Sigmund Wagner-Tsukamoto*

The Adam Smith Problem Revisited: A Methodological Resolution

Abstract: The Adam Smith problem refers to a claimed inconsistency between the *Theory of Moral Sentiments* and the *Wealth of Nations*, regarding the portrayal of human nature in these two books. Previous research predominantly resolved the claimed inconsistency by uncovering virtuous, less selfish character traits in the *Wealth of Nations*. This article voices caution. I acknowledge – on methodological grounds – fundamental differences regarding the portrayal of human nature in Smith’s behavioral ethics, i.e. the *Theory of Moral Sentiments*, as compared with Smith’s economic research. The key argument is that Smith’s two books address different research problems and hence do not, need not and cannot adopt the same view of human nature – for methodological reasons, so my argument. Adam Smith scholarship overlooked that Smith himself in considerable degrees understood “economic man” as a heuristic abstraction. I connect to the philosophies of science of Imre Lakatos and Karl Popper.

Keywords: Adam Smith problem, economic methodology, problem dependence, research heuristics, Popper, Lakatos

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***Corresponding author: Sigmund Wagner-Tsukamoto**, School of Management, University of Leicester, Leicester LE1 7RH, UK, E-mail: sawt444@aol.com

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Whether this propensity [in human nature] be one of those original principles in human nature, of which no further account can be given; or, whether, as seems more probable, it be the necessary consequence of the faculties of reason and speech, it belongs not to our present subject to enquire.

Adam Smith (1776/1976, 25), *An Inquiry into the Nature and Causes of the Wealth of Nations*.

Such exclusive [colonial monopoly] companies, therefore, are nuisances in every respect; always more or less inconvenient to the countries in which they are established, and destructive to those which have the misfortune to fall under their government.

Adam Smith (1776/1976, 641), *An Inquiry into the Nature and Causes of the Wealth of Nations*.

1 Introduction

The Adam Smith problem has intrigued philosophers of human nature and social scientists for some time. It refers to an apparent inconsistency between Smith's *Theory of Moral Sentiments* (TMS) and the *Wealth of Nations* (WN): In the TMS, Smith developed a philosophical debate about the moral human being, whereas in the WN, Smith pioneered the economic approach, which is likely to stand out as probably the first social science to be "invented." Both works strongly define, at least at first glance, a diametrically opposite image of human nature – on the one hand man as a virtuous, morally conscious, sympathetic being in the TMS and on the other the human being as a self-interested performer for his own gain (economic man, "homo economicus") in the WN.

Previous research has attempted to address this apparent dichotomy in Smith's writings. Exemplary are the efforts of philosophers of human nature and behaviorally oriented social scientists, including behavioral economists, who argued that the WN also adopted a complete, holistic image of human nature and concluded that an Adam Smith problem does not in fact exist. Typical is Coase (1994, 111): "I can find no essential difference between the views on human nature expressed in the *Theory of Moral Sentiments* and those expressed in the *Wealth of Nations*." In one way or another, such reconciliation attempts connect to anthropological philosophy. I suggest that such arguments are inadmissibly myopic.

For this purpose, the article explores the philosophy of science, specifically methodological issues of the problem-dependent and heuristic nature of scientific research. Using this approach, I comment on fundamental differences between Smith's portrayal of human nature in the TMS and the WN. These differences are reconciled not by somehow trying to equate, in anthropological terms, the images of human nature of the TMS and the WN, but by showing that both studies were tailored to solve fundamentally different research problems. This implies that the portrayal of human nature in these two books played a different methodological role. If carefully read, one can find many explicit and

implicit references in the TMS and the WN that demonstrate Smith's understanding of a model of human nature in these two books differed significantly, and Smith even went some way to methodologically project such differences to the different purposes of the TMS and the WN. The article develops in this respect a critical perspective on Adam Smith scholarship and the previous analysis of the Adam Smith problem. In studying this article, it will become apparent that many of Buchanan's (1975, 91–2) critical comments on Adam Smith scholarship, which he made shortly before the bicentenary of the publication of the WN, are still valid today.

The article proceeds as follows: In the first section, I briefly reviewed the historical roots of the Adam Smith problem from its beginnings up to today's contemporary debate. In the second section, I developed a methodological critique regarding the purpose and nature of the model of economic man in economic research. I referenced the works of Hayek, Machlup, Friedman, Becker, Buchanan, and Homann, to name a few, who argued that the model of economic man should not be read as the economist's empirical, behavioral depiction of human nature. Going further, I conceptually deepened their methodological suggestions by drawing on the philosophies of science of Popper and Lakatos, and their suggestions on the problem-dependent and heuristic nature of scientific research. Utilizing all these various trains of thought, I drew together and clarified the Adam Smith problem. In the third section, I offer conclusions.

2 The Adam Smith problem in empirical, behavioral perspective: then and now

Ever since the publication of the WN, Smith has been viewed as the “founder of the materialistic Manchester School that preached the gospel of self-interest” (Montes 2003, 68). Smith's model of economic man was critiqued on empirical, behavioral grounds, largely connecting to anthropological philosophy, as an undesirable and incomplete image of human nature, especially so in comparison to his model of human nature in the TMS. The Adam Smith problem then is based on the view that there is a deep inconsistency between the TMS and the WN. Apparently, if taken as a whole, as Wilson and Dixon (2006, 252) note, Smith's work seems to suppose that “... human behavior is governed by two quite different (and contradictory) principles.” Tribe's (1999, 613, 622) argument supports this view.

During the nineteenth century, this apparent inconsistency between the TMS and the WN was analyzed and became known in the German-speaking world as “Das Adam Smith Problem.” A prominent figure of this “inconsistency school of

thought” was Hildebrand who criticized Smith as the “anti-hero” of political economics, taking issue with a claimed one-sided, self-interested depiction of human behavior in the WN, the “deification of private interest,” and the claimed goal of the WN to “... transform political economy into a mere natural history of egoism” (Hildebrand 1848, 275; see also Gide and Rist 1915, 394; Wilson and Dixon 2006, 253). Teichgraeber (1981, 106–07) and Montes (2003, 68–73) have a good overview of this “anti-Smith” debate in Germany.

As much as this “inconsistency school” on the Adam Smith problem acknowledged – in my view correctly – irreconcilable differences between the TMS and the WN, from the mid-nineteenth century onward increasingly the thesis emerged that both works could somehow be reconciled by regarding them as forming part of a larger system of anthropological philosophy and traditional moral philosophy. A school of thought emerged which could be called the “unity school” or “consistency school.” This school appeared in many different guises, which cannot all be described in detail in this article. At the risk of oversimplifying the situation, I have distinguished two different versions of the unity school, both of which draw on anthropological philosophy albeit in different ways: A reconciliation of the TMS and the WN, at least in relation to their claimed images of human nature, can be undertaken either by subsuming the WN under the TMS, then demonstrating that the WN did entertain a similarly complete, moral image of human nature, as it can be associated with the TMS; or reconciliation can be undertaken by subsuming the TMS under the WN, showing that even the TMS is driven by concepts of self-interest as its organizing principles. The majority of scholars that have attempted to reconcile the TMS and the WN concentrated on the former approach, whereas the latter method has attracted much less attention. In the following, I have briefly reviewed both types of “unity schools.”

Oncken (1897) was an early advocate of the view that the WN could be reconciled with the TMS, arguing, similarly to Morrow (1927), that the idea of self-interest of the WN could be subsumed as an “inferior virtue” (p. 330) under a superior or ultimate virtue such as prudence (See also Heilbroner 1982; Pack 1997, 127–8). Viewed this way, Evensky (2005, 23–5) suggests reading metaphysical, deity connotations into the WN in order to resolve supposed inconsistencies, whereas Göçmen (2007, 1, 160) argued that mutual sympathy was the overarching concept for reading the TMS and the WN together.

Many modern interpreters of the Adam Smith problem connect in this tradition to the consistency school; for instance, Grampp (1948), Macfie (1959), Campbell (1971), Hutchinson (1976), Skinner (1976), Sobel (1979), Teichgraeber (1981), Heilbroner (1982), Winch (1986), Nitsch (1991, 1990), Werhane (1991), Evensky (1993, 2005), Collins (1994), Pack (1997), Witztum (1998), Haakonssen (2002), or

Montes (2003). They aim to unify the image of human nature of the TMS and the WN, attempting to show that there are considerable allusions to moral principles of virtue and sympathy in the WN and that this serves to prove that the Adam Smith problem is exaggerated. According to this type of unity school, their conclusions greatly diminish the Adam Smith problem. Indeed, Recktenwald (1978, 66) even claimed that the “Adam Smith problem . . . is *passé*.”

Otteson (2000, 2002), and even more radically Dupuy (1990, 1993, 2006) aimed to unify the other way around, claiming that self-interest already played a major role in the TMS. Otteson does so in line with Smith’s “familiarity principle” and the “impartial spectator” of the TMS (Otteson 2002, 6–7; see also Campbell 1975, 68–9, 74; Raphael 1975, 85, 90–5); for instance, through conscientious behavior, as directed by the “impartial spectator” (i.e., one’s own conscience, as Smith interpreted this idea in the TMS), humans satisfy their (self-) interests – their vanity, as Smith put it (Raphael 1975, 92) – in cooperating with others and for being accepted by society. Otteson (2002) argues that this also constitutes the basis for evolving market order in the economic sphere, as analyzed by Smith in the WN.

From this viewpoint, Otteson (2002, 9) has to dismiss Smith’s own outspoken criticism in the TMS of his contemporary economic thinkers, such as Mandeville. Smith associated Mandeville in the TMS with a despicable system of morality that exclusively drew on the idea of self-interest (for setting out a concept of ethics – a “new” concept of ethics, I would add here; however, one which Smith, in contrast to Mandeville, at this point in time did not yet comprehend). Departing from Otteson, I take Smith seriously in this respect and acknowledge a break between the TMS and the WN. My aim is not to substantively reconcile – in terms of syntactic or semantic, anthropological content, however epistemologically read – differences between the TMS and the WN, either in the way that Otteson suggested or in the way advocated by the aforementioned, other type of unity school. Rather, I draw on a “separate” level of interpretation, which could be called a pragmatic one, but one that more precisely reflects an argument of methodology, originating in a philosophy of science debate. On this basis, I acknowledge a methodological rupture between the TMS and the WN.

By drawing on this methodological level of analysis, I can in my view more fundamentally comment on and negotiate the claimed Adam Smith problem – and resolve inconsistency by acknowledging and explaining the differences between the TMS and WN in methodological terms rather than in anthropological philosophical ones.

In this respect, my analysis also differs from Dupuy who in a sense is even more radical than Otteson. Dupuy’s (1990, 1993, 2006) key argument is that “invidious sympathy” or envy and other shades of self-interest already permeate the TMS. I do not question Dupuy’s contention that elements of self-love or self-interest, even envy, are part of Smith’s outline of an image of human nature in

the TMS. However, my analysis departs from Dupuy, as it similarly did from Otteson, regarding the way in which Dupuy analyzes in empirical, epistemological terms: For Dupuy (2006, 102), “self-love is in reality the reflexive modality of sympathy.” There are at least two implications that can be ascertained from this statement. First, self-love, even envy, can be empirically attributed to Smith’s view of human nature in the TMS. I basically do not disagree with this projection. The TMS may entertain in this regard a rather complete, “empirically sound” image of human nature – Raphael (1975, 85, 99) calls it an “empiricist ethics” (similarly Campbell 1975, 71, 74, 78).

