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Abstract

First the assumption of self-interest as applied in Economics is presented. Here we also discuss areas in which (many) people behave less self- but more other-regarding than traditional economic models assume. Then, greedy behaviour is considered as existing in the political and economic 'world'. Here we refer to corruption as well as to the role of money as a positional good. We also discuss such behaviour in the academic world, in which money plays a role as well as reputation. Thus, while the assumption of mutually disinterested rationality is a very powerful instrument for analysing individual behaviour, to explain some phenomena we have to recognise that people are not only sometimes other-regarding, but also sometimes greedy, and that they might value money much more than traditional Economics assumes. We conclude with some remarks on what we can learn in this respect from Behavioural Economics.

Keywords

Economic Model of Behaviour, Self-Interest, Altruism, Greed, Corruption.

JEL Classification

B41.

1. Introduction

[1] The basic economic model of behaviour, the ‘homo oeconomicus’, which is the basic fundament of every ‘understanding’ social science in the sense of MAX WEBER, consists of the principle of methodological individualism, combined with the weak rationality principle. Contrary to a widely held belief, however, this model does not include any specific motivational assumption.¹⁾ Methodological individualism implies that only individuals act; group behaviour is to be explained by the interactions of individuals. They are assumed to have intentions (objectives) represented in their preference functions, limited action possibilities (restrictions), and perceptions of these alternatives, which do not have to be correct; they might even be totally wrong. Acting according to the weak rationality principle means that individuals choose the action that they subjectively believe to be the best one to reach their goals, given their subjective perception of available alternatives at the time when they make the decision. As we do not know what is actually going on in their brains, it is impossible to say whether they ‘really’ behave rationally (in this sense) in any concrete situation; this assumption is neither verifiable nor falsifiable. Thus, while there are other, stronger versions of the rationality principle that are testable, the weak rationality principle is not an empirically testable hypothesis; it is primarily a methodological device allowing us to proceed in the social sciences.²⁾

[2] To develop testable theories about individual behaviour, we have to add two (sets of) assumptions to the basic model: (i) Assumptions about the perceptions of the individuals, i.e., assumptions about their informational status, and (ii) assumptions about their motivations. Without such assumptions, the model remains tautological; assuming special objective functions and/or specific perceptions, every behaviour might be explained ex post, but none can be excluded ex ante. The leeway of such a theory would be total, its empirical content zero.

[3] The motivational assumptions might range from benevolent, altruistic behaviour to malevolent, extremely egoistic behaviour and even to behaviour with the intent to harm others. In economic analyses, the usual assumption is self-interest: individuals strive for their own interests; the interests of others are relevant only insofar as they influence the leeway of their actions.³⁾ It is a generally held belief that this assumption is appropriate for most if not all market transactions and insofar quite appropriate for analysing economic processes but much less appropriate, for example, for analyses of political processes. Voting behaviour, for example, can hardly be explained by employing this assumption.⁴⁾

1. A detailed presentation of the economic model of behaviour is given in G. KIRCHGÄSSNER (2008).

2. On the weak rationality principle, see G. KIRCHGÄSSNER (2013).

3. P.H. WICKSTEED (1910, p. 180) calls this assumption ‘non-tuism’: the individual is not interested, neither positively, nor negatively, in the well-being of those persons with whom he has market transactions. See, for example, also G. BRENNAN and J.M. BUCHANAN (1981, p. 156): “*Homo economicus*, by construction, is not predicted to act other than in furtherance of his interests, vis-à-vis that of his trading cohort, as he evaluates such interest at the moment of choice.”

4. On this, see for example G. KIRCHGÄSSNER (2010).

[4] The basic model can also be and has been applied in psychological analyses. Here, individuals' preferences play a much more prominent role than in traditional economic analyses, where they usually are assumed to be stable over time. Cooperation between economists and psychologists during the last decades led to the emergence of a new sub-discipline: Behavioural Economics. There has been extensive testing of the economic model and of two of its assumptions in particular: the rationality assumption and the assumption of self-interest. With respect to the rationality assumption, the strong version of the von Neumann-Morgenstern expected utility theory has been rejected in many applications and alternatives as, for example, prospect theory or regret theory, have been developed.⁵⁾

[5] The assumption of self-interest has also been refuted by many experiments, in particular in dictator games, ultimatum games, and in public good games.⁶⁾ People seem to be more other-regarding than the usual version of the economic model of behaviour as applied in Economics assumes. This experimental evidence reinforces an important result from field studies: the assumption of self-interest is not generally valid; people behave – at least in some situations – also other-regardingly. This has caused J. TITTENBRUNN (2013), for example, to speak of “The Death of Economic Man”, and E.J. O’BOYLE (2007) to write a “Requiem for *Homo Economicus*”, while T.J. HORTON (2011) predicts “The Coming Extinction of *Homo Economicus*” and N. HÄRING (2001) already claims that “The homo oeconomicus is dead”.⁷⁾

[6] The fact that the assumption of self-interest is not generally valid does, however, not imply that it is generally invalid, as such statements or titles suggest. An open question to be answered by empirical research is the conditions under which to apply this assumption when analysing social sciences questions and the conditions under which it should not be applied. Moreover, aside from the fact that such statements do not distinguish between the basic model and one of its particular, though commonly used variants, they also do not take into account the particular experimental situation: in dictator as well as in ultimatum and public good games, subjects give away money they received as a gift, not as an exchange, for example, for their work. As T.L. CHERRY, P. FRYKBLOM, and J.S. SHOGREN (2002) show, if the subjects first have to earn their money, depending on the experimental design, only 3 to 5 percent of the dictators do not keep all the money for themselves. Thus, the experimental results showing other-regarding behaviour cannot be straightforwardly generalised to cover situations outside the laboratory; such behaviour depends very much on the experimental design, and the

5. For an overview of tests of the expected utility hypothesis, see P.J.H. SCHOEMAKER (1982). For alternative approaches, see for example D. KAHNEMAN and A. TVERSKY (1979) or G. LOOMES and R. SUDGEN (1982). Much earlier, H.A. SIMON (1955, 1978) already challenged the neoclassical assumption of full or substantial rationality and presented as an alternative his concept of bounded or procedural rationality.

6. On the dictator game, see for example D. KAHNEMAN, J.L. KNETSCH and R.H. THALER (1986); for the ultimatum game, see W. GÜTH, R. SCHMITTBERGER and B. SCHWARZE (1986); and for the public good game, see R. M. ISAAC and J.M. WALKER (1988, 1988a).

7. N. HÄRING, Der Homo oeconomicus ist tot, *Financial Times Deutschland* of March 14, 2001, http://ockenfels.uni-koeln.de/fileadmin/wiso_fak/stawi-ockenfels/pdf/Presse/Der_Homo_oeconomicus_ist_tot.pdf (17 June 14).

relevant question is the conditions under which the situation in the laboratory mirrors real world decision situations.⁸⁾

[7] In the discussion about the recent financial and economic crisis, references to behavioural economics, in particular to behavioural finance, played a major role.⁹⁾ It was stated, for example, that traders do not behave like the rational self-interested individual of neoclassical theory, because emotions play a major role in their behaviour.¹⁰⁾ While this is mainly a debate regarding the validity of the rationality assumption, it also questions the assumption of self-interest.¹¹⁾ Though it is absolutely correct that self-interest is not the only relevant motivational force, this reference to behavioural economics is not without problems. So far, the main criticism of the economic model of behaviour based on the results of behavioural economics was that people do not behave as self-interestedly but more other-regardingly than traditional economic theory assumes.¹²⁾ But one of the major causes for the financial crisis has often been seen in the greed of bank managers and traders; some authors point to this cause nearly exclusively.¹³⁾ Thus, it was definitely not other-regarding behaviour, but overstated self-interested or even selfish behaviour that might have led to the crisis. So far, however, behavioural economics has contributed much less to the explanation of such behaviour. Thus, while accepting that (pure) self-interest is not the only motivation of individual behaviour, it is not obvious what we can learn from behavioural economics about the economic crisis.

