicher Unternehmen unter besonderer Berücksichtigung der institutionellen Arrangements*, Lit Verlag, Münster 1994.

E. SCHLICHT (1977), *Grundlagen der ökonomischen Analyse*, Rowohlt, Hamburg 1977.

R. SCHMALENSEE (1987), Advertising, in: *The New Palgrave, A Dictionary of Economics*, Macmillan, London 1987, Vol. 1, pp. 34 – 36.

H.B. SCHMID (2001), Wir-Intentionalität: Jenseits von Individualismus und Kollektivismus, *Dialektik*, 2001/1, pp. 71 – 92.

M. SCHMID (1979), *Handlungsrationalität, Kritik einer dogmatischen Handlungswissenschaft*, Wilhelm Fink, München 1979.

M. SCHMID (1979a), Rationalitätsprinzip und Handlungserklärung, in: H. LENK (ed.), *Handlungstheorien-interdisziplinär*, Vol. 2.1., Wilhelm Fink, München 1979, pp. 491 – 533.

F. SCHNEIDER (2005), Shadow Economies Around the World: What Do We Really Know?, *European Journal of Political Economy* 23 (2005), pp.598 – 642

F. SCHNEIDER (2006), Shadow Economies and Corruption All Over the World: What Do We Really Know?, CESifo Working Paper No. 1806, Munich, September 2006.

F. SCHNEIDER and D.H. ENSTE (2000), Shadow Economies: Size, Causes, and Consequences, *Journal of Economic Literature* 38 (2000), pp. 77 – 114.

F. SCHNEIDER and W.W. POMMEREHNE (1981), Free Riding and Collective Action: An Experiment in Public Microeconomics, *Quarterly Journal of Economics* 96 (1981), pp. 689 – 704.

H. SCHNEIDER (1973), *Einführung in die mikroökonomische Theorie*, Vahlen, München 1973.

P.J.H. SCHOEMAKER (1980), *Experiments on Decisions Under Risk: The Expected Utility Hypothesis*, Martinus Nijhoff, Boston/The Hague/London 1980.

P.J.H. SCHOEMAKER (1982), The Expected Utility Model: Its Variants, Purposes, Evidence and Limitations, *Journal of Economic Literature* 20 (1982), pp. 529 – 563.

N.J. SCHOFIELD (1985), *Social Choice and Democracy*, Springer, Berlin/Heidelberg/New York 1985.

A. SCHOTTER (1981), *The Economic Theory of Social Institutions*, Cambridge University Press, Cambridge (1981).

A. SCHRAM and F.A.A.M. VAN WINDEN (1991), Why People Vote: Free Riding and the Production and Consumption of Social Pressure, *Journal of Economic Psychology* 12 (1991), pp. 575 – 620.

J.A. SCHUMPETER (1908), *Das Wesen und der Hauptinhalt der theoretischen Nationalökonomie*, Duncker und Humblot, Berlin 1908.

J.A. SCHUMPETER (1916), Das Grundprinzip der Verteilungstheorie, *Archiv für Sozialwissenschaft und Sozialpolitik* 42 (1916/17), pp. 1 – 88.

J.A. SCHUMPETER (1928), Unternehmer, in: L. ELSTER, A. WEBER and F. WIESER (eds.), *Handwörterbuch der Staatswissenschaften*, Vol. 8, Jena, 4th edition 1928, pp. 476 – 487.

J.A. SCHUMPETER (1939), *Business Cycles, A Theoretical, Historical, and Statistical Analysis of the Capitalist Process*, McGraw-Hill, New York 1939.

J.A. SCHUMPETER (1942), Capitalism, Socialism and Democracy, Harper and Brothers, New York, 2nd edition 1947.

J.A. SCHUMPETER (1954), *History of Economic Analysis*, Oxford University Press, New York 1954.

G. SCHURZ (ed.) (1988), *Erklären und Verstehen in der Wissenschaft*, Oldenbourg, München 1988.

R. SCHÜSSLER, (1990), *Kooperation unter Egoisten: Vier Dilemmata*, Oldenbourg, München, 2nd edition 1997.

T. SCHWARZ (1987), Your Vote Counts on Account of the Way it is Counted: An Institutional Solution of the Paradox of Not Voting, *Public Choice* 54 (1987), pp. 101 – 121.

O. SCHWEMMER (1974), Grundlagen einer normativen Ethik, in: F. KAMBARTEL (1974), pp. 73 – 95.

G. W. SCHWERT (2003), Anomalies and Market Efficiency, in: G.M. CONSTANTINIDES, H. HARRIS and R. STULZ (eds.) *Handbook of the Economics of Finance*, Elsevier, Amsterdam et al. 2003, pp. 937 – 972.