My major departure from Dupuy, however, rests with a second point: I do not take the discovery of a complete, anthropologically grounded image of human nature in the TMS, which includes ideas on self-interest, to reconcile in *empirical, epistemological* terms the WN with the TMS. Dupuy draws in this regard on a “same morphogenetic principle” to analyze concepts of self-interest in behavioral, socio-psychological, anthropological terms (Dupuy 2006, 121; see also Dupuy 2004, 278). My key argument, which is explained in detail later, is that the idea of self-interest is a non-empirical principle in the WN. Its realism *or* lack of realism, in empirical, epistemological terms, just does not matter. I view concepts of self-interest in the WN, in sharp contrast to the TMS, as non-empirical, quasi-tautological, heuristic – methodological – constructs.¹ In the next part of the article, I expand upon this line of inquiry by engaging Popper’s and Lakatos’s philosophies of science.

To sum up this brief overview of unity schools, I challenge, in methodological terms, any attempts to reconcile the TMS with the WN, from whichever direction.

Of course, there are some dissenting voices which have continued to argue for the “inconsistency school,” at least since the early twentieth century. For instance, Viner (1927) challenged the “unity view” early on. He argued that even Smith’s revisions of the TMS after the publication of the WN in 1776 did not reduce “... in any particular the points of conflict between the two books” (Viner 1927, 217; also p. 201). Key differences mentioned, for example, are the deistic, metaphysical language and concepts used to set out a moral philosophy in the TMS (as also admitted by Campbell 1975, 81–2). This position bears little resemblance to the WN, which classifies as a non-metaphysical study in the tradition of the Enlightenment (See also Minowitz 1993, 8, 138; Montes 2003, 76).

¹ Similarly, I would disagree with what Dupuy (2006, 104) calls the “Hobbesian trap that makes all passions a matter of selfishness.” As Buchanan (1975, 1987a, 1991), for example, sets out, the “Hobbesian jungle” is an analytic – pre-empirical, heuristic – construct too, methodologically comparable to the idea of the homo economicus (see also Wagner-Tsukamoto 2003, 1, 2010).

Raphael (1975, 96) briefly touched on related issues when suggesting that the WN was concerned with “abstracting economic activity from the whole of social life, and in any event that harmony owed nothing to sympathy [the latter reflecting the ideas presented in the TMS, I would add to clarify].” Raphael, and the inconsistency school in general, makes an important point in this respect; however, this point is not examined further by them through a methodology debate as has been done in the article.

Modern hermeneutical scholars have, at least to some degree, given support to the inconsistency school by discussing different narratives of the TMS and the WN, arguing that they address different audiences (Evensky 1987; Griswold 1999; see also Montes 2003; Tribe 1999). Again, I would project “different narratives” to questions of purpose in relation to methodology.

The article therefore, in contrast to both the inconsistency school and the unity school(s), utilizes a methodologically based approach to review the Adam Smith problem and suggest a solution to it. This approach uncovers areas of agreement and disagreement in certain respects with both the inconsistency school and the unity school. I then am able to demonstrate that the TMS and the WN address fundamentally different research problems, the TMS aiming at the study of human, moral motivation (“human nature” as such), whereas the WN dealt with the organization of economic activity in the tradition of a political economy, which Smith so substantially pioneered through the WN. This insight, so my argument contends, has fundamental implications regarding a possible resolution of the Adam Smith problem on methodological grounds: Here I analyzed principles of the problem-dependent and heuristic nature of research, as set out by Popper’s and Lakatos’s philosophies of science.

It also becomes apparent that both the TMS and the WN are studies in ethics or “morality” but that they differ fundamentally both in terms of methodology and theory building strategy. With this understanding, Smithsonian economics (the WN) is the continuation of ethics with different (methodological, theoretical and normative) means and goals, as compared to traditional ethics, such as virtue ethics (or the TMS) (see also Homann 1997, 1999). This undermines attempts at conceptual reconciliation or even unification, as has been tried for instance, by attributing “mutual sympathy” as normative goal to *both* studies, as done by Göçmen (2007). Göçmen reconstructs the TMS and the WN through anthropology which he projects to historical context. In contrast, I argue that (a) different methods regarding the modeling of human nature, (b) different theory concepts and (c) different normative ethical goals (“mutual sympathy” versus “mutual gains”) need to be attributed to the TMS and the WN.

My key thesis is that the idea of self-interest, and consequently our understanding of the Adam Smith problem, is completely engulfed in a methodological rupture between empiricist moral philosophy on the one hand and economics on the other. This rupture began to develop with Mandeville's *Fable of the Bees* and reached an initial peak in Smith's WN, and therefore the crux of my argument is that this rupture has to be "repaired" through a philosophy of science debate.

3 A methodological reconstruction of the Adam Smith problem

In order to disentangle the Adam Smith problem from a methodological perspective, I questioned a fundamental assumption that has been attributed to the supposed problem. Writers of both the unity schools and the inconsistency school postulate that there is some inconsistency between the TMS and the WN regarding the depiction of human nature, especially the nature of motivation *and* that this represents a problem (which the inconsistency school acknowledges and which the unity school aims to explain "away"). However, why should inconsistency between the two books constitute a problem in the first place? Why should it be inconceivable that Smith subscribed to different views of human nature in the TMS and the WN? Can claims of "contradiction" be resolved in other ways rather than resorting to the approaches of the unity schools or the inconsistency school?

My argument follows along these lines by setting out methodologically what the idea of self-interest amounts to in the economic approach. I do so by reviewing not only the arguments of economists on this issue but also of philosophers of science, such as Popper and Lakatos. In this way, I critique the inconsistency school and the unity schools from a methodological position. As a result, a third school of thought on the Adam Smith problem emerges which we can call the "difference school." I have added support for my arguments with the use of references from the TMS and the WN, illustrating that Smith himself, to a very considerable extent, understood that "views on human nature" were methodologically different in the TMS as compared with the WN.

As far as the WN is concerned, Smith, like many economists who followed in his footsteps, has been relentlessly accused of an incomplete and immoral image of human nature. Among economic researchers, behavioral economists and socio-economists lead the way. For example, Simon's (1955, 1957, 1993) persistent claims of lacking realism behind behavioral assumptions of the model of economic man.

Further examples include Etzioni's (1988) call for a new, morally inspired economics, or Sen's (1990, 1995) "rational fool critique" of economic man. Others similarly critiqued the seemingly selfish and super-rational nature of economic man; for instance, Georescu-Roegen (1971), March (1978), Hodgson (1988, 73–4, 147, 1998, 173, 1993, 5–7), Wilson (1989, 64), Riha (1990, 47), Nitsch (1990, 16–17, 26, 1991, 63–4), North (1993, 13, 15), O'Boyle (1994, 292–3), Jensen and Meckling (1994, 5–13, 18–19), Coase (1994, 111), Rubinstein (1998, 16, 22–3), Tomer (2001, 281–2, 287, 292), or Evensky (2005, 245–64). Further references can be found in Wagner-Tsukamoto (2003), wherein can be found an extensive up-to-date analysis of this debate. Machlup (1978), especially in chapters 10 and 11 of his work, provides a historical review of similar derisory criticism of economic man in early nineteenth and twentieth century writings.

The question must be asked: Is this empirical and moral, behavioral, anthropological criticism of the model of economic man justified? A number of economists have voiced caution. Hayek (1949), Friedman (1953), Machlup (1967), (1978), Becker (1976, 1993), Buchanan (1976, 1987a, 1987b, 1991), Homann (1990, 1994, 1997) or Wagner-Tsukamoto (2003, 2009a) can be quoted as examples. They essentially argued that the model of economic man has been wrongly targeted for empirical and moral, behavioral criticism. Why is this so? In mainstream economics, leaving behavioral economics, economic (socio-)psychology, or economic sociology aside, the model of economic man is understood, as Becker (1993, 385) exemplarily outlines, as a "... method of analysis, not an [empirical, behavioral] assumption about particular motivations." The purpose of this "method of analysis" is to instrumentally organize economic theory building and practical intervention – theory and practical results being then, of course, open to empirical testing and moral scrutiny. This fundamentally undergirds the different research questions and different research problems of economics, yielding outcomes that are very different as compared with behavioral sciences, traditional moral philosophy or anthropological philosophy.

Specifically, "... the model of economic man organizes the situational analysis of decision-making. It focuses research attention on the individual's rational reaction to incentive structures and the gains and losses they signal" (Wagner-Tsukamoto 2003, 41). Economics, as it is classically and conventionally understood, empirically, *and* morally scrutinizes (1) incentive structures ("economic institutions" the way Williamson understands them), (2) capital utilization, the latter being organized by incentive structures of one kind or another and (3) the outcomes of capital utilization for the agents involved; i.e., mutual gains (in societal perspective: the "wealth of nations").

For the purposes of these types of analysis, economics merely applies the model of economic man as a method, "... as a powerful tool to derive

[empirical and moral] implications at the group or macro level ...” (Becker 1993, 402). The prime purpose is to examine how incentive structures (“constraints”) and capital utilization – empirically and morally – perform even under the scrutiny of *homo economicus*, especially with regard to social, moral results for society as a whole, i.e., the generation of mutual gains, the “wealth of nations.” This applies not only to classical or neoclassical economics but to a much broader viewpoint, to mainstream economics in general, including many sub-fields as varied as institutional economics, constitutional economics, sociological economics, and so forth. Becker (1976, 1993), Buchanan (1987b, 54–5), Suchanek (1993, 3, 10), Homann (1994, 5), Abell (1995, 5), Vromen (1995, 199–200) or Wagner-Tsukamoto (2003, 39–43) provide detailed explanation of the above statement.

The model of economic man understood in this way *heuristically* abstracts from human nature in any empirical, behavioral sense: “A theoretical scheme on such a high level of abstraction ... makes people disappear from view and with them not only the motives and behavior of individuals but also the structure of social relations and differentiated collectives in society” (Blau 1976, 5). Surprising though this may seem to some social scientists, Blau’s argument along these lines was not for economics but for macro-sociology. Similar positions were also taken by Coleman (1990) and Suchanek (1992, 40–3) – and most interestingly, Smith (1776/1976, 25) himself strongly pointed at this too (as fully quoted above).

The important insight which can be derived from this is that the application of the model of economic man in mainstream economics is without doubt the wrong target for empirical and moral, behavioral criticism. Economics, as it is conventionally utilized, does not entertain a model of human nature that is open to empirical and moral criticism, at least not so with regard to the tool “*homo economicus*.” It is only when used for the purposes of behavioral sciences, such as behavioral economics, economic psychology, an economically oriented (micro)-sociology, socio-economics, or anthropological philosophy, that the model of economic man, understood as an empirical research tool, could be dismissed. However, this has to happen on *methodological grounds*, not by pitching the model of economic man against the empirically testable models of human nature of behaviorally oriented sciences.

It is imperative to understand in this instance that behavioral sciences conceptualize human nature in one way or another, *both* in empirical–theoretical *and* in instrumental, methodical, “heuristic” perspectives. In the following, my aim is to expand this insight by bringing in to the debate the philosophies of science of Popper and Lakatos and their ideas on problem dependence and research heuristics.

