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THERE'S LIFE IN THE OLD DOG YET: THE HOMO OECONOMICUS MODEL AND ITS VALUE FOR THE STUDY OF MORALITY

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Abstract

The *Homo Oeconomicus* is a widely used model (HOM) in the social sciences in general and in business ethics in particular. Despite its success, the model is frequently criticized for being empirically flawed, and normatively dangerous. Mostly on the grounds of empirical “falsifications,” it has been argued that the model should be abandoned and replaced by more realistic models of human behavior. Against this criticism, this paper develops a precise methodological conception of the HOM that is able to integrate seemingly contradictory empirical evidence. We will defend the view that the *Homo Oeconomicus* is not a model of human nature but a pre-empirical, untestable heuristic. The basic function of the HOM is to allow the researcher’s attention to focus on the specification of situations which, together with the HOM assumptions, form the basis of explanations and predictions of human behavior. Using this methodology, we will show how recent findings in behavioral economics can be integrated to refine HOM without ever rendering it obsolete. Finally, we will discuss our conception’s normative implications for the domain of business ethics.

Keywords: business ethics, behavioral economics, cooperation, dilemma structure, homo oeconomicus, methodology.

1. Introduction

Homo Oeconomicus is a widely used model in the social sciences in general and in business ethics in particular. In academic fields as diverse as economics, politics, and sociology analyses have been based on this very simple model, assuming that decision-makers act as if they were purely rational and cared about their self-interest only (Kirchgässner 2008; Vanberg 2002). In its basic form, the model has also been used for the study of morality even though morality implies the consideration of others, not merely oneself (Donaldson/ Dunfee 1999; Gauthier 1986; Pies et al. 2009; Schreck et al. 2013).

Despite its prominence in the social sciences, the validity and usefulness of the *Homo Oeconomicus* model have been challenged on both, normative and empirical grounds. Normative charges against the model have their roots in a long tradition of Western philosophy including Plato, Aristotle, and some of the most prominent 19th century philosophers who took a critical perspective on economic activities and profits *per se*. Martin Luther's "On Trade and Usury" (1524) provides an example of this tradition. Luther explicitly motivates his writing with the need to stand against the disreputable merchants that make too much profit. He refers to the psalm 37:16: "Better is the little that the righteous hath than the great possessions of the godless." One of the most influential approaches to ethics – that of Immanuel Kant – also belongs to this tradition. Strictly separating prudence from morality, it denies the moral quality of a merely prudent act.¹

More recent forms of normative criticism refer to the use of the *Homo Oeconomicus* model in the social sciences, notably in business and economics (Anderson 2000; Hirschman 1985; Sen 1977). Some scholars have claimed that business schools are responsible for the business elite's irresponsible behavior by "propagating ideologically inspired amoral theories" (Ghoshal 2005:76) to their (MBA) students. If students are, the argument goes, sufficiently exposed to

¹ Kant famously illustrates his position with an example from business: if a merchant charges a fair price to everybody although he could easily cheat, there is no moral worth in this honesty if the merchant only acts honestly out of worries for his reputation (Kant 1785/ 2013: 487). Another prominent critic of economic acts is Karl Marx who, for systemic reasons, denies the possibility of morality, solidarity, and humanity in capitalist market systems (Marx 1844/ 2007). For a treatment of egoist motives in Marxism, see Churchich (1994:145-169).

the “entirely inhuman *Homo Oeconomicus*” (Hühn 2014: 537), they themselves will begin behaving as selfishly and opportunistically as the model assumes.²

The *Homo Oeconomicus* model has also been challenged on empirical grounds. The findings of experimental research in various disciplines have been used to argue that the model is empirically flawed. As experimental evidence, notably in the domain of behavioral economics suggests, human beings simply do not behave as the model’s assumptions seem to imply. In particular, observation contradicts the assumptions of rational, self-centered utility maximization, information processing, and consistency of choices (e.g., Gintis et al. 2005). In light of such “anomalies” (Loewenstein/ Thaler 1989) and “falsifications” (Henrich et al. 2004), critics cast doubt on the usefulness of this model (e.g., Klüber et al. 2014). In summary, the *Homo Oeconomicus* model is criticized for being empirically flawed, and normatively dangerous; it should thus be abandoned and replaced by more realistic models of human behavior (Laville 2000).

In our analysis, we will focus on the empirical charges against *Homo Oeconomicus*. Although we do not challenge the empirical results that give rise to such criticism, we believe it is misconceived to interpret them as a falsification of the *Homo Oeconomicus* model. We will thus use this criticism as an opportunity to critically evaluate the usefulness of the *Homo Oeconomicus* model in the social sciences, and in particular for the study of morality. To this aim, we will develop and defend a precise methodological conception of the *Homo Oeconomicus* model. Recurring on a three-steps model of scientific explanation, we will argue that any explanatory theory contains invariant and variant elements which, taken together, allow for rigorous explanations of social phenomena. We will defend the thesis that the invariant elements cannot be ‘true’ or ‘false’ as they represent untestable methodological stipulations. Lying at the heart of an economic approach to human behavior, the *Homo Oeconomicus* model is such an untestable element. The main reason for using this model is not that it is empirical valid, but that it is appropriate with respect to a specific epistemological problem.