R.R. SEARLE (1990), Collective Intentions and Actions, in: P.R. COHEN, J. MORGAN and M.E. POLLACK (eds.), *Intentions in Communication*, MIT Press, Cambridge (Mass.)/London 1990, pp. 401 – 415.

R. SELTEN (1971), Anwendungen der Spieltheorie auf die Politische Wissenschaft, in: H. MAIER, K. RITTER and U. MATZ (eds.), *Politik und Wissenschaft*, Beck, München 1971, pp. 287 – 320.

A.K. SEN (1970), *Collective Choice and Social Welfare*, Holden-Day, San Francisco 1970.

A.K. SEN (1977), Rational Fools: A Critique of the Behavioural Foundations of Economic Theory, *Philosophy and Public Affairs* 6 (1976/77), pp. 317 – 344.

A.K. SEN (1977a), Social Choice Theory: A Re-Examination, *Econometrica* 45 (1977), pp. 53 – 89.

A.K. SEN (1987), Rational Behaviour, in: *The New Palgrave, A Dictionary of Economics*, Vol. 4, Macmillan, London 1987, pp. 68 – 76.

A.K. SEN (1987a), Social Choice, in: *The New Palgrave, A Dictionary of Economics*, Vol. 4, Macmillan, London 1987, pp. 382 – 393.

A.K. SEN (1994), The Formulation of Rational Choice, *American Economic Review, Papers and Proceedings* 84.2 (1994), pp. 385 – 390.

A.K. SEN (1995), Rationality and Social Choice, *American Economic Review* 85 (1995), pp. 1 – 24.

A.K. SEN (1999), The Possibility of Social Choice, *American Economic Review* 89 (1999), pp. 349 – 378.

A.K. SEN and B. WILLIAMS (1982), Introduction, in: A.K. SEN, and B. WILLIAMS (eds), *Utilitarianism and Beyond*, Cambridge University Press, Cambridge (England) et al. 1982, pp. 1 – 21.

I. SENIOR (2006), *Corruption: The World's Big C*, Institute of Economic Affairs, London 2006.

R. SHACHAR (1993), Forgetfulness and the Political Cycles, *Economics and Politics* 5 (1993), pp. 15 – 25.

ST. SHAVELL (1980), Strict Liability versus Negligence, *Journal of Legal Studies* 9 (1980), pp. 1 – 25.

ST. SHAVELL, ST. (1984), Liability for Harm versus Regulation of Safety, *Journal of Legal Studies* 13 (1984), pp. 357 – 374.

ST. SHAVELL (1985), Uncertainty over Causation and the Determination of Civil Liability, *Journal of Law and Economics* 28 (1985), pp. 587 – 609.

ST. SHAVELL (1987), *Economic Analysis of Accident Law*, Harvard University Press, Cambridge (Mass.) 1987.

R.J. SHILLER (1978), Rational Expectations and the Dynamic Structure of Macroeconomic Models, A Critical Review, *Journal of Monetary Economics* 4 (1978), pp. 1 – 44.

R.J. SHILLER (1981), Do Stock Prices Move Too Much to Be Justified by Subsequent Changes in Dividends?, *American Economic Review* 71 (1981), pp. 421 – 435.

M. SHUBIK (1964) (ed.), *Game Theory and Related Approaches to Social Behavior*, Wiley, New York 1964.

B. SICHTERMANN (1985), Gegen eine politische Ökonomie der Hausarbeit, *Leviathan*, 2/1985, pp. 212 – 218.

H. SIEBERT (1997), Labor Market Rigidities: At the Root of Unemployment in Europe, *Journal of Economic Perspectives* 11/3 (1997), pp. 37 – 54.

H. SIEBERT (1998), Disziplinierung der nationalen Wirtschaftspolitik durch die internationale Kapitalmobilität, in: D. DUWENDAG (ed.), *Finanzmärkte im Spannungsfeld von Globalisierung, Regulierung und Geldpolitik*, Duncker und Humblot, Berlin 1998, pp. 41 – 67.

G. SIMMEL (1900), *Philosophie des Geldes*, Duncker und Humblot, München/ Leipzig 1900; quoted from the English translation: *The Philosophy of Money*, Routledge and Kegan Paul, London, 2nd edition 1990.

H.A. SIMON (1955), A Behavioral Model of Rational Choice, *Quarterly Journal of Economics* 69 (1955), pp. 99 – 118.