3.1 Popper's philosophy of science and the Adam Smith problem

Popper (1978, 129) asserted that scientists cannot understand reality as such. If attempted, they would quickly become lost because of complexity problems. Popper's (1977, 142–3, 1978, 350) references to “Occam's razor” and the “law of parsimony” are illustrative (See also Popper 1985, 361). He suggested that complexity reduction occurs in scientific research as a result of *problem dependence*, namely that “... every rational theory, no matter whether scientific or philosophical, is rational in so far as it tries to *solve a certain problem*” (1978, 199, emphasis as in original). Or as Wittgenstein (1975, 66, 77) seemingly similarly put this: “The meaning of a question is the method of answering it ... A question denotes a method for searching.” Those who find agreement with this argument include Machlup (1978, 224–5), Suchanek (1992, 1999), Hands (1993, 70), Boland (1994, 157–9) and Wagner-Tsukamoto (2003, 3–4). According to this understanding, empirical phenomena as such are rather insignificant when it comes to the organization of scientific research (Popper 1985, 360–1).

Popper (1985, 359) is very explicit in this regard, suggesting that it would be a mistake *for research on human society* to “animate” a “social model” i.e. to build a theory about human society, as I would call it, through the “human anima or psyche”: “We replace concrete psychological experiences (desires, hopes, tendencies) by abstract and typical situational elements, such as ‘aims’ and ‘knowledge’.” He called this the “rationality principle.” Popper's references to “aims” and “knowledge,” however, should not be misunderstood as some kind of re-entry into cognitive psychology or anthropology: “We must remember that the situation ... already contains all the relevant aims and knowledge, especially that of possible means for realizing these aims” (Popper 1985, 359). If, for instance, economic theory building involves cognitive categories, they are re-conceptualized in economic terms, such as human capital, to follow Becker's (1976) approach.

Popper developed the concept of the “rationality principle” for social science theory building through the “animating law”: that is to say the “principle of acting appropriately to the situation; clearly an almost *empty principle*” (Popper 1985, 359). In this way, he was able to conceptualize the rationality principle as a mere “methodological postulate” (Popper 1985, 25). Questions of empirical validity then have no significance: Popper (1985, 360–1) explicitly stated in this respect that it is of no relevance as to whether the “rationality principle” is empirically valid or false with regard to “actual”

human behavior.² Or, as he also put it: The rationality principle is a “kind of zero principle” (Popper 1985, 359).

So, starting with insights on the strict problem dependence of scientific research, Popper went on to link this issue of methodology to the “rationality principle” (for social science research). Popper argued in this manner in a comparatively conventional, classical economic tradition “... that it is sound methodological policy to decide not to make the rationality principle [i.e. the model of economic man] accountable, but the rest of the theory; that is the [situational] model” (Popper 1985, 362; see also Popper 1995, 1992, 355, 79–80, 1972, 178–80). In economics, this stance on methodology is supported by Becker (1976, 167), Langlois (1990, 692–4), Caldwell (1994, 141–4) or Hedstroem and Swedberg (1996, 133) and the other economists I quoted above.

What then are the precise implications for economics and the model of economic man? In Popper’s terms, the model of economic man constitutes the “empty (rationality) principle” and a “methodological postulate.” Economics is able to steer, when employing this model, theoretical, empirical and moral research through the situations and constraints (at “incentive structures,” at economic institutions in one way or another) that frame human interactions over capital exchange. With this understanding, the model of economic man becomes “merely” a pre-empirical, situation-driven calculus of self-interested choice.

Upon reaching Section 3.2 of this article, when setting out Lakatos’s philosophy of science I will return to this point, adding further depth to Popper’s insights on the rationality principle by clarifying the concept of the research heuristic.

Frequently, social scientists touch upon this issue of problem dependence. Machlup (1967, 30–1) does so in the conclusion of his article on the “correctness” of motivational assumptions in economic theory: “I conclude that the choice of the theory depends on the problem.” Or, with specific regard to the Adam Smith problem, Coase (1994, 113) noted that the TMS is a “study in human psychology,” whereas the WN is a “study of the organization of economic life.” Similarly, Campbell and Skinner (1982, 172) suggest that the WN was not about “man’s psychology” but that “self-regarding propensities,” as found in the WN, were important for discussing the “economic sphere.” Evensky (2005, 20–1) talked about different “motivating centers” for the TMS and the WN. Werhane (1991, 9) argued that “... differences in subject matter ... should account in part for alleged inconsistencies ...” between the TMS and the WN. A similar argument was used by Pack (1997, 136–8), Nieli (1986, 624),

² Clearly, Popper’s methodology of “falsificationism” does not target the rationality principle but empirical phenomena. Falsificationism, however, is methodologically informed and undergirded – empirically unquestioned – by the rationality principle. Lakatos, as I set out in Section 3.2, would analyze the rationality principle as a pre-empirical “research heuristic.”

and Brown (1994), who all implied that differences in subject matter could explain apparent inconsistencies between the TMS and the WN. Others touched on problem dependence when arguing that the WN is intentionally detached from the TMS as far as their respective views on human nature are concerned (Cropsey 1957) and that the TMS and the WN pursued entirely different explanations, one directly focused on human nature, whereas the other did not (Cummings 1969, chaps. 13 and 14).

However, as much as these authors continually highlighted differences in subject matter – or “problem dependence” – between the TMS and the WN, they did not clearly explain what kind of conceptual, methodological implications these would have regarding the portrayal of human nature, or to what extent “human nature” would become an “empty” principle, a “zero principle,” and a mere “methodological postulate” in the context of such research, as Popper had implied.

For the Adam Smith problem it has to be clarified that, as understood by Popper, economics as set out in the WN, empirically researches incentive structures and capital utilization only (the latter being organized by incentive structures), with the “wealth of nations” being the normative, ethical goal. For the purpose of this type of analysis, the model of economic man is applied as a “method” or “tool,” as Buchanan or Becker put it (See above), or the “empty rationality principle” and a mere “methodological postulate” as Popper described this.

This is a fundamental insight. It gives rise to the thesis that the model of economic man, as found in the WN, cannot be pitched against an empirical, moral, behavioral model of human nature in the TMS (or the empirically testable models of human nature that can be found in (socio-)psychology, micro-sociology, behavioral economics, socio-economics, or anthropological philosophy).³ Buchanan came close to the point I have made:

If one wishes to examine the extent to which a particular institutional order transforms private interest into public interest, it becomes entirely appropriate to focus on a model of

³ In contrast to research on “human society,” as Popper (1985, 359) put this, research on the human being as such, be it of a psychological, anthropological or behavioral philosophical nature, needs to empirically animate a model of the “psyche” in theory building and subject it to empirical research. Although even this type of behavioral research into actual human nature requires some kind of “empty principles” on human nature as methodological postulates (see Wagner-Tsukamoto 2003, chap. 3). Popper differentiates competing kinds of “rationality principles,” understood as methods, in this respect, contrasting research on human society, on the one hand, with Freudian psychology, on the other (Popper 1985, 359, 363–4). This has implications for our understanding of the Adam Smith problem too. For instance, Dupuy’s (2006, 121, 2004, 278) conceptualization of self-interest in relation to a morphogenetic principle is likely to reflect heuristic, methodological postulates of anthropological research rather than economic research which draws on the model of economic man, as it is conventionally understood, in the tradition of Buchanan, Becker, Friedman or Machlup, to name a few.

man in which private interest dominates. To model man as publicly motivated in making such a comparison would be to assume away the problem that institutional design involves – the problem that was central to Smith's purpose [in the WN].

(Buchanan 1987b, 62)

Buchanan quite explicitly raised methodological issues of problem dependence with regard to analyzing “human society” – even with respect to the WN: He talked about “institutional order” and “institutional design.”⁴ From here it is only a small step to fundamentally reassess the Adam Smith problem.

⁴ Buchanan's (1975) heuristic starting point for the analysis of the status quo of society is here the “natural distribution state”: the Hobbesian “war of all,” in which interactions among homo economici have escalated. In this regard, Smith gets close to Buchanan. A statement like the following underlines this: “Commerce, which ought naturally to be, among nations, as among individuals, a bond of union and friendship, has become the most fertile source of discord and animosity. The capricious ambition of kings and ministers has not, during the present and the preceding century, been more fatal to the repose of Europe, than the impertinent jealousy of merchants and manufacturers. The violence and injustice of rulers of mankind is an ancient evil. For which, I am afraid the nature of human affairs can scarce admit of a remedy” (Smith, 493). This is an extraordinary statement in which Smith meets modern constitutional economics in the vein of Buchanan (1975) – a research tradition that can be linked to ancient texts on society too (Wagner-Tsukamoto 2009a, 2010, 2013). This statement of Smith should not be read as a *positive* statement about *human nature* that somehow reconciled TMS and WN. I contest here Skinner (1979, 104) when he suggests that the WN's concept of the “nature of the social bond” built on the TMS. Rather, the above statement reflects a *normative* approach (“ought”) about *societal organization*, driving a methodological break between TMS and WN. Smith's normative starting point is here: “Commerce *ought naturally* to be, among nations, as among individuals, a bond of union and friendship” (emphasis added). In this regard, Macfie (1959, 212, 218–19) uncovers in the TMS “man's natural love of society” as the “social cement” of society and a sympathy-based, social theory of society (similarly Skinner 1979, 104). If such a “natural” situation indeed prevailed, we have no institutional economic or political economic problem of organizing society and interactions in society, through economic means. We have no economic governance problem, generally speaking. In this situation, to speak with Buchanan's (1975, 117) constitutional economics, one could possibly even argue that anarchy in its pure form should prevail as societal interaction mode. However, both Buchanan and Smith seem to be skeptical: Buchanan (1975, 117) outlines that *in the case that conflict arises* (e.g. property rights are somehow contested), pure anarchy as organizational mode fails and then either societal governance through a moral precepts approach is needed to sort out problems of conflict or alternatively (as Buchanan favors) societal governance through constitutional economic contract is the way forward. In the latter case, contested claims of interacting agents, which give rise to conflict, are resolved through (economic) rule structures of the state (and for this purpose, as Buchanan so clearly stressed, the homo economicus and ideas on destructive anarchy are applied as heuristic research methods). Can we find parallels to Smith's WN? As noted, the above statement is a normative one: Smith talks about a “bond of union and friendship” (in the WN) and “man's natural love of society” (in the TMS): They reflect, in Smith's normative thinking, an ideal mode for organizing societal activity. However, these

Many references can be found in the WN and in the TMS which suggest that Smith linked an exploration of human nature to different research problems in these two studies. Indeed, it can be seen that the WN was not interested in an exploration of human nature as such, whereas the TMS was. As noted, Smith (1776/1976, 25) explicitly stated that he disregarded “human propensities” and “human nature” as such in *the WN*. It is revealing in this respect that Smith did not refer even once to the TMS in the WN (Berry 2003, 185).