[8] The question is therefore: How far does the assumption of self-interest take us when analysing individual behaviour and when do we have to deviate from it, in a positive or ‘negative’ direction. Today, there is quite an extensive literature on altruism, i.e., on positive deviations, but hardly any on greed, i.e., on negative deviations.¹⁴⁾ Thus, while we have theories of altruistic behaviour, we do not yet have ones of greedy behaviour. This paper is far from presenting a well-developed theory; it only attempts to indicate the direction in which such theories might go.

8. There are also other experimental results that question the general validity of the results of simple dictator games. See for example T. BROMBERG, T. ELLINGSEN and M. JOHANNESSON (2006), J.A. LIST (2007) or N. BARDSLEY (2008).

9. See for example T. LAWSON (2009), M. McDONALD (2009) or A. KIRMAN (2010).

10. See for example D. COLANDER et al. (2009) or TH. WILLET (2010).

11. See for example T. WILLET (2010, p. 199), who refers to ADAM SMITH and his regard to the moral dimension. For the impact of greed and fear on fund performance see C.A. LI and J.C. WANG (2013).

12. Aside from the literature mentioned above, see for example also H. GINTIS (2010) or S. BOWLES and H. GINTIS (2009), who base their critique of the economic approach explicitly on the results of ultimatum and public good games (among other arguments).

13. See for example P. MASON (2009), V.B. KOTHARI (2010), M.I. MATZUNDER and N. AHMAD (2010) or H.D. PLATT, C.R. MIRICK and M.B. PLATT (2011). But this argument was much more prevalent in the press and in the Internet than in the scientific literature.

14. In a recent book on “Economic Theory of Greed, Love, Groups and Networks” by P. FRIJTERS and G. FOSTER (2013), for example, ‘greed’ is equated with wealth maximisation, the traditional assumption of economic analyses, and only ‘positive’ deviations from this assumption are discussed.

[9] While altruistic and greedy behaviour both contradict most of our economic models, it is nevertheless in line with the rational choice approach in the social sciences. As mentioned above, this approach is based on methodological individualism and employs the ‘weak rationality principle’, but does not make any assumptions about the structure and/or content of the utility function. As mentioned above, by an appropriate specification of the utility function (and corresponding informational assumptions), any behaviour can ex post be made compatible with this approach; this includes other-regarding as well as greedy behaviour. But to derive propositions with empirical content, we have to make specific assumptions about the utility function, and the problem with greedy behaviour is that the assumptions we usually employ in economic models and that are very useful for many explanatory purposes exclude greedy behaviour.

[10] In the following, we first discuss in more detail the – more or less neutral – assumption of self-interest as applied in Economics and how far it can take us (*Section 2*).¹⁵⁾ Here, we also consider areas in which (many) people behave less self-regardingly and more other-regardingly than traditional economic models assume. In *Section 3*, we discuss greedy behaviour as existing in the political and economic ‘world’. Here, we refer to corruption as well as to the role of money as a positional good. *Section 4* discusses such behaviour in the academic world. Here, along with reputation, money also plays a major motivational role. We sum up and conclude with some remarks on what we can learn in this respect from Behavioural Economics (*Section 5*).

2 The Assumption of Self-Interest

[11] The idea that people follow their own interests has a long tradition in Economics.¹⁶⁾ According to F.Y. EDGORTH, 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 the utility function, which allows representing altruism, this rarely happens. Therefore, the question is whether individuals nearly always behave self-interestedly or if they also deviate from this assumption, and in which situations such deviating behaviour might occur. To be distinguished from this the question is whether the assumption of self-interest may be appropriate for methodological reasons, even if one knows that this assumption can be wrong in some or even many situations.

[12] Self-interest and in particular selfishness are not generally considered positive character traits. However, such behaviour may not be quite as unpleasant as it might appear at first sight. After all, homo oeconomicus behaves neutrally towards other people. J. RAWLS (1971, p. 143) denotes his behaviour as ‘mutually disinterested rationality’. It is certainly not a distinct Christian behaviour, but probably an apt description of our behaviour in many situations,

15. For a more detailed elaboration on which this part is mainly based, see G. KIRCHGÄSSNER (2008, Chapter 2), but see also G. KIRCHGÄSSNER (2013).

16. On the development of ideas of self-interest, see D.H. MONRO (1987).

in particular on markets. Moreover, 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, for example, cannot provide his employees with extraordinary social or monetary benefits, if he is afraid that a price increase, due to increased costs, would endanger the sale of his products. After all, this would not be in the workers' interest either, at least not as soon as it endangered their jobs. Thus, successful entrepreneurs behave to a large extent at least *as if* they sought to maximise profits.¹⁷⁾

[13] On the other hand, there are also many situations in which people behave selfishly even though they could behave differently and – from a moral point of view – perhaps should do so. This holds in particular if they try to reach their objectives with guile, if they behave 'opportunistically'.¹⁸⁾ 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. O.E. WILLIAMSON (1975) has shown that many social institutions have been developed with the purpose of reducing opportunistic behaviour. This holds not only for legal regulations, but also for regulations outside the legal system that provide strong incentives to act in adherence to contractual agreements.

[14] Finally, in many cases the true motivations of individuals are of little relevance or of no relevance at all for the social result of their actions. As T.C. SCHELLING (1978) showed with numerous examples, there are many situations in which the conditions of acting are so fixed that individual behaviour influences the individual results, but not the social ones. There are, however, also situations in which the social result strongly depends on the individuals' motivations. The basic structure of many such situations is a 'prisoner's dilemma' or, more generally, a situation in which the socially 'best' outcome is achieved if the individuals cooperate, despite the fact that individual rationality would demand that they defect.¹⁹⁾

[15] Cooperation, however, does not necessarily lead to a socially better (Pareto-superior) outcome because the situation of uninvolved third parties can be worsened. Cartels, for example, have the structure of a prisoner's dilemma, and cooperation between their members, be it agreements about prices or the segmentation of market areas, are legally prohibited, because consumers who are not taking part in these decisions will have to bear the burden. Thus, cooperation leads in many cases, but not always, to social improvement.

17. For an analysis of such 'as if' behaviour that might occur in particular in competitive environments, see the classic contributions of A.A. ALCHIAN (1950) and M. FRIEDMAN (1953).

18. The following definition for opportunism is given by O.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." (1975, p. 47.)

19. In this context the 'socially best outcome' is the one that would be chosen by the individuals if they did not know in which position they would finally be in, i.e., if they were behind a 'veil of ignorance', in J. RAWLS' (1971) terminology. R. SCHÜSSLER (1990), for example, has discussed several other social dilemmas that are much more difficult to solve than the prisoners' dilemma and in which it is less clear what the 'socially best outcome' is.