H.A. SIMON (1978), Rationality as Process and as Product of Thought, *American Economic Review, Papers and Proceedings* 68.2 (1978), pp. 1 – 16.

H.A. SIMON (1979), Rational Decision Making in Business Organizations, *American Economic Review* 69 (1979), pp. 493 – 513.

H.A. SIMON (1985), Human Nature in Politics: The Dialogue of Psychology with Political Science, *American Political Science Review* 79 (1985), pp. 293 – 304.

P. SINGER (1982), Ethics and Sociobiology, *Philosophy and Public Affairs* 11 (1982), pp. 40 – 64.

H.-W. SINN (1997), Das Selektionsprinzip und der Steuerwettbewerb, in: A. OBERHAUSER (ed.), *Fiskalföderalismus in Europa*, Duncker und Humblot, Berlin 1997, pp. 9 – 60.

P. SLOVIC and S. LICHTENSTEIN (1983), Preference Reversals: A Broader Perspective, *American Economic Review* 73 (1983), pp. 596 – 605.

A. SMITH (1759), *Theory of Moral Sentiments*, Millar, London 1759; quoted from the new edition: Clarendon Press, Oxford 1976.

A. SMITH (1776), *An Inquiry into the Nature and Causes of the Wealth of Nations*, W. Strahan and T. Cadell, London 1776; quoted from the new edition: Clarendon Press, Oxford 1976.

F.L. SMITH (1992), A Free-Market Environmental Program, *Cato Journal* 11 (1992), pp. 457 – 475.

G.T. SOLDATOS (1994), The Electoral Cycle: A Brief Survey of Literature, *Revue d'économie politique* 104 (1994), pp. 571 – 587.

L.B. SOLUMN (2005), Judicial Selection: Ideology Versus Character, *Cardozo Law Review* 26 (2005), pp. 659 – 689.

R. SPIEGLER (2000), Pro Arguments, Con Arguments and Status Quo Bias in Multi-Issue Decision Problems, mimeo, Nuffield College, Oxford, May 2000.

G.W. STADLER (1994), Real Business Cycles, *Journal of Economic Literature* 32 (1994), pp. 1750 – 1783.

T.D. STANLEY (1985), Positive Economics and its Instrumental Defense, *Economica* 52 (1985), pp. 305 – 319.

CH. STARMER (2000), Developments in Non-Expected Utility Theory: The Hunt for a Descriptive Theory of Choice under Risk, *Journal of Economic Literature* 38 (2000), pp. 332 – 382.

G. STAVENHAGEN (1969), Geschichte der Wirtschaftstheorie, Vandenhoeck und Ruprecht, 4th edition, Göttingen 1969, pp. 223ff.

W. STEGMÜLLER (1960), Das Problem der Kausalität, in: E. TOPITSCH (ed.), *Probleme der Wissenschaftstheorie, Festschrift für Viktor Kraft*, Springer, Wien 1960, pp. 171 – 190.

W. STEGMÜLLER (1971), Das Problem der Induktion: Humes Herausforderung und moderne Antworten, in: H. LENK (ed.), *Neue Aspekte der Wissenschaftstheorie*, Vieweg, Braunschweig 1971, pp. 13 – 74.

U. STEINVORTH (1978), Wertfreiheit der Wissenschaft bei Marx, Weber und Adorno, Ein Nachtrag zum Methodenstreit zwischen Kritischer Theorie und kritischem Rationalismus, *Journal of General Philosophy of Science* 9 (1978), pp. 293 – 306.

G. STIGLER (1961), The Economics of Information, *Journal of Political Economy* 69 (1961), pp. 213 – 225.

G. STIGLER (1962), Information in the Labor Market, *Journal of Political Economy* 70 (1962), pp. 94 – 105.

G. STIGLER (1984), Economics, The Imperial Science?, *Scandinavian Journal of Economics* 86 (1984), pp. 301 – 313.

J.E. STIGLITZ (2000), The Contributions of the Economics of Information to Twentieth Century Economics, *Quarterly Journal of Economics* 115 (2000), pp. 1441 – 1478.

V. STOCKÉ (1998), Framing oder Informationsknappheit?, Zur Erklärung der Formulierungseffekte beim Asian-Disease-Problem, in: U. DRUWE and V. KUNZ (eds.), *Anomalien in der Handlungs- und Entscheidungstheorie*, Leske und Budrich, Opladen 1998, pp. 197 – 218.

V. STOCKÉ (2002), *Framing und Rationalität: Die Bedeutung der Informationsdarstellung für das Entscheidungsverhalten*, Oldenbourgh, München 2002.