As we will demonstrate, a central epistemological problem in ethics is human cooperation. That is, ethics seeks to offer a robust explanation for why and under which conditions humans (fail to) cooperate to their mutual advantage. We will first analyze why humans may fail to

² Such an “indoctrination effect” has also been made responsible for the observation that in laboratory experiments, economics students tend to behave less cooperatively than students of other social sciences (Bauman/ Rose 2011; Frank et al. 1993; Ostrom 1998).

cooperate. This failure will be attributed to social dilemma structures, i.e., situations in which interacting partners have common and conflicting interests simultaneously. The assumption of social dilemma structures as the basic form of human interaction will then legitimize the use of the *Homo Oeconomicus* model: it is the adequate heuristic to model human behavior in social dilemma structures. Hence, the assumption of *Homo Oeconomicus* is not a model of human nature but a tool to explain and predict outcomes in social dilemma structures. Once we have explained non-cooperation, we turn to explaining the emergence of morality, that is, we will treat morality as the *explanandum*. We will interpret morality as an evolutionary product that allows humans to cooperate successfully. From this perspective, we will argue that the findings from experimental economics should not be interpreted as falsifications of the HOM. Rather, they specify the conditions under which certain forms of morality are able to emerge and persist.

To develop these arguments, this article will proceed as follows. We use the next section to clarify the epistemological foundations of our analysis. In particular, we will draw on Popper's concept of the 'logic of the situation' and its role for explanatory theories in the social sciences. These clarifications will help us specify the methodological status of the *Homo Oeconomicus* model in section 3. Next, section 4 will offer a justification for why the *Homo Oeconomicus* is an adequate heuristic for the study of morality. Our main argument will be that it is the adequate analytical tool to model a-moral behavior in competitive markets or, more generally, in social dilemma structures. Section 5 will then demonstrate how the *Homo Oeconomicus* – despite its denial of an *a priori* morality – can be used to explain and predict the emergence of cooperation. In particular, our analysis will integrate some important results of experimental economics, although our interpretation of these results will differ from conventional interpretations. Finally, section 6 provides an outlook on the normative implications of our descriptive approach.

2. Principles and Falsification in the Social Sciences

2.1. The Model's Assumptions and Empirical Evidence

The *Homo Oeconomicus* model (HOM), also called the *rational choice theory* or the *economic model of man*, continues to be one of the methodological cornerstones in economics (Sugden 1991; Vanberg 2004). Two assumptions lie at the center of this decision-making model: rational maximization and self-interest. In a nutshell, these assumptions imply that when decision makers have multiple options, they choose the alternative that maximizes their own utility.

Rational choice theory has been used in a wide range of social sciences. Most importantly for our purposes, the rational choice approach has been used for the study of morality in general (Gauthier 1986; Greene 2013; Hosmer/ Chen 2001), and in business ethics in particular (Donaldson/ Dunfee 1999; McWilliams/ Siegel 2001; Pies et al. 2009; Schreck et al. 2013).

The success of the model would certainly not have been possible without the groundbreaking work of economist and Noble Prize laureate Gary Becker. Becker (1976, 1993) proposed an understanding of economics as a general analytical approach to human behavior. In his view, economics *as a method of analysis* is not restricted to the economy, but can be applied to a wide range of social phenomena, including marriage, reproductive behavior, or drug consumption. This extension of the phenomenological domain of economics to an unlimited range of topics has been dubbed “economic imperialism.” In effect, rational choice has been used anywhere from economics to sociology, psychology, law, and the study of ethics (Kirchgässner 2008).

The model’s success is somewhat surprising, given that it is plainly unrealistic. As one could tell even without knowing the results of the modern behavioral sciences, HOM offers a very poor account of what human beings *actually are*. To see this, consider the model’s core assumptions, rationality and self-interest. As daily observation shows, human beings of flesh and blood typically do not act rationally in a strict sense: they do not know all decision alternatives, they are not capable of comparing and evaluating all alternatives’ consequences in an infinitely short amount of time, and they often fail to identify the alternative that maximizes profits, utility, or anything else. The works of influential scholars such as Herbert Simon (1957), Loewenstein/ Thaler (1989), or Kahneman/ Tversky (1979) added scientific proof to these observations and offered alternative, more realistic models of human behavior.

Similarly, the assumption of strict self-interest contradicts our daily experience. We donate money to alleviate the circumstances of people we do not even know. We refrain from lying as much as we could in our tax statements; and we do not betray each other each time we could benefit from such betrayal without being punished. Hundreds of experiments in the fields of experimental economics and behavioral business ethics provide scientific evidence that, by and large, many if not most of us *do* follow social norms to a certain extent, although this behavior does not pay off in monetary terms.

On these grounds it has been argued that the HOM is empirically flawed and should thus be abandoned (Laville 2000; Lindenberg 1990; Meckling 1976). And for those who believe in scientific progress through falsification, isn’t it all too obvious that a lack of empirical support

for a theory is a reason to reject it (Popper 1959/ 2005)? Interestingly, it is exactly Karl Popper who provides the arguments that can be used to justify the *Homo Oeconomicus* model's validity despite its seemingly empirical flaws.

2.2. Explanation and Falsification in the Social Sciences

Popper's methodology includes one element that may not be as prominent as his advocacy of falsification, but that is of particular interest for this paper's purposes. In applying his epistemic methodology to the social sciences, Popper repeatedly mentions this element and explicitly relates it to the rationality principle, one of the cornerstones of the *Homo Oeconomicus* model. This element is the "logic of the situation" (as already mentioned in Popper 1945/ 2011: 308, 324).

According to Popper (1963/ 1985, 1964/ 1994), explanations in the social sciences include two classes of elements: (1) The analysis of the social situation as an agent sees it when acting; and (2) the agent's reaction to this situation which is assumed to be rational in the sense of "adequate" or "appropriate." The *rationality principle* is thus central to the analysis. And it is important to note how Popper, the falsificationist he was, characterized this principle: It is "almost empty" and it's a "methodological postulate" (Popper 1964/ 1994: 169) rather than a psychological proposition; it is "certainly false" (p. 172) in the sense that it is not "universally true," and thus "does not play the role of [...] a testable hypothesis" (p. 169).