[16] The situation is 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 in the prisoner's dilemma. The larger the number of players, the more difficult it is to reach an agreement, making the incentive to behave cooperatively even smaller for each player. There are, however, cases in which citizens (regularly) cooperate in such situations, in which, for example, they make voluntarily contributions to social institutions that are useful for everybody but when the individual contributions have only marginal effects. Voter participation in democratic elections, as mentioned above, may serve as an example. The political system of (Western) democracies can be regarded as being advantageous for (nearly) all people concerned. Its permanent existence, however, can be secured only through voluntary contributions by a considerable percentage of citizens, and participation in an election or referendum is such a contribution. The high turnout that can be observed in many democracies is an example of behaviour that cannot be explained by purely self-interested individual calculations.²⁰⁾

[17] To save the assumption of self-interest, one might rely on 'psychic costs'. If, during their socialisation, people have internalised the 'civic duty of participating in elections' and participate later on, despite the obvious costs of participation, the reason might be to evade psychic costs: according to the theory of cognitive dissonance, there are costs if individuals consciously behave against the norms they have internalised (and therefore also accepted).²¹⁾ These psychic costs may be greater than the (real) observable costs resulting from obeying the norm, in our case from participating in an election.

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

[19] In many cases, however, it is 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. One of the functions of the press in our society is to point out the offences against norms by (prominent) members, even if these offences are not illegal.²²⁾ The fear of this mod-

20. On this, see G. KIRCHGÄSSNER (1990) or R. ZINTL (1986).

21. For the theory of cognitive dissonance developed by L. FESTINGER (1957), see for example K.D. OPP (1970, pp. 251ff.), as well as the literature presented there. G.A. AKERLOF and W.T. DICKENS (1982) show how this theory can be used in the framework of economic analysis.

22. See, as a recent example, the German newspapers' discussion of PEER STEINBRÜCK'S honorariums for speeches during recent years. See for example: Steinbrück veröffentlicht Nebeneinkünfte, *Zeit.Online* of October 30, 2012; <http://www.zeit.de/politik/deutschland/2012-10/peer-steinbrueck-nebeneinkuenfte> (17 June 14).

ern version of a ‘pillory’ might induce many people to abide by social norms, even if they do not accept these norms as being justified and/or if their observance is connected with costs.²³⁾

[20] Moreover, it should also be mentioned 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 toward the now (relatively) more attractive alternatives. It is only the changes in restrictions that matter here as long as the preferences, and with them the motives, of acting people remain (nearly) constant. On the other hand, we must bear in mind that, in most situations, altruism is not the ‘typical’ behaviour of individuals; typical is rather the ‘neutral’ assumption of a ‘mutually disinterested rationality’ which allows disregarding altruism or malevolence.

[21] Finally, in some situations, it makes sense to presuppose contrafactually that individuals behave self-interestedly or even malevolently toward each other. For example, if one wants to know whether certain rules in family law make sense, 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. But if the marriage has broken up and if the partners possibly meet each other 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 in accordance with the economic model of behaviour. But this applies not 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 failed to take into account the actual possibilities of evading the law that were detected and used by self-interested citizens.²⁴⁾

[22] Summing up, we can therefore say that, from a moral point of view, the assumption of individual self-interest is a neutral assumption that excludes behaviour that is either particularly positive or especially negative. On the other hand, it is typical of average human behaviour in many situations and in this sense also realistic. Furthermore, there are situations in which the contrafactual presumptions of self-interested behaviour seem to be reasonable. All this speaks for working with the assumption of self-interest. However, as the classic example of voter participation shows, not every behaviour can be explained by (pure) self-interest, and this ‘deviating’ behaviour might be of great social relevance.

23. See for example K.D. OPP (1985) on the effects (effectiveness) of so-called ‘soft incentives’.

24. This also applies to the analysis of constitutional rules. On this, see D. HUME (1741, pp. 42f.). This line of reasoning is also followed within the framework of Constitutional Economics. On this, see for example G. BRENNAN and J.M. BUCHANAN (1983), but also G. KIRCHGÄSSNER (2014).

3 On Greedy Behaviour

[23] As mentioned above, when deviations from the assumption of self-interest have been discussed, nearly always deviations in the ‘positive’ direction were at stake: moral or altruistic behaviour or even the behaviour of heroes.²⁵⁾ Extreme selfish or greedy behaviour has rarely been discussed. When economists have discussed it at all, it has mainly been in relation to the financial crisis.²⁶⁾ There is, however, another strand of the literature; it relates greed to economic (or business) education.²⁷⁾ Here, the main question is whether it is due to selection and/or education that Economics and Business students are more self-regarding and less other-regarding than students of other disciplines, as experimental studies show. The main literature discussing greedy behaviour, on the other hand, is not in economics itself, but about the (economic) causes of civil wars, which centre on the motivations of greed and grievance.²⁸⁾

[24] One problem is how to define greedy behaviour. As mentioned above, some authors equate greedy behaviour with self-interest. Of course, this does not correspond to our ordinary use of language. While (not-excessive) self-interest is largely accepted in our society, greed is not; the word has a clear negative connotation. Moreover, as ADAM SMITH (1776) already told us, self-interest is the driving force of our society: people tend to try to improve their personal situation. And in market societies we rely on this force: “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. 16.)²⁹⁾ And while he accepts self-love and stresses its positive role for the society he values (excessive) avarice negatively and points to the dangers of avarice for the stability of a society.³⁰⁾

[25] Thus, the problem is to distinguish greed from this ‘normal’ or ‘enlightened’ self-interest. It is comparatively easy to formally describe altruistic behaviour by including, for example, the utility of other people or voluntary contributions to a public good into the individual’s utility function, as J. ANDREONI (1988, 1990), for example, has done. One might object that such an approach treats others as ‘means’ in order to improve one’s own well-being. It can, however, also be interpreted that one considers others as ‘ends’ in the Kantian sense,

25. On the discussion of altruistic behaviour, see for example J. ANDREONI (1988, 1990) or G. KIRCHGÄSSNER (2010); on the discussion of heroic behaviour, see G. KIRCHGÄSSNER (2002).

26. See for example M.I. MATZUNDER and N. AHMAD (2010) or H.D. PLATT, C.R. MIRICK and M.B. PLATT (2011).

27. See for example G. KIRCHGÄSSNER (2005) as well as L. WANG, D. MALHOTRA and J.K. MURNIGHAN (2011) and the literature cited there.

28. See for example the contributions in M. BERDAL and D. MALONE (2000), the review essay by M. BERDAL (2005), or S.M. MURSHED and M.Z. TADJOEDDIN (2009).

29. It is interesting to note that A. SMITH speaks here of self-love and not of self-interest. He never uses the term greed, but he speaks of (excessive) avarice, and always with a negative connotation. On the history of economic thinking about greed, see for example R. VERBURG (2012), who, however, does not see the negative connotation of greed.

30. See for example A. SMITH (1759, p. 51, p. 131), but also A. SMITH (1776, p. 550).

and the utility function describes how one weighs one's own well-being against that of others. The intention of the acting person is different in these two interpretations, but formal economic models represent them as (formally) equivalent.

[26] It is much more difficult to formally represent greed in a utility function. M.T. CLEMENTS (2013, p. 952) mentions two possible definitions of greed. The first one, referring to J. KAY (2009), is “self-interest at another's expense.” However, as M.T. CLEMENTS (2013) correctly mentions, this also holds for many totally legitimate market activities. It holds, for example, for all activities creating negative monetary externalities. His second and preferred definition is “self-interest at the expense of total value.” The problem with this definition, on the other hand, is that it would classify many actions as greedy that reduce total value but are not directed by excessive self-interest. This holds, for example, for actions causing real external effects in a society, even if they are totally legitimate.³¹⁾

[27] This paper employs a third definition: We speak of greedy behaviour if an individual seeks money ‘for its own sake’, i.e., beyond its instrumental use for consumption (or other meaningful) purposes, the function it has in traditional economic models. In the latter, the role of money (income or wealth) is to provide means that allow the consumption of goods and services and/or investments to increase future production and, therefore, future consumption; utility is finally always derived from consumption of goods and not from the possession of money itself; the behaviour of Dagobert Duck, which might serve as a literary prototype of a greedy individual, is not consistent with this approach.³²⁾ This does not preclude that some people, entrepreneurs for example, become very rich; but even their utility depends on the goods they consume and not on the value of their firm, i.e., their richness.