TH.M. STOKER (1993), Empirical Approaches to the Problem of Aggregation over Individuals, *Journal of Economic Literature* 31 (1993), pp. 1827 – 1874.

P. STOLZ (1979), Neue Wirtschaftsgeschichte und Neue Politische Ökonomie: Vom Vergleich zum Versuch einer Synthese, *Kyklos* 32 (1979),pp. 475 – 489.

T. STRATMANN and J. GARNER (2004), Judicial Selection: Politics, Biases, and Constituency Demands, *Public Choice* 118 (2004), pp. 251 – 270.

W. STROEBE and B.S. FREY (1980), In Defense of Economic Man: Towards an Integration of Economic and Psychology, *Schweizerische Zeitschrift für Volkswirtschaft und Statistik* 116 (1980), pp. 119 – 148.

W. STROEBE and B.S. FREY (1982), Self-Interest and Collective Action: The Economics and Psychology of Public Goods, *British Journal of Social Psychology* 21 (1982), pp. 121 – 137.

G.S. STROM (1975), On the Apparent Paradox of Participation: A New Proposal, *American Political Science Review* 69 (1975), pp. 908 – 913.

N. STRONG and M. WATERSON (1987), Principals, Agents and Information, in: R. CLARKE and T. MCGUINNESS (eds.), *The Economics of the Firm*, Basil Blackwell, New York 1987, pp. 18 – 41.

R.H. STROTZ (1955), Myopia and Inconsistency in Dynamic Utility Maximization, *Review of Economic Studies* 23 (1955/56), pp. 165 – 180.

J. STRUTHERS and A. YOUNG (1989), Economics of Voting: Theories and Evidence, *Journal of Economic Studies* 16 (1989), pp. 1 – 42.

R. SUGDEN (1981), *The Political Economy of Public Choice*, Martin Robertson, Oxford 1981.

R. SUGDEN (1986), *The Economics of Rights, Co-operation and Welfare*, Blackwell, Oxford 1981.

R. SUGDEN (2000), Team Preferences, *Economics and Philosophy* 16 (2000), pp. 175 – 204.

R. SUGDEN and I.E. ZAMARRON (2006), Finding the Key: The Riddle of Focal Points , *Games and Economic Behavior* 55 (2006), pp. 609 – 621.

J.B. TAYLOR (1993), Discretion versus Policy Rules in Practice, in: *Carnegie-Rochester Conference Series on Public Policy* 39 (1993), pp. 195 – 214.

J.B. TAYLOR (1998), A Historical Analysis of Monetary Policy Rules, in: J.B. TAYLOR (ed.), *Monetary Policy Rules*, The University of Chicago Press and NBER, Chicago 1998, pp. 319 – 341.

M. TAYLOR (1970), The Problem of Salience in the Theory of Collective Decision Making, *Behavioral Science* 15 (1970), pp. 415 – 430.

M. TAYLOR (1971), Review Article: Mathematical Political Theory, *British Journal of Political Science* 1 (1971), pp. 339 – 382.

L.L. TEH and W.F.M. DE BONDT (1997), Herding Behavior and Stock Returns: An Exploratory Investigation, *Schweizerische Zeitschrift für Volkswirtschaft und Statistik* 133 (1997), pp. 293 – 324.

R.H. THALER (1980), Toward a Positive Theory of Consumer Choice, *Journal of Economic Behavior and Organization* 1 (1980), pp. 39 – 60.

R.H. THALER (1987), Anomalies: The January Effect, *Journal of Economic Perspectives* 1/1 (1987), pp. 197 – 201.

R.H. THALER (1987a), Anomalies: Seasonal Movements in Security Prices II: Weekend, Holiday, Turn of the Month, and Intraday Effects, *Journal of Economic Perspectives* 1/2 (1987), pp. 169 – 177

R.H. THALER (1988), Anomalies: The Winner's Curse, *Journal of Economic Perspectives* 2/1 (1988), pp. 191 – 202.

R.H. THALER (1991), *Quasi-Rational Economics*, Russel Sage Foundation, New York 1991.

R.H. THALER (1992), *The Winner's Curse, Paradoxes and Anomalies of Economic Life*, The Free Press, New York 1992.

R.H. THALER and H.M. SHEFRIN (1981), An Economic Theory of Self-Control, *Journal of Political Economy* 89 (1981), pp. 392 – 406.