Empirical situations, in contrast, can be approximated by means of "models." Alternative situational models try to capture empirical conditions and thus form the basis for hypothesized behavioral reactions. These models can be "empirically more or less adequate" (p. 169) and are hence testable. When falsified, they should be amended and improved.

An explanatory theory in the social sciences thus contains two different classes of elements: the non-testable principle of rationality; and empirical models of the situation. Taken together, both classes of elements form a theory that allows for the explanation and prediction of observed behavior. Now if a theory ought to be tested, and empirical evidence contradicts the theory's predictions, the researcher has to decide which part of the theory to hold responsible for its predictive failure. Here, Popper (1967/ 2000: 355) defends a methodological strategy according to which it is exactly not the principle of rationality that should be questioned in response to contradicting empirical evidence, but "the rest of the theory – that is, the model." (Popper 1964/ 1994: 177). The reason for this methodological strategy of the social sciences is that it gives "rise to better testable explanatory hypotheses – that is, conjectural situational models – than

other methods” (Popper 1964/ 1994: 171). That’s because the situational models are much more interesting and informative about the social world than the rationality principle is. There is not much to learn when we learn that the rationality assumption is “wrong” – we knew this before. But when observed behavior is interpreted as a rational response to a specific “situation,” the researcher’s attention is drawn to the situation as the explanatory element for observed behavior. Through adjusting our situational models to empirical observation, we come closer to the development of workable models of the logic of the situation and thus improve the theory’s predictive quality. The methodological strategy is captured in the following proposition:³

Proposition 1: Certain elements in explanatory theories – a theory’s *principles* – are not objectively true or false. Rather, they represent a methodological stipulation. As such, they constitute invariant and untestable elements of a theory.

We are now ready to apply the previous section’s results to our key problem: the methodological status of the *Homo Oeconomicus* model in the social sciences.

3. The Methodological Status of the *Homo Oeconomicus* Model

Borrowing from Popper’s conception of explanations in the social sciences, we defended the view that the choice of a theory’s principles is a (normative) methodological stipulation, rather than an empirical statement, and thus cannot be falsified. Applied to the case of this paper, the HOM and its core assumptions represent *principles* of the rational choice paradigm. Accordingly, the core behavioral assumptions of HOM should not be seen as empirical propositions; they are *pre-empirical* in the sense that they are not a statement on social reality *per se*, but they provide guidance on how to look at reality.

The interpretation of the HOM as a non-empirical principle has a long tradition in economics (e.g., Mill 1836, Keynes, 1917: 115, Pareto 1971/ 1907). Two prominent advocates of such a methodology are Milton Friedman and Gary Becker. In his conceptualization of positive economics, Milton Friedman (1953) assumes that people respond to different situations “as if”

³ For the sake of expositional clarity, we summarize our results in the form of proposition. In a recent AMR editorial, Cornelissen (2017) referred to this style of theorizing as the “proposition-based style”. In contrast to Cornelissen’s characterization, our propositions do not introduce “cause-effect relationships” but outline the cornerstones of our proposed methodology.

they were rational decision makers. In his conception of economics as a general approach to human behavior, Gary Becker (1976: 7) maintains stable preferences and rationality in an “almost tautological” way.

Also in more recent discussions economists have maintained the idea that the HOM’s core assumptions do not correspond to testable, psychological propositions. For instance, Boland (1981) characterizes the theoretical core assumptions of neoclassical economics as “metaphysical” and argues that “no criticism of [the neoclassical] hypothesis will ever be successful.” (p. 1031). Another example comes from Vanberg (2004) who distinguishes two interpretations of rationality, one as a (non-refutable) principle, and one as a testable hypothesis. Interpreted as a principle, rationality “does not qualify as an empirically contentful, refutable conjecture” (Vanberg 2004: 3). As these references demonstrate, the HOM in economics is not to be understood as a psychological model of human nature, but as a methodological heuristic.⁴ We take this widely spread understanding of the HOM in economics to conclude that the HOM is not an empirical concept. It is not an ontological statement or even a model of human nature, neither in a positive, nor in a normative sense.

Proposition 2: The assumptions of HOM represent principles of the economic approach and are thus not refutable empirically. Hence, the HOM is not a model of human nature, neither positive nor normative.

There is a second parallel between Popper’s methodology and that of standard economics: Popper’s distinction between invariant and variant elements of an explanatory theory is mirrored in a similar distinction drawn in economics (e.g., Latsis 1972, Hahn/ Hollis 1979; Blaug 1980, Glass/ Johnson 1988). When Popper’s principles correspond to the HOM in economics, the equivalent to the “logic of the situation” are the *constraints* under which economics assumes agents to maximize their utility.

When explaining behavior, economics assumes constant preferences but it also specifies behavioral constraints (such as costs, monetary and psychological). Taken together, both elements transform into an explanatory model: given a contingent set of constraints, the observed behavior is interpreted as the rational response of the agent. Figure 1 illustrates the

⁴ Popper also argues that the adoption of the rationality principle “has little or nothing to do with the empirical or psychological assertion that man always, or in the main, or in most cases, acts rationally.” (Popper 1964/ 1994: 169)

interplay between invariant behavioral assumptions (the HOM), a contingent model of the situation, and resultant behavior.