[28] This definition corresponds to one given by J.M. CHILDS (2000, p. 2): “Greed or avarice is (1) the excessive desire for goods and wealth, (2) the inordinate desire for acquiring and hoarding money, and (3) closely related to covetousness, which includes the desire for the possessions of others” (p. 2). It is also similar to the definition given by H. JIN and X.Y. ZHOU (2013, p. 128): “Greed as a common term holds two defining features: (1) a high desire for wealth, and (2) the subsequent aggressive action to fulfil this desire”, and also to the one given by R. CRAWSHAW (1996, p. 1597): “Greed is frequently thought of as excessive acquisitiveness for money.”³³⁾

[29] While there is no general (economic) theory of greedy behaviour available so far, there are at least some phenomena that, according to this definition, point to greedy behaviour, at

31. As A.K. SEN (1970) has shown in his paper on the Liberal Paradox, liberal rights might prevent a Pareto-efficient situation. P. BERNHOLZ (1974) has shown that this might be the case when real external effects are at stake.

32. See for example A. DEATON (1987, p. 592), who, in his contribution about “consumers' expenditure”, shows “perhaps the most general specification of preferences that could be considered” is one in which lifetime utility only depends on current and expected future consumption.

33. On money “in its role of providing a way to pursue acquisition for its own sake”, see also D.P. LEVINE (2000, p. 131).

least as long as we do not want to employ rather strong and hardly plausible assumption about the behaviour of individuals, such as extremely high discount rates. This holds even if we abstract from the behaviour of bankers that has been criticised so extensively in recent years. One example is corruption. Economic Analysis of Law states that officials might become corrupt if the benefit of the additional money they gain is larger than the expected loss if corruption is detected.³⁴⁾ Given the very large loss that usually consists not only of a fine, but nearly always of also losing one's job, suffering a loss of reputation, often also going to jail and, in particular in Germany, sometimes even losing one's old age pension, it is astonishing how small the sums at stake often are. And it is not only the criminal kind of corruption that matters in this respect, but also 'light' or legal corruption;³⁵⁾ in recent decades, this has brought about the downfall of several politicians and high bureaucrats. In most of these cases, the sums at stake were rather small compared with the loss of reputation and all the other penalties these politicians suffered. Under the variant of rational behaviour as usually employed in economics models, i.e., with a low discount rate and a somewhat realistic estimate of the detection probability, there should be much less corruption than actually occurs, in particular in low corruption countries like Germany or Switzerland.³⁶⁾

[30] Thus, that at least some people risk so much for such small sums of money is hardly compatible with the usual economic models of individual behaviour; to make it compatible, we have either to assume very high discount rates and/or a totally wrong perception of the reality.³⁷⁾ Moreover, since HERMANN HEINRICH GOSSEN published his 'First Law' in 1854, we are taught that marginal utility decreases, and this should also hold for the marginal utility of money. Thus, at least under the assumption often employed in traditional economics that utility functions are identical (perhaps up to a random term), rich people should strive less for additional money (income) than poor people, because it raises their utility level less. On the other hand, if the marginal utility of money decreases, rich people need much more additional money in order to improve their utility by a certain amount than poor people do. Thus, they might be more eager to get additional income. This coincides with the psychological literature that shows that upper class (rich) people are more self-centred and show less ethical behaviour than lower class (poor) people do.³⁸⁾

[31] The more fundamental aspect, however, is that for some or perhaps even many people the role of money is different from the one it plays in our models. There is a (economic) liter-

34. See S. ROSE-ACKERMAN (1975, p. 190). The expected costs of corruption might include a moral component.

35. On legal corruption, see also D. KAUFMANN and P.C. VINCENTE (2011).

36. On the extent of corruption in different countries, see TRANSPARENCY INTERNATIONAL (2013). Of 177 countries evaluated, Switzerland is the seventh- and Germany the twelfth-least corrupt country.

37. This holds not only for the explanation of corruption, but also, for example, for the 'rational' theory of addiction by G.S. BECKER and K.M. MURPHY (1988). The relevant implicit assumption in their model is also that rational drug consumers have an extremely high discount rate.

38. See for example P.K. PIFF et al. (2010, 2012), M.W. KRAUS et al. (2012) or S.T. TRAUTMANN, G. VAN DE JUILEN and R.J. ZECKHAUSER (2013).

ature that shows that money is not the only motive people have; there are other motives as well that are sometimes even more relevant than money.³⁹⁾ The opposite, however, can also hold: that money is much more important than traditional economic theory assumes. But why should this be the case?

[32] So far, the literature suggests (at least) four possible, non-exclusive reasons for this: (i) people might be addicted to money, (ii) loss aversion, (iii) money might be a positional good, and (iv) people might need money to keep up with their peers.

- (i) First, money might be like a drug and make people addicted. A possible neuroeconomic explanation of such addictive behaviour is presented by C. CAMERER, G. LOEWENSTEIN and D. PRELEV (2005, p. 35). They conjecture that people value money without considering what to buy with it.
- (ii) There is an asymmetry between the additional utility I gain from an increase of my income and the utility loss I suffer if my income is reduced by the same amount. As D. KAHNEMAN and A. TVERSKY (1979) show, individuals are subject to loss aversion: they are risk-averse with respect to gains but risk-loving with respect to losses. Based on prospect theory, H. JIN and X.Y. ZHOU (2013) show that sufficiently greedy traders are willing to take enormous risks in order to gain huge rewards, by taking into account only expected but not potential losses.⁴⁰⁾ Moreover, the fear of losing one's current standard of living (consumption) might be one reason for engaging in risky activities like corruption.⁴¹⁾
- (iii) This leads to a further aspect of money (or income) that might play a role in this respect: income as a positional good. Why, for example, did traders become criminal despite the fact that they had extremely high incomes? Seen from a perspective of an 'average citizen', many of them had within a few years and some of them even in one year a much higher income than other people have in their whole lifetime. Thus, even if they lose their jobs because of (legal) mismanagement, they would have no problem living in a decent way for the rest of their lives. Why do they want to earn money they will never be able to spend on consumption? For these (and also other) people, money might be a positional good: their income has a large impact on their social status, whether they can use it for consumption purposes or not.⁴²⁾ And while the positional goods mentioned in

39. See for example B.S. FREY (1997).

40. Potential losses might be very large even if expected losses are small. To restrict the impact of greediness on the behaviour of traders, H. JIN and X.Y. ZHOU (2013) propose to impose a priori limits to potential losses.

41. This can be interpreted as a variant of the habit-persistence theory of consumption as originally developed by J. DUESENBERY (1949). He already mentioned the 'ratchet effect' (p. 115), i.e., a possible asymmetry in consumer behaviour, but only when discussing the (macroeconomic) consumption function. To this day, whenever habit persistence is assumed, nearly always a symmetric version of this theory is applied.