H. THEIL (1954), *Linear Aggregation of Economic Relation*, North-Holland, Amsterdam 1954.

H. THOBEN (1982), Mechanistic and Organistic Analogies in Economics Reconsidered, *Kyklos* 35 (1982), pp. 292 – 306.

M. TIETZEL (1981), Die Rationalitätsannahme in den Wirtschaftswissenschaften, oder: Der homo oeconomicus und seine Verwandten, *Jahrbuch für Sozialwissenschaft* 32 (1981), pp. 115 – 138.

M. TIETZEL (1983), Ökonomie und Soziobiologie, oder: Wer kann was von wem lernen?, *Zeitschrift für Wirtschafts- und Sozialwissenschaften* 103 (1983), pp. 107 – 127.

R. TILLY (1988), Wirtschaftsgeschichte und Ökonomie: Zur Problematik der Interdisziplinarität, *Jahrbuch für Neue Politische Ökonomie* 7 (1988), pp. 248 – 265.

J. TINBERGEN (1952), *On the Theory of Economic Policy*, North-Holland, Amsterdam 1952.

J. TINBERGEN (1956), *Economic Policy: Principles and Design*, North-Holland, Amsterdam 1956.

R.M. TITMUSS (1970), *The Gift Relationship, From Human Blood to Social Policy*, George Allen and Unwin Ltd., London 1970.

J. TOBIN, An Overview of the General Theory, in: G.C. HARCOURT and P.A. RIACH (eds.), *A 'Second Edition' of the General Theory*, Vol. II, Routledge, London/New York 1997, pp. 3 – 40.

R.D. TOLLISON (1982), Rent-Seeking: A Survey, *Kyklos* 35 (1982), pp. 575 – 602.

R.D. TOLLISON and R.D. CONGLETON (eds.) (1995), *The Economic Analysis of Rent-Seeking*, Edward Elgar, Aldershot et al. 1995.

E. TOPITSCH (1963), Das Verhältnis zwischen Sozial- und Naturwissenschaften, *Dialectica* 16 (1963), pp. 211 – 231.

E. TOPITSCH (1965), Sprachlogische Probleme der sozialwissenschaftlichen Theoriebildung, in *Logik der Sozialwissenschaften*, Kiepenheuer und Witsch, Köln/Berlin 1965, pp. 17 – 36.

R.L. TRIVERS (1971), The Evolution of Reciprocal Altruism, *Quarterly Review of Biology* 46 (1971), pp. 35 – 57.

S. TSURU and H. WEIDNER (1985), *Ein Modell für uns: Die Erfolge der japanischen Umweltpoliti*k, Kiepenheuer und Witsch, Köln 1985.

G. TULLOCK (1967), The Welfare Costs of Tariffs, Monopolies and Theft, *Western Economic Journal* 5 (1967) pp. 224 – 232.

G. TULLOCK (1971), The Charity of the Uncharitable, *Western Economic Journal* 9 (1971), pp. 379 – 392.

G. TULLOCK (1974), *The Social Dilemma: The Economics of War and Revolution*, University Publications, Blacksburg VA 1974.

G. TULLOCK (1987), *Autocracy*, Kluwer, Dordrecht/Boston 1987.

G.K. TURNBULL (1998), The Overspending and Flypaper Effects of Fiscal Illusion: Theory and Empirical Evidence, *Journal of Urban Economics* 44 (1998), pp. 1 – 26.

A. TVERSKY, (1969), Intransitivity of Preferences, *Psychological Review* 76 (1969), pp. 31 – 48.

A. TVERSKY and D. KAHNEMAN (1981), The Framing of Decisions and the Psychology of Choice, *Science* 211 (1981), pp. 453 – 458.

A. TVERSKY and D. KAHNEMAN(1987), Rational Choice and the Framing of Decisions, in: R.M. HOGARTH and M.W. REDER (1987), pp. 67 – 94.

A. TVERSKY, and R.H. THALER (1990), Anomalies: Preference Reversals, *Journal of Economic Perspectives* 4/2 (1990), pp. 201 – 211.

A. TVERSKY, P. SLOVIC and D. KAHNEMAN (1990), The Causes of Preference Reversals, *American Economic Review* 80 (1990), pp. 204 – 217.

T.R. TYLER (1990), *Why People Obey the Law*, Yale University Press, New Haven 1990.

T.R. TYLER (1997), Procedural Fairness and Compliance with the Law, *Schweizerische Zeitschrift für Volkswirtschaft und Statistik* 133 (1997), pp. 219 – 240.

H.W. URSPRUNG (1988), Evolution and the Economic Approach to Human Behavior, *Journal of Social Biological Structure* 11 (1988), pp. 257 – 279.