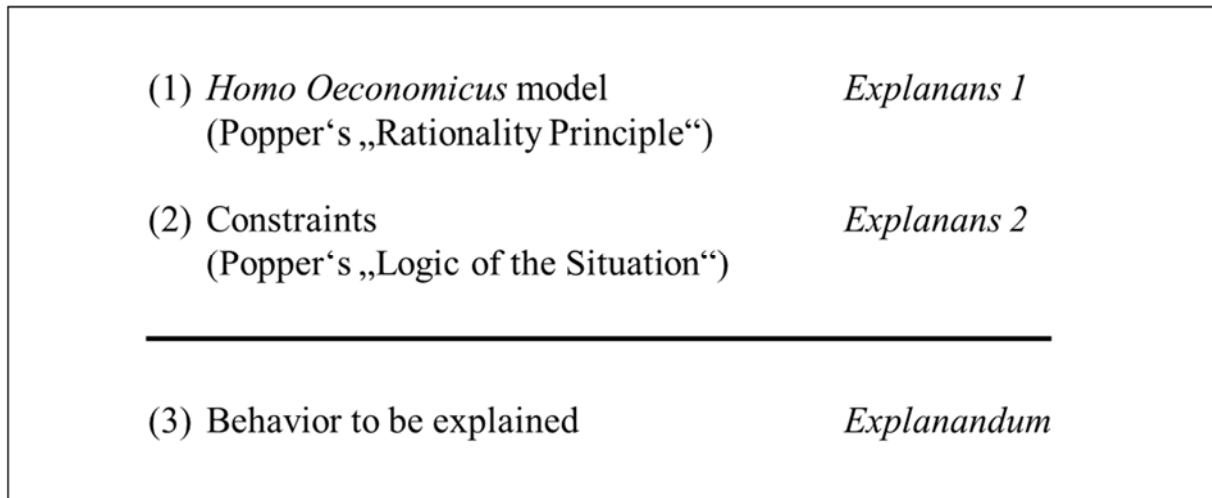


Figure 1: *Explanation in the economics-based research paradigm*

The specification of the roles of principles on the one side, and the empirical situation on the other, allows us to offer a precise conceptualization of HOM's methodological status. The behavioral assumptions underlying the HOM correspond to a methodological heuristic that provides guidance to the process of explaining behavior. If observed behavior contradicts predicted behavior, the researcher is instructed to concentrate on modelling the empirical situation that may have been responsible for the theory's predictive failure. Thus, we need both the concrete empirical situation at hands (*Explanans 2*) and the HOM (*Explanans 1*) to offer rigorous explanations of empirical phenomena (*Explanandum*).

As Vanberg (2004: 3) puts it, Popper's rationality principle is "a heuristic principle that tells us what we should look for when we seek to explain human action." In this view, if human behavior seems to contradict the assumptions of HOM, we are well advised not to abandon the rationality assumption but to look for changes in empirical situations that may have been responsible for the agent's behavior. Analogously, Gary Becker explicitly advises against abandoning the rationality assumption when observations contradict theoretical predictions. According to his approach, it is not methodologically rigorous that "if some Broadway theater owners charge prices that result in long delays before seats are available, the owners are alleged to be ignorant of the profit-maximizing price structure rather than the analyst ignorant of why actual prices do maximize profits" (Becker 1976: 12). Economic explanations of such behavior should "not take refuge in assertions about irrationality" (p. 7) but point to the situation that is mis-specified as long as observation contradicts prediction.

To illustrate the consequences of our proposed methodology for the conception of morality, we would like to draw an analogy inspired by the physicist and philosopher Carl Friedrich von Weizsäcker. He very nicely illustrates the difference between daily experience and scientific reconstruction of the same phenomenon by means of an historical example: Aristoteles' and Galileo's way of explaining falling objects.

“Aristotle says that heavy bodies fall fast, light bodies fall slowly, very light bodies will even rise. This is exactly what everyday experience teaches us; a stone will fall fast, a sheet of paper more slowly, a flame will even rise. Galileo says that all bodies fall with equal acceleration and will therefore after equal time have acquired equal velocity. In everyday experience this is just wrong. Galileo goes on to tell us that in a vacuum bodies would really behave like that. Here he states the hypothesis that there is a vacuum, an empty space, again contradicting not only Aristotle's philosophy but every-day experience. He was not able to produce a vacuum himself. But he greatly encouraged later 17th century physicists, like his pupil Torricelli, to make a vacuum; and in fact, when a sufficiently empty space was there, Galileo's prediction proved true. Further, his assertion opened the way for a mathematical analysis of buoyancy and friction, the two forces responsible for the different behaviour of falling bodies of different specific weights, sizes, and shapes. Only if you know how a body would fall without these forces will you be able to measure them by their impeding effect.“ (von Weizsäcker 1964: 104-5)

Galileo's laws of motion are counterintuitive because they contradict daily experience. But that is not the point: They provide a general theory that instructs researchers on where to look for the reasons for why objects do not fall as predicted. The use of the HOM for the study of morality is very similar. To interpret observed cooperative behavior as a “falsification” of the HOM is like interpreting a rising balloon as a falsification of Galileo's laws of motion. But this is not how physicists proceed. Rather than adjusting the laws to explain differences in how objects fall, physics explains differing speeds with varying situational conditions (here: air resistance).

We suggest to transfer this methodological strategy to the HOM: When observed behavior seems to contradict our assumptions, we do not take this as a falsification of our theory's principles, but as a reason to look deeper into the phenomenon and wonder how it may be consistent with the model. That is, we ask which constraints may have been responsible for the behavior we observe. As Boland (1981:1035) puts it: “The research program of neoclassical economics is the challenge of finding a neoclassical explanation for any given phenomenon – that is, whether it is possible to show that the phenomenon can be seen as a logical consequence of maximizing behavior – thus, maximization is beyond question for the purpose of accepting the challenge.”