42. The theory of positional goods goes back to F. HIRSCH (1976), who, however, relies on earlier work by P.H. WICKSTEED (1910) and R. HARROD (1958). For policy applications, see for example R.H. FRANK (2005).

the literature are mainly luxury goods like large homes, expensive cars, or gifts on special occasions,⁴³⁾ the ultimate positional good in the modern business world and in particular in the finance industry might be money or income. If the CEO of the UBS, OSWALD GRUEBEL, earned 27 million CHF in 2009/10, the CEO of the Credit Swiss, BRADY DOUGAN, had to earn 90 million CHF. Compared with this, JOSEF ACKERMANN, the CEO of the Deutsche Bank had a relatively low salary of ‘only’ 9.6 million Euros.⁴⁴⁾ These salaries have hardly anything to do with the income considered in our traditional economic models; if one does not only want to explain them as the self-serving of a small caste of top managers, exploiting consumers and shareholders, the only remaining solution might be that income is to a large extent a positional good on these levels. Because what they strive for is to have more (income) than the others in their reference group, they show ‘equity aversion’ as demonstrated by C. FERSTMAN, U. GNEEZY and J.A. LIST (2012), which is in stark contrast to the inequity aversion discussed in the Behavioural Economics literature.⁴⁵⁾

- (iv) This, however, does not explain why people, who are usually risk-averse, engage in risky activities in order to increase their income. A motive might be what has been called ‘catching (or keeping) up with the Joneses’, i.e., when individuals try to keep up a standard of living equal to that of relevant others in their (perceived) reference group. The fear of falling behind if others can increase their standard of living might have similar effects as (or even be interpreted as a special variant of) loss aversion and, therefore, promote risky behaviour. This might hold for top politicians in particular, because there are often businessmen (managers or entrepreneurs) in their reference groups who have much higher incomes with whom it is difficult if not impossible to keep up. Thus, accepting ‘small’ gifts from them might seem to be acceptable.⁴⁶⁾

Thus, there are several reasons why money can play a more important role for individual behaviour than traditional economic theory assumes. They all can lead to behaviour that is no longer compatible with the relatively neutral assumption of mutually disinterested rationality. On the other hand, while the first three cases have a clear connection to greed, (iii) keeping up with the Joneses is rather a result of envy than of greed: the result of other-regarding behaviour in a negative direction. Thus, greed is not the only reason why people seek money more intensely than traditional economic theory assumes.

43. See for example R.H. FRANK and P.J. COOK (1995, pp. 41ff.).

44. For examples of excessive executive compensation, even in cases of low performance, see for example J.M. CHILDS (2000, pp. 36ff.) or V.B. KOTHARI (2010, p. 53ff.).

45. On inequity aversion, see for example E. FEHR and K.M. SCHMIDT (1999) or G.E. BOLTON and A. OCKENFELS (2000). – Another group in which we can find excessively high incomes combined with even criminal acts to earn even more money are lawyers, as mentioned in L.G. LERMAN (2005, p. 612), who at a workshop “described the recent spate of cases in which lawyers with enormously high incomes have gone to prison for stealing from their clients or partners.” She speaks of a “workaholic, money-hungry culture that has taken over so many large law firms eroding the integrity of many lawyers and ruining the life of some.*

46. On the relation between greed and loss, see also D.P. LEVINE (2000).

4 Greedy Behaviour in Academics

[33] Greedy behaviour is not restricted to the business and the political world, but exists in the academic world as well. As in the political (and less in the business) world, it is not only money that matters, but also reputation. But money counts, too: as the example of the *Journal of Industrial Economics* shows, like politicians, scientists sometimes risk their reputation for comparatively small amounts of money.⁴⁷⁾

[34] This is in stark contrast to the picture many scientists have of themselves as nearly ideal human beings who are devoted solely to the search for truth. This perception also holds for many economists,⁴⁸⁾ and even for Public Choice Economists who assume that not only economic but also political agents pursue solely their own interest. Thus, all human beings are assumed to behave as the economic model of behaviour describes, except for academic economists: they form a class of their own.

[35] This perception is, of course, incompatible with their own theoretical approach. If the economic model of behaviour is a suitable instrument to analyse the behaviour of individuals, it is not restricted to economic and political agents, but can also be applied to the behaviour of scientific agents. In this respect, scientists, including economists, are not different from other human beings. And, of course, hardly anybody apart from them believes in this ideal romantic picture.

[36] At least as long as science is done seriously, the main ‘currency’ is reputation. To gain reputation, some authors manipulate data. Perhaps the most prominent case in recent years was the physicist HENDRIK SCHÖN who, while working at Bell Laboratories from 1998 to 2002, published (at least) 16 papers with fraudulent data.⁴⁹⁾ Others bluntly plagiarise, like the German economist HANS-WERNER GOTTINGER.⁵⁰⁾ These two cases raise a question similar to the one asked above about politicians: given the fact that such fraud can easily be detected, why do they take such an enormous risk?

[37] As mentioned above, along with reputation, money also matters, even for scientists. This is obvious in the cases in which the tobacco industry, by paying scientists, first tried to deny that active and second that passive smoking damages health. The most prominent case in Switzerland was RAGNAR RYLANDER, a professor at the Universities of Gothenburg and Geneva, who was paid by Philip Morris for about 30 years. As a seemingly independent scientist, he organised workshops and published studies in order to question the negative effects of passive smoking. He ‘modified’ data of a study about illnesses of the respiratory system in children in order to camouflage the connection with passive smoking. It was also recorded

47. On this, see T. V. UNGERN-STERMBERG (1995).

48. For an extreme example, see H. HESSE (1994, p. 18).

49. See E.J. LERNER (2002/03). – More recently, there was a similar case at the Swiss federal Institute of Technology in Zurich. It was impossible, however, to determine with certainty who was responsible for this fraud. See: Bericht über Forschungsbetrug, *Neue Zürcher Zeitung* No. 40 in February 2010, p. 13.

50. See A. ABBOT et al. (2007).

that he was not shy about deceiving the general public in the interest of his hidden financier.⁵¹⁾

[38] The ‘buying’ of RAGNAR RYLANDER by the tobacco industry was in some respects exceptional, but only one of many attempts of the industry to influence the results of biomedical studies or at least their perception by the general public.⁵²⁾ As some incidents in the last decade show, the United States finance industry tried to influence prominent economists to get support for its demand for deregulations (or the prevention of additional regulations) of financial markets.⁵³⁾

[39] Unlike the case of RAGNAR RYLANDER discussed above, the cases of prominent economists listed in C.H. FERGUSON (2012, p. 245) do not imply that they were necessarily corrupt, and definitely not in a legal sense, even if in some cases it is difficult not to speak of ‘light’ corruption. When propagating or defending deregulatory measures in their scientific papers, they might have presented their true convictions. The U.S. finance industry might have selected for subsidy precisely those economists who already held positions favourable to the interest of this industry already before they were actually paid. The problem is that, when publishing their scientific papers on finance topics after having been subsidised, they did not reveal their connections to this industry; this allows at least serious doubts about their independence. It can at least not be excluded that, due to the effect of selective perception, the money they received from the finance industry desensitised them to the problems of this industry that led to the financial crisis a few years later. This ‘money-seeking’ behaviour nevertheless impaired their reputation.

5 Summary and Concluding Remarks

[40] The financial and economic crisis of recent years caused a debate not only about deficiencies in parts of Economics as, in particular, Macroeconomics or Financial Economics, but also about the validity of the economic approach to behaviour. Some authors referred to Behavioural Economics and the experimental results that are partly in contrast to traditional economic models. It has therefore been claimed that in many cases these models are not appropriate for two reasons: (i) individuals are not as rational as usually assumed; and (ii) individuals are more other-regarding and less self-regarding than usually assumed. The latter statement is mainly based on the results of dictator, ultimatum, and public good games.