Furthermore, looking again at problem dependence, it has to be stressed that radically different research questions mark out the TMS and the WN. For the first four Books of the WN, Smith summarized as a research question: How can the revenue be explained that provided the annual consumption (“wealth”) for a people in different ages and nations? (Smith 1776/1976, 11) As an analysis of Smith’s contemporary society, the WN constituted a fundamental, institutional and constitutional critique of the then prevailing political system of the mercantilist society, which was heavily regulated by import–export restrictions, duties on many items, grants of monopoly powers to a selected few producers, and so forth (see, for instance, Skinner 1979, chap. 9, especially 216–21). As an analytical enterprise, Smith targeted human society in macro-perspective. Governance systems of one kind or another are investigated by Smith, and this type of situational analysis is methodologically undergirded by the rationality principle “*homo economicus*.”

statements already imply that “pure anarchy” as societal organization mode failed, in Smith’s conception too, since otherwise governance through a “bond of union and friendship” and “natural love” would not be needed. When referring to “union and friendship” and “man’s natural love of society,” Smith seemingly talks about what Buchanan called the “moral precepts” approach for governing society. Also, in the subsequent concluding part of the quotation, Smith explicitly raises conflict as a source and as a problem of societal organization: “Commerce . . . has become the most fertile source of discord and animosity.” Smith meets here Buchanan’s world of (self-)destructive anarchy *as starting point of analyzing societal ordering*. The Hobbesian “war of all” is invoked, as Buchanan makes explicit (see also footnote 1 above). In this situation, is Smith hanging on to a model of friendly, virtuous, sympathy-based human nature (methodologically and/or theoretically/empirically) for analyzing and resolving “discord and animosity” among nations? This is not the case, as outlined throughout my article with regard to Smith’s approach of organizing economic activity, institutional governance that affects international trade and institutional governance of society in general. Rather, his approach is essentially “economic” (grounded in the *homo economicus*). Poignantly put, Smith says in the above statement that the sympathy-based approach (of friendship, etc.) of the TMS is *not* applicable for questions of governance of society, as he discussed it in the WN. Especially when “friendship” and “natural love” have broken down (“discord,” “animosity”), as met by Smith’s conceptualization of the societal status quo of the mercantilist trade system, Smith’s economic approach, the WN, succeeds.

In clarifying the contrasting aims of the TMS and WN, the key research question of the TMS is already stated in its subtitle: What are the principles by which humans naturally judge conduct and character of neighbors and themselves? (Smith 1759/1966, iii) Whereas the WN is an analysis of economic governance of a society, the TMS is a moral philosophical study of personal, virtuous character and how the human mind stirs such a character (see also Skinner 1979, 13, 16). In this connection, Skinner (1979, 14–15) explicitly acknowledges that Smith investigated in a Humean empiricist tradition “human nature” as such, speaking of the “basic Humean hypothesis.” The research goal of the TMS is, as its title reminds us, to arrive at a *theory of moral sentiments*, which Smith accomplishes in the final part (VII) of the TMS. Smith (1759/1966, 391–2) then explicitly re-affirmed the nature and purpose of the TMS by further elaboration of his research questions and thus his research problem:

First, wherein does virtue consist – or what is the tone of temper, and tenor of conduct, which constitutes the excellent and praiseworthy character, the character which is the natural object of esteem, honour, and approbation? And secondly, by what power or faculty in the mind is it that this character, whatever it be, is recommended to us? ... [H]ow [does the mind] ... denominate the one right and the other wrong? ... [Is] virtuous character ... recommended to us by self-love ... that ... promotes our own private interest best?

I will return later to the final question in the above quotation since it is important for comparing both substantive and heuristic aspects of methodology of the TMS and the WN.

In addition to deducing Smith’s stance on problem dependence from his research questions in the TMS and the WN, he methodologically touches on research problems in his *Essays on Philosophical Subjects* (EPS) and in the *Lectures on Rhetoric and Belles Lettres* (LRBL). In the EPS, for instance, he talks about “wonders” (Smith 1869, 331–4) which stir up a philosopher or scientist: “If we can recollect many such objects which exactly resemble this new appearance [the wonder], and which present themselves to the imagination naturally, and as it were of their own accord, our Wonder is entirely at an end” (Smith 1869, 331, spelling as in original). In Popper’s terms, “wonders” can be reconstructed as “research problems.” I return to this issue of how Smith solved scientific problems, accounting for “wonders,” once I have set out Lakatos’s position on the heuristically organized nature of scientific problem solving. I then will also show how Smith in a seemingly pre-empirical, heuristic manner related “imagination” to a certain method of scientific thinking – he explicitly preferred the Newtonian method – and follow how he explained “wonders” in this way.

3.2 Lakatos's philosophy of science and the Adam Smith problem

As much as Popper made some very insightful contributions on the problem-dependent nature of research, he did not say much on how problem dependence was *operationally* linked to complexity reduction, although he came close when commenting on the “rationality principle” and that this principle had to be understood as an “empty,” “methodological postulate” (see above). The works of Lakatos, especially his proposals on research heuristics, considerably enhanced Popper's insights into this respect.

Lakatos (1978, 148) argued that a research heuristic is a problem-formulation and problem-solving apparatus that grounds, drives and undergirds a scientific research program *methodologically*. He states that the “... heuristic ... defines problems, foresees anomalies and turns them victoriously into examples according to a preconceived plan. ... It is primarily the ... heuristic which dictates the [researcher's] choice of his problems” (see also Lakatos 1970, 16–17, 93, 173). Backhouse (1994a, 7–10, 1994b, 173–4) and Blaug (1974, 155–7, 1994, 110–11, 114–15) further developed this line of argument.

Importantly, research heuristics reside “outside” a theory; they are of a sub-theoretical, pre-empirical and quasi-tautological nature (see Wagner-Tsukamoto 2003, 5–8 and the literature quoted there). Therefore, they are beyond empirical and moral scrutiny – of course, this is not so for the theoretical and practical results that are arrived at from the use of research heuristics.

As Becker exemplarily noted, the model of economic man has to be understood as a mere research method or research tool of economics (Further literature was quoted above). This insight can be analytically expanded by interpreting the model of economic man as a research heuristic and also defining Popper's concept of the rationality principle. With the heuristic “*homo economicus*,” economics focuses research problems theoretically and empirically on the situational analysis of incentive structures and how they efficiently and effectively govern mutually advantageous capital exchange. When understood as a research heuristic, the model of economic man as such is then beyond empirical and moral, behavioral scrutiny. The implication we derive from this is that the model of economic man, as we find it in the WN, cannot be the target for making comparisons about an image of human nature with an empirical and moral, behavioral model of human nature of the TMS.

As noted, any scientific research program seeks conclusions by drawing on research heuristics in order to organize, in a problem-dependent way, theory building and empirical research. This implies for behavioral sciences, e.g.

psychology, (micro-)sociology or behavioral economics, that they utilize both a heuristic model of human nature and a model of human nature that can be subjected to theory building and empirical testing. The former is, as in economic research, of a pre-empirical, sub-theoretical and quasi-tautological nature and methodologically organizes both theory building and practical intervention of behavioral research (Wagner-Tsukamoto 2003, chap. 3).

The heuristic model of human nature which we can make out in this respect, for example, for psychology is that of the “pathological, neurotic man” (Herzberg 1966, 170). Or for moral philosophy, we find the model of the “immoral” human being, even a model of the evil and sinful human being, as moral philosophy and theology focus on different aspects of this (Wagner-Tsukamoto 2009a, 2009b, 2010).⁵ Or, for sociology, we find the heuristic model of sociological man, which Dahrendorf (1973) characterizes, in a heuristic manner, as a “deliberately unrealistic fiction” (pp. 7, 50, 58, 78). This *duality* (or perhaps even multiplicity) of models of human nature found in behavioral research may have given rise to many misunderstandings between behavioral scientists and economists. In particular, the claim has to be discounted that economics, conventionally understood as already set out by Smith in the WN, subscribed to an empirically incorrect or even immoral image of human nature. The debate on the Adam Smith problem is particularly heavily influenced by this misunderstanding too, especially if we follow the approach of the unity schools.

Smith’s approach agrees to a very considerable extent with what modern economics would call institutional or constitutional analysis and intervention with a focus on situational governance. Most explicit are Books Three and Four of the WN. They explain economic progress in relation to certain types of institutional change and institutional innovation; Smith then links contemporary lack of economic progress to the institutions of the mercantilist society, which he was so critical of. At times, he even uses the notion of institutions and institutional reform (Smith 1776/1976, 511). Self-interest is the underlying, heuristic principle of this analysis. Or, as Buchanan (1975, 36) summarized it:

Markets will emerge more or less spontaneously out of the self-interested behavior of individuals, and the results will be beneficial to all members of the community. . . . The genius of the eighteenth-century philosophers (notably Mandeville, Hume, and Smith) lay in their discovery and application of this simple principle, which has been variously elaborated in modern economic theory, the principle which, directly or indirectly, served

⁵ Miller (1993, 24), for example, here complains that much Old Testament theology has been dismayed by the greedy and unfair character of Jacob – who so closely resembles the model of economic man, I would like to add. Such aspects of Jacob’s character may have to be read in heuristic perspective in the first place (Wagner-Tsukamoto 2009a, 2010, 2013).

as the basis for organizing institutions responsible for post-Enlightenment economic progress in the Western world.

(See also Buchanan 1975, 170–1, 1976, 271–7)

Smith may not have been as explicit as Mill, who characterized economic man as an abstraction (Mill 1831/1967, 321; see also Heyne 2008, 50–4), but Smith clearly sensed the abstract, pre-empirical, heuristic nature of the model of economic man in the WN. This is apparent in several different ways. First, and to repeat the important point made above, human nature and in particular the idea of self-interest as such is not to any degree at all an analytical or explanatory research problem of the WN. Rather, Smith takes “self-interest” as an empirically unquestioned – heuristic – principle to develop economic theory. He explicitly discarded the analysis of “human propensities” and “human nature” from the WN, right at its outset (Smith 1776/1976, 25).

This relates to a second point for theory building and practical intervention, for instance on political economic systems: Smith conceptualized only governance systems (“incentive structures”), capital exchange and how this impacted wealth creation in a society and among societies. Indeed, as far as Smith analyzed even the most extreme versions of self-interest, such as “bad morals,” or what Buchanan or Williamson would call predation and opportunism, he did so only by projecting it to his theoretical, empirical approach on situational governance analysis and wealth creation for society.

As an example, Smith (1776/1976, 641) explicitly stated that opportunistic, “private interest” behavior by the administrators of large, monopolistic colony companies was a result of the governance situation rather than poor character or self-interested, even selfish “human nature”:

I mean not ... by any thing which I have here said to throw any odious imputation upon the general character of the servants of the East India company, and much less upon that of any particular persons. It is the system of government, the situation in which they are placed, that I mean to censure, not the character of those who have acted in it. They acted as their situation naturally directed, and they who have clamoured the loudest against them would, probably, not have acted better themselves. ... Such exclusive [monopoly] companies ... are destructive to those which have the misfortune to fall under their government.

(See also Smith 1776/1976, 638–9, 819)

Equally explicit is another statement by Smith (1776/1976, 752):

As from irresistible moral causes, the greater part of proprietors [administrators, managers] of such a [large, or monopoly] company are, and necessarily must be ..., from the nature of things [being put to lead such a company], so perfectly indifferent about the happiness or misery of their subjects ... [and] the glory or disgrace of their administration.

These are not exceptional statements in the WN. Smith repeated this type of criticism (a) when discussing other large British and foreign monopoly companies (Smith 1776/1976, 570, 635–41, 741, 744–55); (b) when analyzing “vested interests” and the “interested falsehood” of mercantilist traders and manufacturers (Smith 1776/1976, 496, 499, 506, 517, 523); (c) when examining problems of agricultural management systems that rested on misaligned (self-)interests of land owners and “freemen” who work for land owners (Smith 1776/1976, 391); (d) when talking about the bad effects that large company size has on morals (Smith 1776/1976, 101; see also Smith 1776/1976, 795); and (e) when criticizing the system of university education and church organization for encouraging opportunistic behavior from their members (Smith 1776/1976, 760, 763, 788–90). The problem of managerialism, as Berle and Means (1932) referred to this issue much later, clearly surfaced in the WN in both managerial and political respects (See also Smith 1776/1976, 741).