We can synthesize the results to this point and formulate a central thesis of our paper. The methodological use of the HOM implies that if we observe moral or immoral behavior, we do not explain these observations with varying preferences for honesty, trust, or reciprocity. Alternatively, we wonder what situational conditions may be responsible for the observed behavior.

Proposition 3: When looking for theoretically consistent explanations for (im)moral behavior, the *Homo Oeconomicus* model is held constant, while varying constraints are held responsible for varying behavior.

4. The Problem of Business Ethics: Social Dilemmas and the Limits of Morality

Now that we have clarified what the HOM means in an epistemological sense, we can turn our attention to the next question: Why should this model be useful for the study of morality? As we will outline below, the reason is that economics, with HOM at its methodological core, allows for a rigorous analysis of human cooperation. The possibility of human cooperation is one of the most fundamental problems in ethics because cooperation emanates from morality. As Tomasello/ Vaish (2013: 231) put it, “morality is a form of cooperation”. Thus, any explanatory approach to ethics is in search for a theoretically consistent explanation of why and under what conditions human beings (fail to) cooperate.

In our effort to specify these conditions, we will begin with the most basic case of non-cooperation.⁵ Once we have established the theoretical means to explain the general case of non-cooperation, we can go on to identify the factors that help overcome this state and enable cooperation. This procedure of reconstructing the emergence of morality out of an a-moral situation has a long tradition in economics-based treaties on morality (e.g., Buchanan/ Brennan 1985, Gauthier 1986; 1991, Ostrom 2000).

So why do people fail to cooperate even if cooperation would be in their interest? From an economic perspective, the most general answer is: because of *competition*. Economic analysis is about scarcity and competition because human interaction is constrained by scarcity. Thus, in their daily decisions, agents compete with each other for scarce resources. This mode of

⁵ Note that this is a methodological choice which of course does not deny that evolutionary, cooperation may have developed first (Tomasello 2009).

interaction is particularly pronounced in competitive market economies. To illustrate how competitive interactions affect the possibility of cooperation, economics has developed various mathematical models. In any of these models, cooperation is the socially desired, but difficult to implement behavior, and as such, represents moral behavior. One of the models that has often been used to analyze the possibility of human cooperation, is the Prisoner's Dilemma (Axelrod 1984; Gauthier 1986; Greene 2013). For the sake of expositional clarity, we will concentrate on the prisoner's dilemma, although our arguments also hold for other social dilemma models (such as public goods or tragedy of the commons).

Formal and verbal descriptions of the prisoners' dilemma abound (Kuhn 2017; Poundstone 1992: 21) and we do not intend to explain the scheme in detail here. At this point, it will suffice to point out the elements that are most important for our purposes:

- Firstly, although each agent decides individually, their decisions are interdependent because each agent's decision affects everybody else's outcome.
- Secondly, the situation simultaneously includes both common and conflicting interests. By means of cooperation, all agents could improve their situation (common interest). But at the same time, the incentives are such that each agent is tempted *not* to cooperate because this may improve his outcome if the other agents continue to cooperate (conflicting interests).
- These conflicting interests imply the third central feature of social dilemmas: the risk of being exploited. When choosing to cooperate, each agent makes himself vulnerable to others. It is exactly an agent's willingness to cooperate that allows others to free-ride and exploit cooperation. Hence, the only way to protect oneself from being exploited is non-cooperation.

The well-known result of social dilemmas is non-cooperation in equilibrium. Corresponding to Hobbes' (1651/ 2005) state of nature in which there is "war of all against all," this situation forms our methodological point of departure.

Proposition 4: In an economics-based analysis of morality, social dilemmas represent the basic form of human interaction.

The critical reader may counter that social reality includes many examples of successful cooperation, so a methodology that assumes social dilemmas as the general form of interaction must be flawed. We would like to address this potential objection in the same way in which we specified the methodological status of the *Homo Oeconomicus* model: Our objectives in this

paper are theoretical, not phenomenological. That is, we do not deny that there are many other situations in the “real world” in which participants in an interaction are not caught by social dilemmas but in which they cooperate successfully. But again, the heuristic use of social dilemmas is pre-empirical in that it instructs our scientific perspective on reality. It is a methodological stipulation that cannot be falsified empirically; and it should not be confused with an ontological statement on “social reality” *per se*.

The assumption of social dilemmas as the basic form of human interaction is our normative decision because it is *useful* for our purposes, not because it is “true” in an empirical sense. It is useful in directing our attention to the factors that may allow for cooperation despite of underlying social dilemmas. As we will discuss in more detail below, various kinds of institutions are capable of overcoming social dilemmas and thus enable cooperation. Institutions may exist in the form of coded law, but they also include various kinds of formal and informal agreements that allow for cooperation in spite of social dilemmas (Greene 2013; Heath 2014; Schreck et al. 2017). Because of its capacity to illuminate the role of institutions in enabling cooperation, the assumption of omnipresent social dilemmas is the adequate analytical heuristic.

Our proposed methodology stipulates that if cooperation is observed, this observation should not be attributed to the absence of dilemma structures, but to the presence of institutions that successfully overcome dilemma structures. Methodologically, the assumption of social dilemmas will never be abandoned. Instructed this way, the researcher never stops “seeing” institutions at work and how they enable cooperation by overcoming dilemma problems. The point is that if institutions are missing or disappear, the dilemma structures will become prevalent again, and cooperation will fail.