[41] The problem, however, is that the financial crisis was definitely not caused because economic and political agents, in particular bankers, were not self-regarding, but other-

51. On this, see Forscher im Solde von Philip Morris, *Neue Zürcher Zeitung* No. 122 of 28 May 2003, p. 16. For an evaluation of this case by the University of Geneva, see UNIVERSITY OF GENEVA (2004); on the efforts of the tobacco industry to influence political decisions in Switzerland, see for example C.-Y. LEE and S.A. GLANTZ (2001) or S. MALKA and M. GREGORI (2008).

52. For further examples, see S. KRIMSKY (2003) or M. FRIEDBERG et al. (1999).

53. On this, see C.H. FERGUSON (2012, pp. 340ff.).

regarding. On the contrary, it is often claimed that that it was their greed that created the problems, their greed for additional income (money). Thus, while we have learned not only from experiments but also from field research that in some situations money might not be as powerful a motivational force as our economic models usually assume, agents responsible for the financial crisis might have been even more money-oriented. In our models, money creates utility only by enabling the consumption of goods and services, i.e., the utility of money is only a derivative one. However, for at least some individuals, money seems to have a value in itself.

[42] Although it might have a severe impact on at least some relevant economic decisions, greed has hardly been discussed in the economics literature. This holds, for example, also for the literature on corruption. But if we do not assume that individuals have extremely high discount rates and/or a totally disturbed perception of reality, corruption can hardly be explained by employing the usual assumption about economic agents.

[43] There are, however, some approaches that take greed and/or the seeking of money more seriously. Perhaps the most important one is the positional goods approach going back to F. HIRSCH (1977). To the degree that money is (mainly) a positional good, consumption possibilities play at best a subordinated role; it is pure money that counts. This, for example, seems to be the most plausible explanation for the explosion of top management incomes in the last twenty years.

[44] Corruption and ‘money-seeking’, however, are not restricted to the economic and political world; it is to be found in the academic world as well. Of course, there it is not only money that counts: the most important ‘currency’ is reputation. But money counts as well, as the behaviour of some economists in the forefront of the financial crisis has shown; even leading economists risked their reputation as independent scientists by accepting considerable amounts of money from the financial industry and, at the same time, writing scientific papers that supported the interest of this industry.

[45] Even if a lot of the work in Behavioural Economics points to the direction of more other-regarding and less self-regarding behaviour than traditional Economics assumes, there is also work that might help to explain greedy behaviour and/or why individuals give more weight to money and are more self-regarding than we usually assume. Loss aversion, for example, might seduce individuals to tread illegal paths to compensate for losses of official (legal) income, and it can also induce people to take enormous risks.

[46] There is not only inequity, but also equity-aversion. Neuroeconomic analyses might explain why money has a value in itself and is not only a means for consumption and why emotions might play a greater role in the behaviour of traders than we usually concede in economic analyses.

[47] Behavioural Economics and Neuroeconomics stressed mainly ‘positive’ deviations from the assumption of self-interest. Thus, it is probably an illusion to believe that more intense recognition of its results would have prevented the financial and economic crisis. But these more recent fields of economic analysis nevertheless provide us at least some means to under-

stand why the crisis could happen, and they therefore provide an additional explanation that traditional Economics does not. The important lesson from this, however, is that not only ‘positive’ but also ‘negative’ deviations from the assumption of self-interest should be seriously taken into account. The assumption of mutually disinterested rationality is a very powerful instrument for analysing individual behaviour, and it can sometimes even be applied counterfactually very successfully, but to explain some important phenomena we not only have to recognise that people are sometimes more other-regarding, but also that they are sometimes greedy and value money much more than traditional economic theory supposes.

References

- ABBOTT, A., D. CYRANOSKI, E. FERESIN and C. LENOTTI (2007), Academic Accused of Living on Borrowed Lines, *Nature* 448, Issue 7154, pp. 632 – 633.
- ANDREONI, J. (1988), Privately Produced Public Goods in a Large Economy: The Limits of Altruism, *Journal of Public Economics* 35, pp. 57 – 73.
- ANDREONI, J. (1990), Impure Altruism and Donations to Public Goods: A Theory of Warm Glow Giving, *Economic Journal* 100, pp. 464 – 477.
- AKERLOF, G.A., and W.T. DICKENS (1982), The Economic Consequences of Cognitive Dissonance, *American Economic Review* 72, pp. 307 – 319.
- ALCHIAN, A.A. (1950), Uncertainty, Evolution, and Economic Theory, *Journal of Political Economy* 58, pp. 211 – 221.
- ALESINA, A., and H. ROSENTHAL (1995), *Partisan Politics, Divided Government, and the Economy*, Cambridge University Press, Cambridge.
- BARDSLEY, N. (2008), Dictator Game Giving: Altruism or Artefact?, *Experimental Economics* 11, pp. 122 – 133.
- BECKER, G.S., and K.M. MURPHY (1988), A Theory of Rational Addiction, *Journal of Political Economy* 96, pp. 675 – 700.
- BERDAL, M. (2005), Beyond Greed and Grievance – and not too soon, *Review of International Studies* 31, pp. 687 – 698.
- BERDAL, M., and D. MALONE (2000), *Greed and Grievance: Economic Agendas in Civil Wars*, Lynne Rienner, Boulder CO.
- BERNHOLZ, P. (1974), Is a Paretian Liberal Really Impossible?, *Public Choice* 20, pp. 99 – 108.
- BOLTON, G.E., and A. OCKENFELS (2000), ERC: A Theory of Equity, Reciprocity, and Competition, *American Economic Review* 90, pp. 166 – 193.
- BOWLES, S., and H. GINTIS (2009), Beyond Enlightened Self-Interest: Social Norms, Other-Regarding Preferences, and Cooperative Behavior, in: S.A. LEVIN (ed.), *Games, Groups, and the Global Good*, Springer, Berlin Heidelberg, pp. 57 – 78.
- BRENNAN, G., and J.M. BUCHANAN (1981), The Normative Purpose of Economic Science: Rediscovery of an Eighteenth Century Method, *International Review of Law and Economics* 1, pp. 155 – 166.
- BRENNAN, G., and J.M. BUCHANAN (1983), Predictive Power and the Choice Among Regimes, *Economic Journal* 93, pp. 89 – 105.