I found Smith in these respects to be anything other than “cautious” and “elusive,” as claimed by Rothschild (2001, 66–7) regarding stating his opinion on the current political situation of mercantilist Britain.⁶ Although Smith’s purpose in the WN was clearly not to behaviorally “censure” or behaviorally reform the self-interested, even selfish character of economic agents for itself, he critiques the prevailing political, economic system in a very outspoken and direct manner. The decay of morals is empirically and morally analyzed and explained as a matter of circumstance (“government situation”), but not as a matter of selfish character or self-interested “human nature” as such.

In order to conduct this political and managerial “governance” analysis, Smith needed the idea of self-interest as an undergirding, heuristic principle (in addition to heuristically applying the idea of “discord,” “jealousy,” etc. to set out a societal interaction status; see footnote 4 above). Smith never considered giving up this heuristic principle of analysis, despite his explicit acknowledgment that negative forms of self-interest may be empirically very rare (Smith 1776/1976, 709; see also Smith 1776/1976, 26 when he comments on the empirical scarcity of good will and friendship as a foundation of exchange). This reveals that Smith, at least to some degree, was aware of the empirical irrelevance of heuristic ideas. (And as noted above, right at the outset of the WN, Smith (1776/1976, 25) explicitly turned away from empirically discussing human nature as such.)

⁶ At other times, Rothschild (2001, 2) states that Smith was interested in restoring freedom to economic policy and that he linked the invisible hand to institutional reform (Rothschild 2001, 148–9).

Equally, “good morals” – Smith (1776/1976, 101, 687) talked about, for example, “industrious” behavior – were traced by Smith to “everyone” striving for their own profit and self-interest. This was Smith’s consistent analytical, heuristic way of conceptualizing in the WN. In a subsequent step, the WN projected industrious behavior to larger societal goals, specifically the normative idea of *mutual gains*. This happened not only for those directly involved in an exchange but for society in general. Smith stated that the “wealth of nations” is at stake and not just the happiness of one selected nation or a few individuals (e.g. Smith 1776/1976, 566–7, 572–7, 612, 630).

The moral stature of the WN has to be deduced from this vantage point – with respect to Smith’s normative goal of institutional analysis and reform, and its objective of mutual gains (the wealth of nations). Many, even including informed interpreters of Smith tended to overlook this moral stance of the WN, e.g. Skinner (1979, 237) when he concludes on moral aspirations of the WN.⁷ In general, moral critique of economics should not be targeted at its underlying, heuristic model of human nature – the model of self-interest, even extreme

7 As noted, economics, in the classical understanding of Smith, is normatively geared toward the *wealth of nations*. It is not about wealth creation for an individual nation and even less so for a small group of people or even a single individual. Mandeville spoke of “public good”; Buchanan or Williamson referred to this normative issue as “mutual gains.” From here, economics’ image of human nature and moral status as a social science has to be deduced (Buchanan 1975, 36, 170–1, 1976, 271–7; see also Homann 1997, 1999; Wagner-Tsukamoto 2003, chap. 8, 2012; Heyne 2008). Clearly, economics has a distinctive, ethical understanding of “mutuality,” albeit a conceptually different one as compared with other scientific traditions, such as communitarianism (e.g. Etzioni 1988; or similarly Riha 1990, 58–9). It is clearly inaccurate to argue that economics in the tradition of Smith lacked a concept of mutuality or reciprocity or sociability, as Etzioni or Riha and others suggested. Some even diagnosed a “paradoxical simultaneity of ... conflict and community [mutuality, social reciprocity] in individual interests” for the WN (Werhane 1991, 167; see also Gramm 1980, 128). In economics, conventionally and classically understood, the normative vision of mutual gains steers self-interested agents to handle and resolve a claimed “paradoxical simultaneity of ... conflict and community” and this is channeled and organized through economic institutions and economic constitutions, as Smith was already aware of and as it was so fundamentally clarified by Buchanan and Williamson. Social, moral-behavioral constraints on self-interests as such are not needed to achieve this goal, as erroneously proposed by Gramm (1980, 129) and many other behavioral economists and socio-economists. In addition, many further ethical ideals can be attributed to economics. They can be derived by looking at the particular features that set out market interactions in a market economy, such as “invisible,” non-interfering democratic rulers over capital exchange, self-organizing social exchange, the motivational and cognitive autonomy of the individual, tolerance of value pluralism and the growth of knowledge and enlightenment (see chap. 8 of Wagner-Tsukamoto 2003; also Wagner-Tsukamoto 2009a, 2010, 2012). Behavioral critics frequently overlook such ethical features, as they were already clearly reckoned with by Smith in the WN.

kinds of opportunism. This model is only instrumentally, heuristically useful and necessary in the Smithsonian approach to economics.

As Smith so vehemently stressed, the “beauty” of this approach to institutional analysis and reform is that gains to society, both nationally and internationally, result unintentionally: “A revolution of the greatest importance to the public happiness, was in this manner brought about by two different orders of people, who had not the least intention to serve the public” (Smith 1776/1976, 418). Smith here rejects any idea that self-interest behavior (as heuristically abstracted through the *homo economicus*) aimed to directly serve the public. This also contests Macfie (1959, 220) that (a) economic man of the WN compared to prudent man of the TMS and (b) that both agents aimed at “service to society” (see my further comments on Macfie below too). Smith’s famous “invisible hand” quotations can be referred to at this point as well (Smith 1776/1976, 456, 687). These theory statements on situational governance, mutual gains as a normative goal of governance and self-interest as an underlying, heuristic principle of analysis mark out Smith’s approach in the WN.

Smith’s methodology as such remained comparatively implicit in the WN. To some extent, it has to be deduced from the way he stated and repeated ideas at a theoretical and normative level of analysis of the WN, and the way he talked about self-interest. He does not entertain in the WN an explicit methodology debate as for example, modern economists like Friedman, Buchanan or Becker did in their research. Still, as demonstrated above, from the way Smith stated his theoretical ideas and the way he integrated self-interest as a “non-empirical” but conceptual, heuristic principle of analysis into the WN, it is clear that the WN was not intended to be an empirical, behavioral character study of human nature.

However, it must be admitted that at times Smith enters, even in the WN, into a methodology debate. Smith (1776/1976, 26–7) famously declared that it is the self-interest of the butcher, brewer or baker which should them make exchange goods with customers. At a later point within the WN, he *explicitly transfers* this very statement of analysis to the discussion of free trade and goods exchange between manufacturing countries and wine-producing countries (Smith 1776/1976, 491–2). His argument then declared that exchange and trade among nations follows the same principle: self-interest, according to Smith, being the driving force for organizing exchange not only among “workmen” (the butcher, brewer and baker and their customers) but also among nations. This explicit transfer of principles of analysis from a micro-level to a macro-level is at least of a quasi-methodological nature. In this way, Smith examined any “industrious behavior,” organized either through the market or through non-market exchange, by heuristically grounding analysis in the idea of self-interest.

We find another quasi-methodological statement in the WN when Smith (1776/1976, 493–4) speaks disparagingly of the mercantilist interests of some traders and manufacturers:

In every country it always is and must be the interest of the great body of the people to buy whatever they want of those who sell it cheapest. The proposition is so very manifest, that it seems ridiculous to take any pains to prove it; nor could it ever have been called in question, had not the interested sophistry of merchants and manufacturers confounded the common sense of mankind. Their interest is, in this respect, directly opposite to that of the great body of the people.

Smith's reference to "sophistry" – a flawed method of argumentation, a fallacy, casuistry – again classifies at least as a quasi-methodological statement. Had he put forward this idea in response to philosophical or other scientific supporters of the mercantilist system (rather than in response to "practical" supporters of this system, such as certain merchants and manufacturers), he would have entered into an explicit methodology debate. Nevertheless, Smith's argument against sophistry has at least quasi-methodological connotations. Also, Smith again argued, in the above quotation, that self-interest as a motivating force for exchange does not need any empirical proving. This underlines again the pre-empirical, heuristic nature of this principle in the WN.

Although Smith did not conduct an explicit methodology debate in the WN, his thinking in the WN clearly reveals that self-interest is not an explanatory variable which needed to be empirically and morally scrutinized. For some of his other studies, most notably the EPS and the LRBL, a methodology debate on research heuristics can be more explicitly reconstructed – and this can be projected back to his heuristic treatment of the idea of self-interest in the WN. In the following I elaborate on this.

When I discussed Popper and research problems, I noted that Smith (1869, 333, 336, 344, 352) spoke in the EPS of "wonders." Smith argued that philosophy and science need to account for wonders – through "imagination" and an "imaginary machine": A simple but not "intricate or complex imaginary machine" would be used to explain "two seemingly disjointed appearances" (Smith 1869, 352–3). His two key heroes of methodology here were Copernicus and Newton; he discussed them, in the EPS, when analyzing the history of scientific progress in astronomy (Smith 1869, 358, 378–82).

Smith was in this respect clearly aware of the nature and structure of "scientific revolutions" (Schliesser 2005, 704–05; Skinner 1979, 35). He discussed in the EPS various principles such as how "imagination" and "method" could drive a process of accounting for "wonders" and how this process would improve over time (generating simpler explanations; explaining all features/

previous discrepancies of a wonder; etc.). His language and terms can be translated into concepts of research problems (wonders; see above) and a heuristic problem-solving apparatus (imagination, methods).

Looking closer at Smith's understanding of science we can see that he was aware of specification tendencies of emerging sciences, for instance, of astronomy. In line with such specification tendencies, astronomy began, in Smith's understanding, to emancipate and separate itself from common sense and "other" philosophical inquiries.⁸ In the LRBL, Smith further argued that this increasing specification process was largely caused by the growing heuristic grounding of emerging sciences and by a turning away from the empiricist Aristotelian (Greek) method, which "... go[es] over the different branches [of phenomena] in the order they happen to be cast up to us, giving a [different] principle, commonly a new one, for every phenomenon" (Smith 1762–3/1983, 145). In contrast to that approach, Smith interpreted and endorsed the Newtonian method as follows:

[I]n the manner of Sir Isaac Newton, we may lay down certain principles known or proved, in the beginning, from whence we account for the several phenomena, connecting all together by the same chain. This latter which we may call the Newtonian method is undoubtedly the most philosophical, and in every science, whether of Morals or Natural Philosophy, etc., is vastly more ingenious, and for that reason more engaging, than the other. It gives us a pleasure to see the phenomena which we reckoned the most unaccountable all deduced from some principle (commonly, a well-known one) and all united in one chain, far superior to what we feel from the unconnected [Aristotelian] method, where everything is accounted for by itself, without any reference to the others.

(Smith 1762–3/1983, 145–6)

This discounts the purely empirical approach of the Aristotelian method, marking out Smith as a very strong skeptic of the Greek method, in my view a much stronger, "pre-empirical" skeptic than attested to by Schliesser (2005, 727) or by Campbell (1975, 80). Importantly, with regard to the Newtonian method, Smith emphasized its pre-empirical, principle-based heuristic nature – a "known or proved" principle, "commonly, a well-known one" providing the starting point for theory building and empirical research. This links well with Popper's understanding of the insignificance of empirical phenomena as such for starting up scientific research, which he explained in relation to problem dependence and the "empty" rationality principle. It also links well to Lakatos in relation to the role of research heuristics in scientific problem solving.