H.W. URSPRUNG (1990), Public Goods, Rent Dissipation, and Candidate Competition, *Economics and Politics* 2 (1990), pp. 115 – 132.

V. VANBERG (1975), *Die zwei Soziologien*, Mohr (Siebeck), Tübingen 1975.

V. VANBERG (1983), Der individualistische Ansatz zu einer Theorie der Entstehung und Entwicklung von Institutionen, *Jahrbuch für Neue Politische Ökonomie* 2 (1983), pp. 50 – 69.

V. VANBERG (1986), Spontaneous Market Order and Social Rules, A Critical Examination of F.A. Hayek's Theory of Cultural Evolution, *Economics and Philosophy* 2 (1986), pp. 75 – 100.

V. VANBERG (1988), Rules and Choice in Economics and Sociology, *Jahrbuch für Neue Politische Ökonomie* 7 (1988), pp. 146 – 167.

V. VANBERG and J.M. BUCHANAN (1988), Rational Choice and Moral Order, *Analyse und Kritik* 10 (1988), pp. 138 – 160.

H.R. VARIAN (1978), *Microeconomics*, W.W. Norton, New York, 3rd edition 1992.

R. VAUBEL (1997), The Bureaucratic and Partisan Behavior of Independent Central Banks: German and International Evidence, *European Journal of Political Economy* 13 (1997), pp. 201 – 204.

K.I. VAUGHN (1987), Invisible Hand, in: *The New Palgrave: A Dictionary of Economics*, Macmillan, London 1987, Vol. 2, pp. 997 – 999.

T. VEBLEN (1898), Why Is Economics Not an Evolutionary Science, *Quarterly Journal of Economics* 12 (1897/98), pp. 373 – 397.

J.R. VIDERAS and A.L. OWEN (2006), Public Good Provision and Well-Being: Empirical Evidence Consistent with the Warm Glow Theory, C*ontributions to Economic Analysis and Policy* 5, Issue 1 (2006), Article 9.

S. VOIGT (2005), The Economic Effects of Judicial Accountability: Some Preliminary Insights, International Centre for Economic Research, Working Paper No. 19, Turin, August 2005.

T. VOSS (1985), *Rationale Akteure und soziale Institutionen, Beitrag zu einer endogenen Theorie des sozialen Tauschs*, Oldenbourg, München 1985.

T.S. WALLSTEN (ed.) (1980), *Cognitive Processes in Choice and Decision Behavior*, Lawrence Erlbaum Associates, Hillsdale (New Jersey) 1980.

L. WALRAS (1874), *Éléments d' économie politique pure, ou théorie de la richesse sociale*, Lausanne/Paris/Basel 1874; quoted from der English translation of the Edition Définitive (1926): *Elements of Pure Economics, or the Theory of Social Wealth*, George Allen and Unwin Ltd., London 1954.

P.C. WASON (1966), Reasoning, in: B.M. FOSS (ed.), *New Horizons in Psychology*, Vol. I, Penguin, Harmondsworth 1966, pp. 135 – 151.

P.C. WASON (1969), Regression in Reasoning, *British Journal of Psychology* 60 (1969), pp. 471 – 480.

J.W.N. WATKINS (1952), Ideal Types and Historical Explanation, *British Journal for the Philosophy of Science* 3 (1952/53), pp. 22 – 43.

J.W.N. WATKINS (1958), The Alleged Inadequacy of Methodological Individualism, *Journal of Philosophy* 55 (1958), pp. 390 – 395.

J.W.N. WATKINS (1970), imperfect Rationality, in: R. BORGER and F. CIOFFI (eds.), *Explanation in the Behavioural Sciences*, Cambridge University Press, Cambridge 1970, pp. 167 – 217, 228 – 230.

J.B. WATSON (1924), *Behaviorism*, W.W. Norton, New York 1924.

J.B. WATSON (1927), The Origin and Growth of Behaviorism, *Archiv für systematische Philosophie und Soziologie* 30 (1927), pp. 247 – 262.

M.W. WATSON, (1993), Measures of Fit for Calibrated Models, *Journal of Political Economy* 101 (1993), pp. 1011 – 1041.

M. WEBER (1904), Die ‚Objektivität' sozialwissenschaftlicher und sozialpolitischer Erkenntnis, *Archiv für Sozialwissenschaft und Sozialpolitik*, 19 (1904); English translation in: M. WEBER, *The Methodology of the Social Sciences*, The Free Press, Glencou (Ill.) 1949, pp. 49 – 112.