- BROMBERG, T., T. ELLINGSEN and M. JOHANNESSON (2006), Is Generosity Involuntary?, *Economics Letters* 94, pp. 32 – 37.
- CAMERER, C.F., G. LOEWENSTEIN and D. PRELEC (2005), Neuroeconomics: How Neuroscience Can Inform Economics, *Journal of Economic Literature* 43, pp. 9 – 64.
- CHERRY, T.L., P. FRYKBLOM and J.S. SHOGREN (2002), Hardnose the Dictator, *American Economic Review* 92, pp. 1218 – 1221.
- CHILDS, J.M. (2000), *Greed: Economics and Ethics in Conflict*, Fortress Press, Minneapolis.
- CLEMENTS, M.T. (2013), Self-Interest vs. Greed and the Limitations of the Invisible Hand, *American Journal of Economics and Sociology* 72, pp. 949 – 965.
- COLANDER, D., et al. (2009), The Financial Crisis and the Systemic Failure of the Economics Profession, *Critical Review* 21, pp. 240 – 267.
- CRAWSHAW, R. (1996), Greed, *British Medical Journal* (BMJ) 313, pp. 1596f.
- DEATON, A.S. (1987), Consumers' Expenditure, in: *The New Palgrave: A Dictionary of Economics*, vol. 1, Macmillan, London, pp. 592 – 607.
- DUESENBERY, J. (1949), *Income, Saving and the Theory of Consumer Behavior*, Cambridge (Mass.), Harvard University Press.
- EDGORTH, F.Y. (1881), *Mathematical Psychics, An Essay on the Application of Mathematics to the Moral Sciences*, Kegan Paul, London.
- FEHR, E., and K.M. SCHMIDT (1999), A Theory of Fairness, Competition, and Cooperation, *Quarterly Journal of Economics* 114, pp. 817 – 868.
- FERGUSON, C.H. (2012), *Predator Nation: Corporate Criminals, Political Corruption, and the Hijacking of America*, Crown Business, New York.
- FERSTMAN, C., U. GNEEZY and J.A. LIST (2012), Equity Aversion: Social Norms and the Desire to be Ahead, *American Economic Journal: Microeconomics* 4(4), pp. 131 – 144.
- FESTINGER, L. (1957), *A Theory of Cognitive Dissonance*, Stanford.
- FRANK, R.H. (2005), Positional Externalities Cause Large and Preventable Welfare Losses, *American Economic Review, Papers and Proceedings* 95.2, pp. 137 – 141.
- FRANK, R.H., and P.J. COOK (1995), *The Winner-Take-All Society*, Free Press, New York et al.
- FREY, B.S. (1997), *Not Just for the Money: An Economic Theory of Personal Motivation*, Edward Elgar, Cheltenham (UK).
- FRIJTERS, P., and G. FOSTER (2013), *Economic Theory of Greed, Love, Groups and Networks*, Cambridge University Press, New York et al.
- FRIEDBERG, M., B. SAFFRAN, T.J. STINSON, W. NELSON and C.L. BENNET (1999), Evaluation of Conflict of Interest in Economic Analyses of New Drugs Used in Oncology, *Journal of the American Medical Association* (JAMA) 282, pp. 1453 – 1457.
- FRIEDMAN, M. (1953), The Methodology of Positive Economics, in: M. FRIEDMAN, *Essays in Positive Economics*, University of Chicago Press, Chicago, pp. 3 – 43.
- GINTIS, H. (2010), Beyond Homo Economicus: Evidence from Experimental Economics, *Ecological Economics* 35, pp. 311 – 322.
- GOSSEN, H.H. (1854), *Entwicklung der Gesetze des menschlichen Verkehrs, und der daraus fließenden Regeln für menschliches Handeln*, Vieweg und Sohn, Braunschweig.
- GÜTH, W., R. SCHMITTBERGER and B. SCHWARZE (1986), An Experimental Analysis of Ultimatum Bargaining, *Journal of Economic Behavior and Organization* 3 (1982), pp. 367 – 388.

- HARROD, R. (1958), The Possibility of Economic Satiation: Use of Economic Growth for Improving the Quality of Life, in: Committee for Economic Development (ed.), *Problems of Economic Development*, New York.
- HESSE, H. (1994), Als Wissenschaftler in der Politik?, in: UNIVERSITÄT HANNOVER (ed.), *Vorträge im Fachbereich Wirtschaftswissenschaften*, vol. 20, Hannover, pp. 17 – 37.
- HIRSCH, F. (1976), *The Social Limits to Growth*, London, Routledge and Kegan Paul.
- HORTON, T.J. (2011), The Coming Extinction of *Homo Economicus* and the Eclipse of the Chicago School of Antitrust: Applying Evolutionary Biology to Structural and Behavioral Antitrust Analyses, *Loyola University Chicago Law Journal* 42, pp. 469 – 522.
- HUME, D. (1741), On the Independency of Parliament, reprinted in: D. HUME, *Essays: Moral, Political, and Literary*, A. Kincaid/A. Donaldson, Edinburgh 1758, pp. 117 – 122.
- ISAAC, R. M., and J.M. WALKER (1988), Communication and Free-Riding Behavior: The Voluntary Contribution Mechanism, *Economic Inquiry* 26, pp. 585 – 608.
- ISAAC, R. M., and J.M. WALKER (1988a), Group Size Effects in Public Goods Provision: The Voluntary Contributions Mechanism, *Quarterly Journal of Economics* 103, pp. 179 – 199.
- JIN, H., and X.Y. ZHOU (2013), Greed, Leverage, and Potential Losses: A Prospect Theory Perspective, *Mathematical Finance* 23, pp. 122 – 142.
- KAHNEMAN, D., and A. TVERSKY (1979), Prospect Theory: An Analysis of Decision under Risk, *Econometrica* 47 (1979), pp. 263 – 291.
- KAHNEMAN, D., J.L. KNETSCH and R.H. THALER (1986), Fairness and the Assumptions of Economics, *Journal of Business* 59 (1986), pp. S285 – S300.
- KAUFMANN, D., and P.C. VINCENTE (2011), Legal Corruption, *Economics and Politics* 23 (2011), pp. 195 – 219.
- KAY, J. (2009), The Rationale of the Market Economy: A European Perspective, *Capitalism and Society* 4(3), Article 1; <http://capitalism.columbia.edu/files/ccs/John%20Kay.pdf> (17 June 14)
- KIRCHGÄSSNER, G. (1990), Hebt ein ‚knapper‘ Wahlausgang die Wahlbeteiligung?, Eine Überprüfung der ökonomischen Theorie der Wahlbeteiligung anhand der Bundestagswahl 1987, in: M. KAASE and H.-D. KLINGEMANN (eds.), *Wahlen und Wähler, Analysen aus Anlass der Bundestagswahl 1987*, Westdeutscher Verlag, Opladen, pp. 445 – 477.
- KIRCHGÄSSNER, G. (2002), On the Role of Heroes in Political and Economic Processes, *Kyklos* 55, pp. 179 – 196.
- KIRCHGÄSSNER, G. (2005), (Why) Are Economists Different?, *European Journal of Political Economy* 21, pp. 543 – 562.
- KIRCHGÄSSNER, G. (2008), *Homo Oeconomicus: The Economic Model of Behaviour and Its Applications to Economics and Other Social Sciences*, Springer, New York.
- KIRCHGÄSSNER, G. (2010), On Minimal Morals, *European Journal of Political Economy* 26, pp. 330 – 339.
- KIRCHGÄSSNER, G. (2013), The Weak Rationality Principle in Economics, *Swiss Journal of Economics and Statistics (Schweizerische Zeitschrift für Volkswirtschaft und Statistik)* 149, pp. 1 – 26.
- KIRCHGÄSSNER, G. (2014), The Role of Homo Oeconomicus in the Political Economy of James Buchanan, *Constitutional Political Economy* 25, pp. 2 – 17.
- KIRMAN, A. (2010), The Economic Crisis is a Crisis for Economic Theory, *CESifo Economic Studies* 56, pp. 498 – 535.
- KOTHARI, V.B. (2010), *Executive Greed: Examining Business Failures the Contributed to the Economic Crisis*, Palgrave MacMillan, New York.