⁸ In the *History of Astronomy* (EPS), he touched on this issue. Smith's philosophy of science could have made more explicit at this point that "different" sciences began to use very different – heuristic – principles to account for "rules and phenomena."

Smith's reference in the LRBL to a "commonly, well-known principle," whose empirical validity as such was not the object of investigation in a certain scientific research project, can be projected to the way he applied the idea of self-interest in the WN. He then followed the Newtonian method, rather than the Greek method, applying a "well-known" principle – the idea of self-interested behavior – in order to explain many activities concerning the organization of society, and he used, in agreement with my argument (as analyzed through many examples throughout this article), the idea of self-interest in a rather consistent, heuristic manner only. This qualifies, at least partially, Schliesser's (2005, 720) comment that the EPS used predominantly a "language of truth and reality." My argument also questions Rothschild (2001, 237–8) who asserted that the WN was methodologically unsystematic. She developed this criticism by using Turgot's argument who upheld the empiricist Aristotelian method for scientific analysis, critiquing Smith in this respect. Smith may appear to be unsystematic if scrutinized with the empiricist Aristotelian method, but this is certainly not true from the perspective of the Newtonian method.

Equally, I disagree with proposals of the unity school, for instance Macfie (1959, 217, 219–20) that "prudent man" of the TMS *methodologically* corresponds to "self-interested man" of the WN. In my view, it is significant that Smith conceptualized "prudent man" in the TMS as the spectator who showed impartial, rational sympathy: This construct is as an integral element of the TMS's theory of human nature that was to be empirically scrutinized. And in this sense, Smith is clearly at this point close to empiricism (as is Macfie 1959, 220; or similarly, Skinner 1979, 104–05). In contrast, "self-interested man" of the WN is "merely" a research method, which, so Smith vehemently stressed, is *not* to be empirically analyzed (in the WN). It can be viewed as the "empty rationality principle" in Popper's terms or a "pre-empirical research heuristic" in Lakatos's language (see also above). Therefore, a clear methodological line can be drawn between "prudent man" of the TMS and "self-interested man" of the WN. Interestingly, Macfie (1959, 213) admits that Smith's explicit focus on sympathy in the TMS prevented him from setting out an adequate and explicit theory of "social life" in the TMS – but not so in the WN, so my thesis, because of a methodological break in modeling human nature (see also footnote 4 above).⁹

⁹ I question in this regard suggestions that Smith based both TMS and WN on the Newtonian method. Skinner (1979, 38), for example, acknowledges in this regard that the TMS is grounded in an empiricist principle: "a propensity natural to all men"; or similarly, Skinner (1979, 35) refers to the "imagination of psychological needs" as foundations of Smith's inquiry in the TMS. Such conceptualizations share, from a methodological point of view, very little with a heuristic, pre-empirical reading of the organization of science and philosophy, as this article set out by drawing

The method of applying the principle of self-interest to social analysis was not “invented” by Smith. Mandeville had popularized it in his book the *Fable of the Bees*, which Smith (1759/1966, 451–6) initially, in the TMS, was highly critical of (but then in the context of a moral philosophy of virtuous behavior; see also above).¹⁰ However, in the WN Smith, seemingly contrary to his earlier criticisms, appeared to have been inspired by many of Mandeville’s insights, as for instance, noted by Goldsmith (1988, 604–05; see also the Buchanan quotation above). Smith even then knew that such a “transfer” of ideas often drove scientific revolutions. He commented in the EPS on the process and causes for paradigm shifts, that a revolutionary idea, despite having been discovered a long time ago, often spanned many generations of researchers before eventually reaching fruition as a full theory. For instance, in his discussion of the history of astronomy, he referred to Plutarch who had anticipated many of Copernicus’s ideas. When pioneering the WN, he drew in a similar manner on Mandeville, although he did not explicitly acknowledge this. Even so, it can be surmised that his knowledge of the nature of paradigm shifts, which he gained through his reflections on the history of astronomy, helped him to transfer knowledge from Mandeville’s studies to his own work on economics.

on Popper and Lakatos. In order to argue that the TMS was also grounded in the Newtonian method a *constructive* philosophical principle on human nature (human anthropology) needs to be set out – pre-empirically, heuristically. Such a principle then could methodologically instruct a theory of virtuous, sympathy-based human nature for the TMS (which then can also be empirically examined and “tested”). More recent moral philosophy has set out *explicitly* such heuristic statements, before moving on to theoretically and empirically examine and conceptualize “true” human nature (e.g. Nietzsche 1903, or Gehlen 1962; for a review, see Wagner-Tsukamoto 2003). For instance, Nietzsche speaks of the human being as the “not yet determined animal,” or Gehlen talks of “the human being who self-identifies and self-determines itself.”

10 Smith’s criticism of Mandeville in the TMS may have been invited for a good reason: Mandeville phrased many of his arguments on self-interest, and selfish, vain behavior in rather empiricist, behavioral, non-heuristic terms. Mandeville, in this respect, provoked a behavioral, empiricist moral philosophy, as followed by Smith in the TMS. Only in the WN did Smith begin to methodologically “see through” this issue. Nevertheless, Smith’s sharp criticism of Mandeville in the TMS is indicative that at this point in time he did neither follow the principle-based approach of the Newtonian method for the TMS nor did he project the Newtonian method to Mandeville’s application of ideas on self-interest in the *Fable of the Bees*. If Smith had applied the Newtonian method already then he should have seen through Mandeville’s comparatively naïve empiricism for formulating ideas on self-interest. Only much later, for instance Smith (1776/1976, 25), he made explicitly clear that self-interest was not to be empirically explored but was an unquestioned principle (for the purpose of the WN, as set out by its specific research questions and research problems). This thesis has been discussed throughout this article with regard to Smith’s conceptual approach in the WN.

In stark contrast to the WN, the TMS *does* entertain at a theoretical level a behaviorally *and* empirically testable model of human nature, but this is not a “principle” or “method” in the sense explained by Smith for the Newtonian method. In the TMS, human nature is not only empirically examined but also morally scrutinized, specifically in relation to concepts of virtue, passion, empathy or sympathy. Smith was clearly aware of such an “empiricist” model of human nature in the TMS, which both in substance and method followed the Greek tradition. I discussed the research questions of the TMS above, especially those of part VII, wherein Smith set out his theory of moral sentiments. He then also explicitly asked whether self-interest could be the driving force that could account for virtuous behavior: “[Is] the virtuous character recommended to us by self-love . . . that . . . promotes our own private interest?” (Smith 1776/1976, 392) Smith’s own answer to this question was dismissive: He discounted self-interest as a motivating force for virtuous conduct, instead asserting for the TMS that a fuller consideration of human nature – “some principle in human nature, such as a modification of sympathy” – would account for virtuous conduct (Smith 1759/1966, 391). His theory of moral sentiments, as outlined in the TMS in the final sections of part VII (especially 472–80), then went on to discuss such virtuous workings of human nature. And as noted, Smith was very critical of Mandeville’s concept of self-interest in the TMS.

The TMS was then in this respect a rather typical theory in the tradition of a moral philosophy or a (moral) “study in human psychology,” as Coase (1994, 113) correctly put it (Similarly Skinner 1979, 16, 18). Human nature is empirically, theoretically and morally analyzed and explained. However, the WN is not in any way such a study of virtuous character and human nature, as I have outlined in detail. Economics, conventionally and classically understood in the tradition of Smith’s WN, does not entertain an empirical, behavioral model of human nature for itself as far as theory building and practical intervention are concerned. The above discussion and quotations from the WN, EPS and LRBL have helped to forcefully underline this point. The image of human nature and the moral status of the WN needs to be deduced differently, i.e. from theoretical and practical results, the research program of economics yields, through concepts such as (a) mutual gains (“public good,” the “wealth of nations” as unintended interaction outcome); (b) incentive structures (“systemic governance” through economic institutions, which lay down morals in institutional structures that bind all economic agents); and (c) through capital utilization in market interactions (the transfer of morals into “ethical capital” that can be traded on markets). Points (a) and (b) were already clearly seen by Smith (see Viner 1927; Buchanan 1975; Reisman 1998; Homann 1997, 1999; Luetge 2005; Heyne

2008; Wagner-Tsukamoto 2012); however, point (c) was not yet conceptualized by Smith (Wagner-Tsukamoto 2007, 2012).

4 Conclusions

Smith today still stands out but not primarily because he wrote the TMS, being a moral philosopher of human nature that followed in the footsteps of Hutcheson. Rather, Smith's name is stamped in history because he was the pioneer and founding father of the economic approach, as described in the WN. Smith knew that the WN was not "portraying" human nature when he invoked the idea of self-interest. Still, Smith was comparatively implicit on methodology in the WN (but less so in the EPS and the LRBL, especially when he commented on the Newtonian method). We have to be lenient in this respect, especially since a methodology of economics was at best only just beginning to emerge in his day. We can be less forgiving to modern, heterodox or behavioral economists, socio-economists, behavioral scientists and philosophers of human nature who criticize the model of economic man simplistically on empirical, behavioral grounds as an actual motivating force of human behavior. Simon, Coase, Sen, Williamson or Etzioni all can be regarded as a part of this group. They largely critique the idea of self-interest in the economic approach as an incomplete and empirically, behaviorally flawed image of human nature. This critique ignores fundamental methodological (problem-dependent and heuristic) differences regarding the modeling of human nature in the various social science research programs.

The article developed its methodological arguments regarding the Adam Smith problem through concepts of modern philosophies of science, i.e. Popper's and Lakatos's works, and the studies of economists who have explicitly stressed the non-empirical nature of the homo economicus, such as Machlup, Friedman, Buchanan, Becker, Homann or Heyne, to name but a few. Could we judge such methodological reconstruction of Smith's works through modern, contemporary science and philosophies of science as anachronistic and inappropriate in any sense? In my view, this stance cannot be upheld for various reasons: First, Smith's arguments, e.g. in the WN on the non-empirical nature of the idea of self-interest, on the "opportunistic" and odious character of organization members, on sophistry, etc., easily lend themselves to methodological reconstruction. The rational persuasiveness and conceptual fruitfulness of the reconstruction undertaken in this article – I suggest – speaks for itself, clarifying Smith's research methods. I support methodological pluralism in this respect and others may aim to reconstruct Smith differently. Such debate then contests arguments. Second, the economists referred to above see themselves strongly

grounded in the research tradition of Smith. Third, if we rejected the reconstruction of “older” theory, such as Smith’s TMS and WN from the eighteenth century, through modern theory as “anachronistic,” just because they emerged at different points in time, we could basically immunize any “older” theory from critique through more recent philosophical or scientific theory. This would hinder rather than support the progress of philosophy and science.

A key argument of the article was that only a change in methodology – from the empiricist, behavioral Greek method, as originally followed by Smith in the TMS, to the heuristically inspired Newtonian method in the WN – could enable Smith to pioneer a new approach to political economy, what we now know today as “the economic approach” (conventionally understood). Smith was aware that the WN reflected a deep break with previous, behaviorally oriented, philosophical research on human nature (as he had conducted himself in the TMS) and he clearly understood the methodological implications of this step away from the tradition of his time.