M. WEBER (1919), *Politik als Beruf*, Duncker und Humblot, Berlin 1919; English translation: The Profession and Vocation of Politics, in: M. WEBER, *Political Writings*, Cambridge University Press, Cambridge (England) 1994, pp. 309 - 369.

M. WEBER (1922), *Wirtschaft und Gesellschaft*, Mohr (Siebeck), Tübingen 1922; English translation: *Economics and Society: An Outline of Interpretative Sociology*, Badminster Press, New York 1968.

H. WECK-HANNEMANN and B.S. FREY (1995), Are Incentive Instruments As Good As Economists Believe? Some New Considerations, in L. BOVENBERG and S. CNOSSEN (eds.), *Public Economics and the Environment in an Imperfect World*, Kluwer, Boston 1995, pp. 173 – 186.

H. WECK-HANNEMANN, W.W.POMMEREHNE and G. KIRCHGÄSSNER (1989), Abgabenpolitische Ideen zur Eindämmung der Schattenwirtschaft, in: H. SCHERF (ed.), *Beschäftigungsprobleme hochentwickelter Volkswirtschaften*, Duncker und Humblot, Berlin 1989, pp. 343 – 357.

E. WEEDE (1986), Sectoral Reallocation, Distributional Coalitions and the Welfare State as Determinants of Economic Growth Rates in Industrialized Democracies, *European Journal of Political Research* 14 (1986), pp. 501 – 519.

E. WEEDE (1990), *Wirtschaft, Staat und Gesellschaft*, Mohr (Siebeck), Tübingen 1990.

C.C. v. WEIZSÄCKER (1976), Die Welt aus der Sicht des Ökonomen, in: H. KÖRNER et al. (eds.), *Wirtschaftspolitik, Wissenschaft und politische Aufgabe*, Haupt, Bern 1976, pp. 67 – 83.

C.C. v. WEIZSÄCKER (1984), The Influence of Property Rights on Tastes, *Journal of Institutional and Theoretical Economics* 140 (1984), pp. 90 – 95.

M. WETZEL (1973), Wider den soziologischen Behaviourismus, *Das Argument* 15 (1973), pp. 909 – 926.

K. WICKSELL (1896), *Finanztheoretische Untersuchungen*, Gustav Fischer, Jena 1896; quoted from the abridged English translation: A New Principle of Just Taxation, in: R.A. MUSGRAVE and A.T. PEACOCK (eds.), *Classics in the Theory of Public Finance*, London, MacMillan 1958, pp. 72 – 118.

M.B. WILLIAMS (1982), The Importance of Prediction Testing in Evolutionary Biology, *Erkenntnis* 17 (1982), pp. 291 – 306.

O.E. WILLIAMSON (1964), *Managerial Objectives in a Theory of the Firm*, Prentice Hall, Englewood Cliffs 1964.

O.E. WILLIAMSON (1975), *Markets and Hierarchies*, Free Press, New York 1975.

O.E. WILLIAMSON (1979), Transaction-Cost Economics, The Governance of Contractual Relations, *Journal of Law and Economics* 22 (1979), pp. 233 – 261.

O.E. WILLIAMSON (1985), *The Economic Institutions of Capitalism: Firms, Markets, Relational Contracting*, Free Press, New York 1985.

O.E. WILLIAMSON and S.E. MASTEN (eds.) (1995), *Transaction Cost Economics*, 2 Volumes, Edward Elgar, Aldershot 1995.

E.O. WILSON (1975), *Sociobiology: The New Synthesis*, The Belknap Press of Harvard University Press, Cambridge Mass. 1975.

E.O. WILSON (1976), Academic Vigilantism and the Political Significance of Sociobiology, *Bioscience* 26 (1976), pp. 183 – 190; reprinted in und quoted from: A.L. CAPLAN (1978), pp. 291 – 303.

E.O. WILSON (1977), Biology and the Social Sciences, *Daedalus*, Issue 4/1977, pp. 127 – 140.

E.O. WILSON (1978), *On Human Nature*, Harvard University Press, Cambridge (Mass.) 1978.

F. v. WINDEN (1987), Man in the Public Sector, *De Economist* 135 (1987), pp. 1 – 28.

A. WINDHOFF-HÉRITIER (1991), Institutions, Interests and Political Choice, in: R.M. CZADA and A. WINDHOFF-HÉRITIER (eds.), *Political Choice: Institutions, Rules and the Limits of Rationality*, Westview, Boulder (Colorado) 1991, pp. 27 – 52.