- KRAUS, M.W., P.K. PIFF, R. MENDOZA-DENTON, M.L. RHEINSCHMIDT and D. KELTNER (2012), *Psychological Review* 119, pp. 546 – 572.
- KRIMSKY, S. (2003), *Science in the Private Interest: Has the Lure of Profits Corrupted Biomedical Research?*, Rowman and Littlefield, Lanham et al.
- LAWSON, T. (2009), the Current Economic Crisis: Its Nature and the Course of Academic Economics, *Cambridge Journal of Economics* 33, pp. 759 – 777.
- LEE, C.-Y., and S.A. GLANTZ (2001), *The Tobacco Industry's Successful Efforts to Control Tobacco Policy Making in Switzerland*, University of California, School of Medicine, January; <http://www.who.int/tobacco/media/en/InquirySwiss.pdf> (17 June 14).
- LERMAN, L.G. (2005). Greed Among American Lawyers, *Oklahoma City University Law Review* 30, pp. 611 – 636.
- LERNER, E.J. (2002/02), Fraud Shows Peer-Review Flaws, *The Industrial Physicist*, December/January, pp. 12 – 15.
- LEVIN, D.P. (2000), The Attachment of Greed to Self-Interest, *Psychoanalytic Studies* 2, pp. 131 – 140.
- LI, C.A., and J.C. WANG (2013), The Influence of Greed and Fear on Funds Performance, *International Journal of Business and Finance Research* 7, pp. 47 – 59.
- LIST, J.A. (2007), On the Interpretation of Giving in Dictator Games, *Journal of Political Economy* 115 (2007), pp. 482 – 493.
- LOOMES, G., and R. SUDGEN (1982), Some Implications of a More General Form of Regret Theory, *Journal of Economic Theory* 41, pp. 270 – 287.
- MALKA, S., and M. GREGORI, *Vernebelung: Wie die Tabakindustrie Wissenschaft kauft*, Orell Füssli, Zürich.
- MASON, P. (2009), *Meltdown: The End of the Age of Greed*, Verso, London/New York.
- MATZUNDER, M.I. and N. AHMAD (2010), Greed, Financial Innovation or Laxity of Regulation, *Studies in Economics and Finance* 27, pp. 110 – 134.
- MCDONALD, I.M. (2009), The Global Financial Crisis and Behavioural Economics, *Economic Papers* 28, pp. 149 – 154.
- MONRO, D.H. (1987), Self-Interest, in: *The New Palgrave, A Dictionary of Economics*, vol. 4, Macmillan, London, pp. 297 – 300.
- MURSHED, S.M., and M.Z. TADJOEDDIN (2009), Revisiting the Greed and Grievance Explanation for Violent Internal Conflict, *Journal of International Development* 21, pp. 87 – 111.
- O'BOYLE, E.J. (2007), Requiem for *Homo Economicus*, *Journal of Markets and Morality* 10 (2007), pp. 321 – 337.
- OPP, K.D. (1970), *Methodologie der Sozialwissenschaften*, Einführung in Probleme ihrer Theoriebildung, Rowohlt, Hamburg.
- OPP, K.D. (1985), Sociology and Economic Man, *Journal of Institutional and Theoretical Economics (Zeitschrift für die gesamte Staatswissenschaft)* 141, pp. 213 – 243.
- PIFF, P.K., M.W. KRAUS, S. CÔTE, B.H. CHENG and D. KELTNER (2010), Having Less, Giving More: The Influence of Social Class on Prosocial Behavior, *Journal of Personality and Social Psychology* 99, pp. 771 – 784.
- PIFF, P.K., D.M. STANCATO, S. CÔTE, R. MENDOZA-DENTON and D. KELTNER (2012), Higher Social Class Predicts Increased Unethical Behavior, *Proceedings of the National Academy of Sciences* 109, pp. 4086 – 4091.

- PLATT, H.D., C.R. MIRICK and M.B. PLATT (2011), Ethics, Bankruptcy and Greed: The Unintended Consequences for Landlords of the 2005 Bankruptcy Amendments, *International Journal of Business Governance and Ethics* 6, pp. 249 – 263.
- RAWLS, J. (1971), *A Theory of Justice*, Harvard University Press, Cambridge (Mass.).
- ROSE-ACKERMAN, S. (1975), The Economics of Corruption, *Journal of Public Economics* 4, pp. 187 – 203.
- ROTHSCHILD, K.W. (1992), *Ethik und Wirtschaftstheorie*, Mohr (Siebeck), Tübingen.
- SCHELLING, T.C. (1978), *Micromotives and Macrobehavior*, W.W. Norton, New York/London 1978.
- SCHOEMAKER P.J.H. (1982), The Expected Utility Modell: Its Variants, Purposes, Evidence and Limitations, *Journal of Economic Literature* 20, pp. 529 – 563.
- SCHÜSSLER, R. (1990), *Kooperation unter Egoisten: Vier Dilemmata*, Oldenburg, Munich, 2nd edition 1997.
- SIMON, H.A. (1955), A Behavioural Model of Rational Choice, *Quarterly Journal of Economics* 69, pp. 99–118.
- SIMON, H.A. (1978), Rationality as Process and as Product of Thought, *American Economic Review, Papers and Proceedings*, 68.2, pp. 1–16.
- SMITH, A. (1759), *The Theory of Moral Sentiments*, Millar, London; cited from: MetaLibri Digital Library, May 2007
http://www.ibiblio.org/ml/libri/s/SmithA_MoralSentiments_p.pdf (17 June 14).
- SMITH, A. (1776), *An Inquiry into the Nature and Causes of the Wealth of Nations*, W. Strahan and T. Cadell, London; cited from: MetaLibri Digital Library, May 2006
http://www.ibiblio.org/ml/libri/s/SmithA_WealthNations_p.pdf (17 June 14).
- TITTENBRUNN, J. (2013), The Death of Economic Man, *International Letters of Social and Humanistic Sciences* 11, pp. 10 – 34.
- TRANSPARENCY INTERNATIONAL (2013), *Corruptions Perceptions Index 2013*,
<http://www.transparency.org/cpi2013/results> (17 June 14).
- TRAUTMANN, S.T., G. VAN DE JUILEN and R.J. ZECKHAUSER (2013), Social Class and (Un)Ethical Behavior: A Framework, With Evidence From a Large Population Sample, *Perspectives on Psychological Science* 8, pp. 497 – 497.
- UNGERN-STERMBERG, T. V. (1995), Running Down Non-Profit Organizations: The Case of the Journal of Industrial Economics, Cahiers de recherches économiques No 9510, Département d'économétrie et économie politique, Université de Lausanne, September.
- UNIVERSITY OF GENEVA (2004), *Ermittlungsbericht im Fall Prof. Ragnar Rylander*, Geneva, September 6; <http://www.prevention.ch/rapportd.pdf> (18. Dec. 12)
- VERBURG, R. (2012), The Rise of Greed in Early Economic Thought: From Deadly Sin to Social Benefit, *Journal of the History of Economic Thought* 34, pp. 515 – 540.
- WANG, L., D. MALHOTRA and J.K. MURNIGHAN (2011), Economics Education and Greed, *Academy of Management Learning and Education* 10, pp. 643 – 680.
- WICKSTEED, P.H. (1910), *The Common Sense of Political Economy: Including a Study of the Human Basis of Economic Law*, Macmillan, London, 2nd edition 1933.
- WILLET, T. (2010), Some Lessons for Economists from the Financial Crisis, *Indian Growth and Development Review* 3, pp. 186 – 208.
- WILLIAMSON, O.E. (1975), *Markets and Hierarchies*, Free Press, New York.
- ZINTL, R. (1986), Ökonomisches Rationalitätskonzept und normorientiertes Verhalten, *Jahrbuch für Neue Politische Ökonomie* 5 (1986), pp. 227 – 239.