The article projected this change in methodology to the Adam Smith problem, arguing that the Adam Smith problem can be resolved on methodological grounds by accessing the philosophies of science originated by Popper and Lakatos. The key thesis that subsequently emerged here showed that concepts of human nature are methodologically treated quite differently in the WN as compared with the TMS. The article further emphasized that the model of economic man in the WN is primarily a heuristic method and not an empirical, behavioral statement about human nature and even less a moral expectation regarding how human beings should behave.

This insight has manifold implications for a methodological reconstruction and methodological resolution of the Adam Smith problem. On the grounds of problem dependence, I acknowledge methodological differences in the modeling of human nature between the TMS and the WN. In particular, I dispute the notion that both Smith’s behavioral ethics that he set out in the TMS, and Smith’s economic research, which he pioneered in such a ground-breaking way in the WN, drew from the same, empirically “correct” and morally agreeable, behavioral image of human nature.

Purely empirical and moral behavioral evaluation strategies of Smith’s economic work, as of the economic approach in general, reflect a methodologically primitive and comparatively naïve form of anthropological holism and empiricism that overlooked issues of problem dependence and the heuristic nature of scientific research programs. Aristotelian empiricism is an example. Popper (1957, 70, 87) even spoke in this respect of “pre-scientific” criticism, especially when an empiricist, behavioral critique of the TMS, which explores human nature for itself, is projected onto the essentially non-behavioral research program that Smith set

out in the WN. Regarding the idea of pre-scientific criticism, the works of Buchanan (1991, 18) or Meyer (1995, 12–14, 303–05) could also be referred to.

At times, behaviorally oriented scientists and philosophers have touched upon the issue of problem dependence and research heuristics. For instance, Coase (1994, 113) famously noted that the TMS reflects a moral “study in human psychology,” whereas the WN is a “study of the organization of economic life.” I have already mentioned further examples above. However, such fundamental insights were not followed up regarding methodological implications on the problem-dependent and heuristic nature of certain concepts of scientific research, such as the model of human nature.

Moral philosophy or, similarly, behavioral economics, economic psychology or an economically oriented (micro-)sociology apply *not only* a heuristic model of human nature *but also in addition* a model of human nature in theory building and practical intervention, which is empirically testable (see Wagner-Tsukamoto 2003). For the works of Adam Smith, this is seen to be the case for the TMS as well. We find in such studies a *duality* of heuristic as well as theoretical/empirical models of human nature. In contrast, in economic research, classically and conventionally understood, a model of human nature *only* plays a pre-empirical, methodological, heuristic role for undergirding and instructing situational theory building and practical intervention (regarding capital utilization that is governed by incentive structures).

On the grounds of the methodological reconstruction of the Adam Smith problem put forward in this article, I have found areas of both agreement and disagreement in certain respects, with both the inconsistency school and the unity (or consistency) schools regarding the Adam Smith problem. I agree with the inconsistency school that this school was correct when suggesting that there is a fundamental difference between the TMS and the WN. The article illuminated this difference by suggesting that the image of human nature of the TMS is “part of” the actual, theoretical and empirically testable approach of this treatise, whereas the self-interested model of economic man of the WN reflects the pre-empirical, heuristic problem-solving apparatus of economics. Despite this, I fundamentally disagree with the inconsistency school regarding its assertion that the portrayal of human nature in the TMS and the WN could be pitched at the *same* methodological level, for instance through anthropological philosophy, and therein at the level of actual theoretical concepts and their empirical testing. While this is certainly true for the TMS, this is definitely *not* the case for the WN.

I also agree with some aspects of the position taken by the unity schools on the Adam Smith problem, namely regarding the *final diagnosis* that there was no inconsistency problem between the TMS and the WN. This article developed this proposal further by differentiating the heuristic nature of the model of economic

man in the WN from the empirically testable role a model of human nature plays in theory building and practical intervention in the TMS. However, in contrast to the unity schools, my analysis of the Adam Smith problem still allows for considerable differences between the image of human nature of the TMS and the WN – primarily at an empirical and a moral, behavioral level of portraying human nature. The article very clearly rejected any attempts by the different types of unity schools either to read the same virtuous, passionate or sympathetic image of human nature into the WN, as it dominates the TMS, or to read identical concepts of self-love and self-interest, in empirical, behavioral terms, into both studies.

It does seem remarkable to me that neither Adam Smith scholarship nor researchers on economic methodology had previously linked issues of problem dependence and research heuristics to the Adam Smith problem. This is all the more surprising in light of the many references we find in the WN and in the TMS that support this argument. Interpreted in this way, the Adam Smith problem is problematic no longer. “Inconsistencies” between the TMS and the WN are acknowledged as a matter of both works developing rather different research programs. Because of this, they apply different research heuristics, as reflected by their different heuristic models of human nature (in addition to different concepts at the level of theory building and practical intervention). A new school of thought on the Adam Smith problem emerged which I referred to as the “difference school.” This school contested on methodological grounds both the inconsistency and unity schools. The difference school stresses the lack of any real *problematic* nature pertaining to the Adam Smith problem. Following this approach to the Adam Smith problem, we neither diagnose “inconsistency” nor subscribe to attempts at “unity” but instead accept methodologically necessitated difference between the TMS and the WN as the correct interpretive method. Studied in this way, the Adam Smith problem finds a methodological resolution.

References

- Abell, P. 1995. “The New Institutionalism and Rational Choice Theory.” In *The Institutional Construction of Organizations: International and Longitudinal Studies*, edited by W. R. Scott and S. Christensen, 3–14. London: Sage.
- Backhouse, R. E. 1994a. “Introduction: New Directions in Economic Methodology.” In *New Directions in Economic Methodology*, edited by R. E. Backhouse, 1–24. London: Routledge.
- Backhouse, R. E. 1994b. “The Lakatosian Legacy in Economic Methodology.” In *New Directions in Economic Methodology*, edited by R. E. Backhouse, 173–91. London: Routledge.
- Becker, G. S. 1976. *The Economic Approach to Human Behavior*. Chicago, IL: The University of Chicago Press.

- Becker, G. S. 1993. "The Economic Way of Looking at Behavior." *Journal of Political Economy* 101:385–409.
- Berle, A. A. Jr., and G. C. Means. 1932. *The Modern Corporation and Private Property*. New York: Macmillan.
- Berry, C. J. 2003. "[Review of] James R. Otteson, *Adam Smith's Marketplace for Life*." *Journal of Scottish Philosophy* 1:184–7.
- Blau, P. M. 1976. "Introduction: Parallels and Contrasts in Structural Inquiries." In *Approaches to the Study of Social Structure*, edited by P. M. Blau, 1–20. London: Open Books.
- Blaug, M. 1974. "Kuhn vs. Lakatos or Paradigms vs. Research Programmes in the History of Economics." In *Method and Appraisal in Economics*, edited by S. J. Latsis, 149–80. Cambridge: Cambridge University Press.
- Blaug, M. 1994. "Why I Am Not a Constructivist: Confessions of an Unrepentant Popperian." In *New Directions in Economic Methodology*, edited by R. E. Backhouse, 109–36. London: Routledge.
- Boland, L. A. 1994. "Scientific Thinking without Scientific Method: Two Views of Popper." In *New Directions in Economic Methodology*, edited by R. E. Backhouse, 154–72. London: Routledge.
- Brown, V. 1994. *Adam Smith's Discourse: Canonicity, Commerce and Conscience*. London: Routledge.
- Buchanan, J. M. 1975. *The Limits of Liberty: Between Anarchy and Leviathan*. Chicago, IL: University of Chicago Press.
- Buchanan, J. M. 1976. "Public Goods and Natural Liberty." In *The Market and the State: Essays in Honour of Adam Smith*, edited by T. Wilson and A. S. Skinner, 271–86. Oxford: Clarendon Press.
- Buchanan, J. M. 1987a. "The Constitution of Economic Policy." *American Economic Review* 77:243–50.
- Buchanan, J. M. 1987b. *Economics between Predictive Science and Moral Philosophy*. College Station, TX: Texas A&M University Press.
- Buchanan, J. M. 1991. *The Economics and the Ethics of Constitutional Order*. Ann Arbor, MI: University of Michigan Press.
- Caldwell, B. J. 1994. "Two Proposals for the Recovery of Economic Practice." In *New Directions in Economic Methodology*, edited by R. E. Backhouse, 137–53. London: Routledge.
- Campbell, R. H., and A. S. Skinner. 1982. *Adam Smith*. London: Croom Helm.
- Campbell, T. D. 1971. *Adam Smith's Science of Morals*. London: Allen & Unwin.
- Campbell, T. D. 1975. "Scientific Explanation and Ethical Justification in the *Moral Sentiments*." In *Essays on Adam Smith*, edited by A. S. Skinner and T. Wilson, 68–82. Oxford: Clarendon Press.
- Coase, R. H. 1994. *Essays on Economics and Economists*. Chicago, IL: University of Chicago Press.
- Coleman, J. S. 1990. *Foundations of Social Theory*. Cambridge, MA: Harvard University Press.
- Collins, D. 1994. "The Fall of Business Ethics in Capitalist Society: Adam Smith Revisited." *Business Ethics Quarterly* 4:519–33.
- Cropsey, J. 1957. *Polity and Economy: An Interpretation of the Principles of Adam Smith*. The Hague: M Nijhoff.
- Cumming, R. D. 1969. *Human Nature and History: Vol. II*. Chicago, IL: University of Chicago Press.
- Dahrendorf, R. 1973. *Homo Sociologicus*. London: Routledge & Kegan Paul.