S.G. WINTER (1964), Economic 'Natural Selection' and the Theory of the Firm, *Yale Economic Essays* 4 (1964), pp. 224 – 271.

R. WINTROBE (1997), Modern Bureaucratic Theory, in: D.C. MUELLER (ed.), *Perspectives on Public Choice: A Handbook*, Cambridge University Press, Cambridge (UK) et al. 1997, pp. 429 – 454.

R. WIPPLER (1978), Nicht-intendierte soziale Folgen individueller Handlungen, *Soziale Welt* 29 (1978), pp. 155 – 179.

R. WIPPLER (1985), Explanatory Sociology: The Development of a Theoretically Oriented Research Program, *Netherlands Journal of Sociology* 21 (1985), pp. 63 – 74.

U. WITT (1985), Economic Behavior and Biological Evolution: Some Remarks on the Sociobiology Debate, *Journal of Institutional and Theoretical Economics* 141 (1985), pp. 365 – 389.

U. WITT (1987), *Individualistische Grundlagen der Evolutorischen Ökonomik*, Mohr (Siebeck), Tübingen 1987.

U. WITT (1988), Eine individualistische Theorie der Entwicklung ökonomischer Institutionen, *Jahrbuch für Neue Politische Ökonomie* 7 (1988), pp. 72 – 95.

U. WITT (2003), *The Evolving Economy: Essays on the Evolutionary Approach to Economics*, Edward Elgar, Cheltenham (U.K.) et al. 2003.

D. WITTICH (1976), *Über Gegenstand und Methoden der marxistisch-leninistischen Erkenntnistheorie*, VEB Deutscher Verlag der Wissenschaften, Berlin, 2nd edition 1976.

D. WITTICH, K. GÖSSLER and K. WAGNER (1980), *Marxistisch-leninistische Erkenntnistheorie*, VEB Deutscher Verlag der Wissenschaften, Berlin 1980.

M. WOODFORD (2001), The Taylor Rule and Optimal Monetary Policy, *American Economic Review, Papers and Proceedings* 91.2 (2001), pp. 232 – 237.

H. WORKING (1953), Futures Trading and Hedging, *American Economic Review* 43 (1953), pp. 314 – 343.

H.P. YOUNG (1998), Social Norms and Economic Welfare, *European Economic Review* 42 (1998),pp. 821 – 830.

P.J. ZAK (2004), Neuroeconomics, *Philosophical Transactions of the Royal Society: Biological Sciences* 359 (2004), pp. 1737 – 1748.

K. ZIMMERMANN (1984), Die Inzidenz der Umweltpolitik in theoretischer und empirischer Sicht, *Jahrbücher für Nationalökonomie und Statistik* 199 (1984), pp. 502 – 521.

K.F. ZIMMERMANN (1984), Staatliche Incentives und intertemporale Ressourcenallokation im Lebenszyklus der Frau, in: H. SIEBERT (ed.), *Intertemporale Allokation*, Frankfurt 1984, pp. 81 – 132.

R. ZINTL (1984), Erübrigen 'Ökonomische' Verfassungstheorien die normative Diskussion über Entscheidungsregeln, in: K.-P. MARKL (ed.), *Analytische Politikphilosophie und ökonomische Rationalität Vol. 2: Verfassungen, Gerechtigkeit und Utopien*, Westdeutscher Verlag, Opladen 1984, pp. 27 – 40.

R. ZINTL (1986), Ökonomisches Rationalitätskonzept und normorientiertes Verhalten, *Jahrbuch für Neue Politische Ökonomie* 5 (1986), pp. 227 – 239.

R. ZINTL (1989), Der Homo Oeconomicus: Ausnahmeerscheinung in jeder Situation oder Jedermann in Ausnahmesituationen, *Analyse und Kritik* 11 (1989), pp. 52 – 69.

D.J. ZIZZO, ST. STOLARZ-FANTINO, J. WEN and E. FANTINO (2000), A Violation of the Monotonicity Axiom: Experimental Evidence on the Conjunction Fallacy, *Journal of Economic Behavior and Organization* 41 (2000), pp. 263 – 276.

P. ZWEIFEL and O. WASER (1987), Kostenbeteiligung oder Bonusangebot in der Krankenversicherung?, in: P. OBERENDER (ed.), *Gesundheitswesen im Umbruch*?, Verlag P.C.O., Bayreuth 1987, pp. 77 – 101.

J. ZWEIMÜLLER (2000), Inequality, Redistribution, and Economic Growth, *Empirica* 27 (2000), pp. 1 – 20.

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