The assumption of omnipresent social dilemma structures is important to the aims of this article because it justifies the use of the *Homo Oeconomicus* model. Our argument is that for the sake of predicting the *aggregate* behavioral consequences of social dilemmas, *Homo Oeconomicus* is the preeminent, indispensable analytical tool. In this sense, what we propose is a “micro-funded macro theory” (Zintl 1989):⁶ Although the *Homo Oeconomicus* is a model of individual behavior, its explanatory and predictive power only unfolds at the macro-level.

⁶ To be sure, Zintl (1989) understands the economic man not only as assumption that helps us to derive predictions of aggregated behaviour in dilemma structures. He shows that, in general, explanations may differ

Now, assuming that people maximize their own utility, in a prisoner's dilemma kind of situation, each agent may choose to defect (i.e., not to cooperate) for one of two reasons. Thomas Hobbes was the first to identify these reasons. The first is "glory,"⁷ or the "pleasure of superior power with respect to others;" (Slomp 1990: 76) the second is the defective strategy as "diffidence," which Hobbes in his own Latin translation changed to „defensio.“ On this interpretation, the agent is forced into the defective strategy because cooperation would bear the risk of being exploited by the other agent. If one agent is worried that the other will defect, the only way to defend himself is by defecting himself. Thus, defection is a preemptive strategy in social dilemma structures. It is not a human motive, but an incentive-induced imperative; agents do not *act as homines oeconomici*, they *react as homines oeconomici* to the (anticipated) behavior of others whose decisions may be to their disadvantage.

Proposition 5: The use of HOM is justified not because it is empirically valid, but because it allows for reliable predictions on the behavioral consequences of social dilemma structures.

Whenever we observe immoral behavior, our research program cannot 'see' individual moral deficiencies, but only individuals reacting rationally to prevalent dilemma structures. Thus, our proposed methodology's focus is not on individual motives or one particular agent's behavior, but on the situational constraints that are responsible for the failure of cooperation.

Proposition 6: An economics-based analysis of morality interprets failed cooperation (immoral behavior) as the result of social dilemmas, not of individual moral deficiencies.

It is important to offer an explanation for the various forms of cooperation we observe in reality and in controlled experiments, because such an explanation is instrumental to one of the most important goals in ethics: the facilitation of cooperation as an expression of morality. Now that we have explained non-cooperation as our methodological point of departure, we are ready to explain deviations from this basic state of affairs. That is, we can begin to ask for the causes of the various forms of cooperation that we encounter in our day-to-day lives and that have been observed in behavioral experiments.

in the social sciences depending on whether researchers aim at a micro-theory or a micro-funded macro-theory.

⁷ In "Elements of Law" Hobbes (1650/ 1994: 50) states: "GLORY (...) is that passion which proceedeth from the imagination or conception of our own power, above the power of him that contendeth with us."

5. Explaining the Existence of Morality in a World of *Homo Oeconomicus*

We showed that the central obstacle to cooperation is free-riding, i.e. defection in social dilemmas. Free-riding corresponds to exploiting those who cooperate, and cooperators can only defend themselves by defecting as well. Since dilemma structures are the root cause of failed cooperation, any theory that intends to explain and predict cooperation should strive to identify those factors that are able to overcome dilemma structures and enable cooperation. This is where we believe experimental economics bears the highest potential for ethics. Experimental economics has provided fascinating insights in the functioning of various factors that facilitate cooperation. For our purposes, it is useful to distinguish two classes of such factors. Individual factors refer to individual characteristics or behavioral strategies that may be able to stabilize cooperative behaviors in groups. Collective factors refer to rules that constrain group members' set of available actions to make everybody better off.

5.1.1. *Individual Factors*

Not surprisingly, experimental research has shown that human beings do in fact act morally in various ways even if this behavior does not maximize their monetary returns in the lab. Many participants in behavioral experiments cooperate and are willing to incur costs for the punishment of free-riders; many behave fairly, altruistically, reciprocal, and honestly (Ariely 2011; Chaudhuri 2011; Güth/ Kocher 2014). Given that, per definition, *Homo Oeconomicus* has no ex ante morality, how can we consistently explain these behaviors without abandoning HOM? Note that morality – in contrast to the assumption of exogenous preferences – becomes endogenous here, it becomes the *explanandum*.

It is important to note that observed behavior in the lab rests on an array of presuppositions. Experiments do not take place out of context. Participants are human beings with their own morality, some of it innate, some of it learned. They bring these “homemade” dispositions into the lab (Andreoni/ Miller 1993; Camerer/ Weigelt 1988). Most evidently, it is impossible for experimental research to investigate the pre-empirical state that the HOM represents in our view.

Nevertheless, it is possible to explain the evolution of such dispositions within an HOM framework: it may simply be rational to internalize widely accepted norms and to cooperate, share payoffs, and tell the truth. Such an interpretation is rooted in those works of philosophy and economics that interpret morality as a useful human *invention*. According to David

Gauthier, for example, human beings commit themselves to moral standards because this self-commitment allows for useful cooperation with other market participants: “[R]ational constraints on the pursuit of interest have themselves a foundation in the interest they constrain. Duty overrides advantage, but the acceptance of duty is truly advantageous.” (Gauthier 1986: 2)

This perspective is also in line within recent evolutionary and social psychology where it has been argued that morality is a useful human invention that serves as a means towards the end of cooperation (Haidt 2013; Hauser 2006; Tomasello 2016). As Joshua Greene puts it: “Morality is a set of psychological adaptations that allow otherwise selfish individuals to reap the benefits of cooperation” (Greene 2013:23).

Thus, it is no contradiction to the HOM assumptions if participants in laboratory experiments behave in a way that does not “pay off” in the short run. The evolution of individual moral dispositions is a process that has taken place long before participants arrive in the behavioral lab. And many of these participants will refuse to abandon their long-practiced behaviors just because a laboratory experiment offers minor short-term benefits (Andreoni/ Samuelson 2006; Axelrod 1980; Nowak et al. 2000; Sterelny et al. 2013).

Proposition 7: An economics-based analysis of morality interprets the evolution of moral dispositions as a human invention that facilitates cooperation for mutual benefit.

Several theories have aimed at extending the HOM by incorporating or even explicitly modelling social preferences (Fehr/ Schmidt 2003; Lindenberg 1983; Simon 1957). On our interpretation, these theories have the purpose of refining the HOM, not replacing it. This is because the explanatory and predictive power of these models is not universally superior to that of HOM (Schmidt 2009, 2011). Rather, the models specify the conditions under which it is plausible to assume that agents are able to act in line with certain social norms such as fairness, altruism, reciprocity, honesty, etc. This way, they contribute to a contingency theory of moral behavior.

5.1.2. Collective Factors

We argued that moral dispositions rest on preconditions that are beyond the scope of experimental research because the factors that were originally responsible for the evolution of such dispositions worked long before participants enter the lab. But even though experimental research cannot fade out these evolutionary preconditions, it can scrutinize the salience and

stability of various forms of morality under varying conditions. In this vein, experimental research has shown that social preferences do not persist unconditionally, and it has succeeded in identifying various collective factors that are more or less conducive for the persistence of morality.

One example is the seminal study of Fehr/ Gächter (2000) who showed how the possibility to peer-punish free-riders can stabilize cooperation. Most importantly, they showed that the *same* participants in the experiment varied their cooperating behavior dramatically, depending on whether there was the option to punish free-riders. We interpret these results in a way that participants were in fact willing to cooperate, but only if there was a way of protecting themselves from exploitation. If no punishment was possible, their cooperation could be exploited by free-riders who took advantage of less scrupulous peers. In equilibrium, almost everyone defected. But once the option to punish free-riders existed, participants could enforce cooperation as the norm-compliant behavior.

The Fehr/ Gächter (2000) study is just one example for how experimental economics has begun to shed light on how various institutions help overcome dilemma structures and enable cooperation. At the heart of the concept of an institution lies the notion of rule-following behavior (Langlois/Hodgson 1992, 165). Institutions coordinate our actions by means of orientation to a common understanding and evaluation of situations. Thus, they make behavior more predictable as they contain and transmit knowledge that helps us to interpret situations including ways and means to cooperate.

Most important for the purposes of the present paper, institutions facilitate cooperation when they solve the problem of exploitation. That is, when they change the incentives in a way that cooperators do not bear the risk of being exploited by free-riders anymore. Either because cooperation is rewarded, or because free-riding is punished (not necessarily in monetary terms). Beyond the example just mentioned, a wide range of studies in experimental economics compare different exogenous institutional arrangements by their capability to enforce socially accepted norms such as cooperation. In these experiments, participants have to accept incentives at the institutional level as they are, but they have the possibility to make decisions on the level of individual actions. For example, Andreoni et al. (2003) used different variants of a proposer-responder game to analyze how punishments and rewards can stabilize cooperation among the players. Based on the results of their experimental study, the authors determined that participants discipline each other most and achieve the highest levels of cooperation and social welfare when they have the option to reward or to punish their peers.

Similarly, Gächter et al. (2008) concluded from their public goods experiments that punishment options in long-term interactions lead to more cooperation and higher profits. And Casari/ Luini (2009) showed that punishment options are particularly useful in fostering cooperation when supported by the majority of a group. Such works provide important insights into the conditions under which mutual punishment may function as a norm-enforcing institution.

Another strand of experimental research examines under which conditions members of a group are willing to invest and engage in (endogenous) institution building. For example, consider the experiment of Andreoni/ Gee (2012), who explored the influence of two alternative endogenous control institutions on levels of cooperation in a public goods game. In the case of peer-to-peer punishment, participants make their choices on how much to contribute to the public good. In addition, they can penalize each other for uncooperative behavior (action level). Alternatively, they can also centralize the right to punish and delegate it to an independent policing mechanism, which corresponds to a choice on the level of institutions (called "common pool institutions", cf. Guala , p. 12). In the latter case, the player with the lowest contribution to the public good automatically receives a penalty, making it optimal for each player to provide the second-lowest contribution. Collectively, each player's intention to contribute more than the lowest contribution causes an upward spiral, ultimately leading to comparably high contributions in the groups that choose the delegated punishment system.⁸

As these examples of exogenous and endogenous institutions show, the findings of experimental research are of utmost importance to the study of morality. Not primarily, though, because they would prove the existence of social preferences, or moral dispositions. In our view, their main accomplishment is that they help us understand more about the emergence and functionality of institutions that are able to overcome dilemma structures, thus enabling cooperation. In this function, they allow for a specification of the conditions under which it is plausible to systematically expect behavior that deviates from the HOM predictions.

Proposition 8: Experimental economics is relevant to the study of morality because it helps understand the situational conditions under which different forms of morality emerge and persist.

⁸ For more studies on endogenous institution formation, cf. Gülerk et al. (2006, 2014); Kosfeld et al. (2009); Putterman et al. (2011); Sutter et al. (2010); Traulsen et al. (2012); Zhang et al. (2014)

6. The HOM, Pluralism and the Normative Dimension

Our arguments to this point may have made clear that the HOM does not imply any *direct* normative consequences. The model is a purely positive analytical tool designed to model behavior in social dilemmas. The assumption of *Homo Oeconomicus* have never been meant to meet real human beings. In our view, it is thus misconceived to use the HOM as a normative decision-making principle that ought to guide human behavior (Harsanyi 1977: 16; Sugden 1991: 752). But of course our positive analysis has an *indirect* normative dimension as the results of an economic approach do have implications for the normative discourse in business ethics. That is because the normative and the positive discourse are strongly interconnected to meet the purpose of the field.

In our view, there is no need to *choose* among different theoretical approaches e.g., between behavioral economics and our rational choice approach. These theoretical perspectives do not compete each other as they ask different question. In Poppers terms: the construction and validity of theories depend on the problem at hands, i.e. the problems the researchers want to solve with these theories. Depending on the problem, theories focus on certain aspects, reducing the complexity of the worlds we live in (Suchanek 1994). As Peter Blau (1997, 16) wrote: “it is legitimate for a theory to confine itself to explaining some aspect of empirical reality and exclude others”.

Hence, our approach is not imperialistic in the sense that it seeks to explain every empirical phenomenon; but it is imperialistic as it interprets all interactions as actors’ efforts to maximize utility in dilemma structures. These assumptions are valid assumption for the solution to a central problem in business ethics: How to implement desired behavior in large scale environments. Experimental economists, e.g., do not share the same problem: They research (evaluations and choices of) individual actors in certain situations, aiming to describe human behavior in all its facets. Whereas behavioral economists aim to derive “mid-level generalizations” (Kahneman 2003: 1449), our approach tries to unveil macro-level mechanisms. Thus, as we have argued in this paper, a rational choice approach is not interested in easing the unrealistic assumptions underlying the HOM towards a more realistic picture of man – an endeavor that lies at the core of behavioral economics. But this disinterest is not grounded in a conviction that behavioral economics is inferior to a classic approach; rather it is

grounded in the insight that both approaches operate at different levels of analysis thus aiming to solve different problems.⁹

The level of analysis is crucial in understanding the limits and possibilities of a research paradigm. An approach that aims to explain macro-phenomena is different to one that aims to explain micro-phenomena and this difference is not just because macro level theories often reduce the complexity of their assumption to a minimum. It's that they just explain different phenomena. As an example take Durkheim's explanation of the suicide rate (see Durkheim 1897/ 2002, also Satz/ Ferejohn 1994: 84-85). What Durkheim puzzled was the observation that the suicide rate in France, Denmark and Britain stayed relatively constant. As the examination of personal traits of the people who committed suicide did not explain the constant rates, he focused on structural aspects (the number of social ties among individuals) and found that people with both too few and too many social ties had a higher probability of committing suicide. Thus, the appropriate explanation abstracts from individual personalities and focuses instead on the structure of interaction and how these structures shape individual decisions. The rational choice approach put forward in this article proceeds a very similar way: it does not focus on individual traits and how these traits are responsible for moral or immoral behavior. Instead it focuses on the structure of human interaction.

To sum up, as we understand it, there is no contradiction between Behavioral Economics and a rational choice approach. Both are fruitful research paradigms that build on different methodological assumption seeking to answer different question. And as we have shown in the last section, our "classic" economic approach is also capable of integrating results of behavioral economists. So, there is no need to decide which approach is true or false.

When it comes to methodological choices, pluralism steps in a second time. Our assumptions about the methodological status of the HOM and the Dilemmastructures largely build on classic ideas particularly put forward by Popper. Here again, you may choose another philosophy of science as our understanding of science, and how science should proceed bases, in the end, on normative stipulations. Reflecting this, it might be argued that Poppers and our methodology is

⁹ Behavioral economists see the relevance of a rational choice approach as well. Camerer and Loewenstein (2002: 3) argue that the research in behavioral economics "(...) does not imply a wholesale rejection of the neoclassical approach to economics based on utility maximization, equilibrium, and efficiency. The neoclassical approach is useful because it provides economists with a theoretical framework that can be applied to almost any form of economic (and even non-economic) behavior, (...)" and Rabin (1998, 12–13) states "Mainstream economics employs a powerful combination of methods. (...) I believe these methods are tremendously useful (...)."

too much focused on explanation and prediction implicitly assuming social sciences to be like physics (and indeed, we did parallel economics and physics in this paper). Other philosophies of science argue less for an explanation and generalization of social phenomena but focus on the idiosyncrasies of e.g. organizational situations that favor moral or immoral behavior. Again, we do not see approaches that focus on idiosyncrasies as competitors to a science approach to business ethics. Whereas the former focus on theory building in the sense that researchers aim to develop frameworks able to capture social phenomena in its complexity, the latter is about explaining and predicting behavior in large scale environments. We do not see the necessity to choose among these different, often incommensurable (Kuhn 1970) ways of doing science as long as they aim different things.

Reflecting these methodological statements, we come to our last proposition. Economic approaches to business ethics are often criticized on empirical and normative grounds. We argued that although behavioral economics gives valuable new insights to the behavior of man, we should not interpret the results as falsifications of the HOM. The HOM is a fruitful pre-empirical model that helps to analyze moral behavior in dilemma structures seeking to answer the question of implementation. Coming to the normative criticism of an economic approach, we argued that “economic imperialism” does by no means imply that other theoretical approaches to business ethics are superseded. They rest upon other normative stipulations, follow another philosophy of science and try to solve other problems than a classic economic approach. In turn, it makes no sense to criticize an economic approach for being too much physics or for being imperialistic. Hence, our last proposition highlights the importance of a pluralistic science.

Proposition 9: Any theory is built on normative stipulations. Therefore, criticism that directs the economic approach for being normative in this sense is flawed.

7. Literature

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