- Dupuy, J.-P. 1990. "Deconstruction and the Liberal Order." *SubStance* 62/63:110–24.
- Dupuy, J.-P. 1993. "A Reconsideration of Das Adam Smith Problem." *Stanford French Review* 17(1):45–57.
- Dupuy, J.-P. 2004. "Intersubjectivity and Embodiment." *Journal of Bioeconomics* 6:275–94.
- Dupuy, J.-P. 2006. "Invidious Sympathy in the *Theory of Moral Sentiments*." *Adam Smith Review* 2:98–123.
- Etzioni, A. 1988. *The Moral Dimension: Towards a New Economics*. New York: Free Press.
- Evensky, J. 1987. "The Two Voices of Adam Smith: Moral Philosopher and Social Critic." *History of Political Economy* 19:447–68.
- Evensky, J. 1993. "Adam Smith on the Human Foundation of a Successful Liberal Society." *History of Political Economy* 25:395–412.
- Evensky, J. 2005. *Adam Smith's Moral Philosophy*. Cambridge: Cambridge University Press.
- Friedman, M. 1953. *Essays in Positive Economics*. Chicago, IL: The University of Chicago Press.
- Gehlen, A. 1962. *Der Mensch: Seine Natur Und Stellung in Der Welt [The Human Being: Its Nature and Place in the World]*. Frankfurt: Antheneion.
- Georgescu-Roegen, N. 1971. *The Entropy Law and Economic Progress*. Cambridge, MA: Harvard University Press.
- Gide, C., and C. Rist. 1915. "A History of Economic Doctrines: From the Time of the Physiocrats to the Present Day." In *Early Histories of Economic Thought 1824–1924 (2000 Edition)*, edited by R. E. Backhouse, vol. 8. London: Routledge.
- Göçmen, D. 2007. *The Adam Smith Problem*. London: Tauris Academic Publishers.
- Goldsmith, M. M. 1988. "Regulating Anew the Moral and the Political Sentiments of Mankind: Bernard Mandeville and the Scottish Enlightenment." *Journal of the History of Ideas* 49:587–606.
- Gramm, W. S. 1980. "The Selective Interpretation of Adam Smith." *Journal of Economic Issues* 14:119–42.
- Grampp, W. D. 1948. "Adam Smith and the Economic Man." *Journal of Political Economy* 56:315–36.
- Griswold, C. 1999. *Adam Smith and the Virtues of Enlightenment*. Cambridge: Cambridge University Press.
- Haakonssen, K. 2002. "Introduction." In *The Theory of Moral Sentiments [Adam Smith]*, edited by K. Haakonssen, vii–xxiv. Cambridge: Cambridge University Press.
- Hands, D. W. 1993. "Popper and Lakatos in Economic Methodology." In *Rationality, Institutions and Economic Methodology*, edited by U. Mäki, B. Gustafsson, and C. Knudsen, 61–75. London: Routledge.
- Hayek, F. A. 1949. *Individualism and Economic Order*. London: Routledge and Kegan Paul.
- Hedstrom, P., and R. Swedberg. 1996. "Rational Choice, Empirical Research, and the Sociological Tradition." *European Sociological Review* 12(2):127–46.
- Heilbroner, R. L. 1982. "The Socialization of the Individual in Adam Smith." *History of Political Economy* 14:427–39.
- Herzberg, F. 1966. *Work and the Nature of Man*. London: Staples Press.
- Heyne, P. 2008. *Are Economists Basically Immoral? and Other Essays on Economics, Ethics, and Religion*, edited by G. Brennan and A. M. C. Waterman. Indianapolis: Liberty Fund.
- Hildebrand, B. 1848. *Die Nationaloekonomie Der Gegenwart Und Zukunft*. Frankfurt: J. Ruetten.
- Hodgson, G. M. 1988. *Economics and Institutions: A Manifesto for a Modern Institutional Economics*. Cambridge: Polity Press.

- Hodgson, G. M. 1993. "Evolution and Institutional Change: On the Nature of Selection in Biology and Economics." In *Rationality, Institutions and Economic Methodology*, edited by U. Mäki, B. Gustafsson, and C. Knudsen, 222–41. London: Routledge.
- Hodgson, G. M. 1998. "The Approach of Institutional Economics." *Journal of Economic Literature* 36:166–92.
- Homann, K. 1990. "Ökonomik Und Ethik," Conference Paper 5th Symposium "Kirche heute", Augsburg, Germany.
- Homann, K. 1994. "Homo Oeconomicus Und Dilemmastrukturen." In *Wirtschaftspolitik in Offenen Volkswirtschaften*, edited by H. Sautter, 387–411. Göttingen, Germany: Vandenhoeck and Ruprecht.
- Homann, K. 1997. "Sinn Und Grenze Der Ökonomischen Methode in Der Wirtschaftsethik." *Volkswirtschaftliche Schriften* 478:1–42.
- Homann, K. 1999. "Zur Grundlegung Einer Modernen Gesellschafts-Und Sozialpolitik." In *Sozial Marktwirtschaft Im Nächsten Jahrtausend*, edited by U. Blum, W. Esswein, E. Greiple, H. Hereth, and S. Müller, 119–48. Stuttgart: Schäffer-Poeschel.
- Hutchinson, T. 1976. "The Bicentenary of Adam Smith." *Economic Journal* 86:481–92.
- Jensen, M. C., and W. H. Meckling. 1994. "The Nature of Man." *Journal of Applied Corporate Finance* 7(2):4–19.
- Lakatos, I. 1970. "Falsification and the Methodology of Scientific Research Programmes." In *Criticism and the Growth of Knowledge*, edited by I. Lakatos and A. Musgrave, 91–196. Cambridge: Cambridge University Press.
- Lakatos, I. 1978. *The Methodology of Scientific Research Programmes*. Cambridge: Cambridge University Press.
- Langlois, R. N. 1990. "Bounded Rationality and Behaviouralism: A Classification and Critique." *Journal of Theoretical and Institutional Economics* 146:691–5.
- Luetge, C. 2005. "Economic Ethics, Business Ethics and the Idea of Mutual Advantages." *Business Ethics: A European Review* 14(2):108–18.
- Macfie, A. L. 1959. "Adam Smith's *Moral Sentiments* as Foundation for His *Wealth of Nations*." *Oxford Economic Papers* 11:219–28.
- Machlup, F. 1967. "Theories of the Firm: Marginalist, Behavioral, Managerial." *American Economic Review* 57(1):1–33.
- Machlup, F. 1978. *Methodology of Economics and Other Social Sciences*. New York: Academic Press.
- March, J. G. 1978. "Bounded Rationality, Ambiguity, and the Engineering of Choice." *Bell Journal of Economics* 9:587–608.
- Meyer, M. 1995. *Of Problematology: Philosophy, Science, and Language*. Chicago, IL: The University of Chicago Press.
- Mill, J. S. 1831/1967. *Collected Works of John Stuart Mill*. Toronto, ON: University of Toronto Press.
- Miller, G. P. 1993. "Contracts of Genesis." *Journal of Legal Studies* 21:15–45.
- Minowitz, P. 1993. *Profits, Priests and Princes. Adam Smith's Emancipation of Economics from Politics and Religion*. Stanford, CA: Stanford University Press.
- Montes, L. 2003. "Das Adam Smith Problem: Its Origins, the Stages of the Current Debate, and One Implication for Our Understanding of Sympathy." *Journal of the History of Economic Thought* 25(1):64–90.
- Morrow, G. R. 1927. "Adam Smith: Moralism and Philosopher." *Journal of Political Economy* 35:321–42.

- Nieli, R. 1986. "Spheres of Intimacy and the Adam Smith Problem." *Journal of the History of Ideas* 47:611–24.
- Nietzsche, F. 1903. *Nietzsches Werke [Collected Works of Nietzsche]*, vol. 8. Leipzig: Naumann.
- Nitsch, T. O. 1990. "Further Reflections on Human-Nature Assumptions – Part I: The 'Men' of Aristotle, Adam Smith *Et Al.* Revisited." *International Journal of Social Economics* 17(6):4–34.
- Nitsch, T. O. 1991. "Further Reflections on Human-Nature Assumptions – Part II: From *Homo Oeconomicus Honorabilis* to *Homo Oeconomicus*, the Good Steward." *International Journal of Social Economics* 18(11/12):62–91.
- North, D. C. 1993. "Institutions and Credible Commitment." *Journal of Institutional and Theoretical Economics* 149:11–23.
- O'Boyle, E. J. 1994. "Homo Socio-Economicus: Foundational to Social Economics and the Social Economy." *Review of Social Economy* 52:286–313.
- Oncken, A. 1897. "The Consistency of Adam Smith." *Economic Journal* 7:443–50.
- Otteson, J. R. 2000. "The Recurring 'Adam Smith Problem.'" *History of Philosophy Quarterly* 17(1):51–74.
- Otteson, J. R. 2002. *Adam Smith's Marketplace of Life*. Cambridge: Cambridge University Press.
- Pack, S. J. 1997. "Adam Smith on the Virtues: A Partial Resolution of the Adam Smith Problem." *Journal of the History of Economic Thought* 19(1):127–40.
- Popper, K. R. 1957. *The Poverty of Historicism*. London: Routledge and Kegan Paul.
- Popper, K. R. 1972. *Objective Knowledge*. Oxford: Clarendon.
- Popper, K. R. 1977. *The Logic of Scientific Discovery*. London: Hutchinson.
- Popper, K. R. 1978. *Conjectures and Refutations: The Growth of Scientific Knowledge*. London: Routledge and Kegan Paul.
- Popper, K. R. 1985. *Popper Selections*, edited by D. Miller. Princeton, NJ: Princeton University Press.
- Popper, K. R. 1992. *In Search of a Better World: Lectures and Essays from Thirty Year*. London: Routledge.
- Popper, K. R. 1995. "Das Rationalitätsprinzip." In *Lesebuch: Ausgewählte Texte Zur Erkenntnistheorie, Philosophie Der Naturwissenschaften, Metaphysik, Sozialphilosophie*, edited by K. R. Popper, 350–9. Tübingen: Mohr Siebeck.
- Raphael, D. D. 1975. "The Impartial Spectator." In *Essays on Adam Smith*, edited by A. S. Skinner and T. Wilson, 83–99. Oxford: Clarendon Press.
- Recktenwald, H. C. 1978. "An Adam Smith Renaissance Anno 1976? The Bicentenary Output – A Reappraisal of His Scholarship." *Journal of Economic Literature* 16(1):56–83.
- Reisman, D. A. 1998. "Adam Smith on Market and State." *Journal of Institutional and Theoretical Economics* 154(2):357–84.
- Riha, T. J. F. 1990. "The Dehumanisation of Economic Science: In Search of the Appropriate Methodology." *International Journal of Social Economics* 17(12):47–63.
- Rothschild, E. 2001. *Economic Sentiments: Adam Smith, Condorcet, and the Enlightenment*. Cambridge: Harvard University Press.
- Rubinstein, A. 1998. *Modeling Bounded Rationality*. Cambridge, MA: MIT Press.
- Schliesser, E. 2005. "Wonder in the Face of Scientific Revolutions: Adam Smith on Newton's 'Proof' of Copernicanism." *British Journal for the History of Philosophy* 13:697–732.
- Sen, A. 1990. "Rational Fools: A Critique of the Behavioral Foundations of Economic Theory." In *Beyond Self-Interest*, edited by J. J. Mansbridge, 25–43. Chicago, IL: The University of Chicago Press.
- Sen, A. 1995. "Rationality and Social Choice." *American Economic Review* 85:1–24.
- Simon, H. A. 1955. "A Behavioral Model of Rational Choice." *Quarterly Journal of Economics* 69:99–118.

- Simon, H. A. 1957. *Models of Man. Social and Rational*. New York: John Wiley & Sons.
- Simon, H. A. 1993. "Altruism and Economics." *American Economic Review: Papers and Proceedings* 83(2):156–61.
- Skinner, A. S. 1976. "Adam Smith: The Development of a System." *Scottish Journal of Political Economy* 23(2):111–32.
- Skinner, A. S. 1979. *A System of Social Science: Papers Relating to Adam Smith*. Oxford: Clarendon Press.
- Smith, A. 1759/1966. *The Theory of Moral Sentiments*. New York: A M Kelley.
- Smith, A. 1762–3/1983. *Lectures on Rhetoric and Belles Lettres*, edited by J. C. Bryce. Oxford: Clarendon.
- Smith, A. 1776/1976. *An Inquiry into the Nature and Causes of the Wealth of Nations*, edited by R. H. Campbell, A. S. Skinner, and W. B. Todd, 2 vols. Oxford: Clarendon Press.
- Smith, A. 1869. *Essays on Philosophical Subjects*, edited by J. Black and J. Hutton. London: A Murray.
- Sobel, I. 1979. "Adam Smith: What Kind of Institutionalism Was He?" *Journal of Economic Issues* 13:347–68.
- Suchanek, A. 1992. "Der Ökonomische Ansatz Und Das Problem Der Theoretischen Integration," Unpublished PhD Dissertation, University Witten-Herdecke, Germany.
- Suchanek, A. 1993. "Der Homo Oeconomicus Als Heuristik," University of Eichstaett Faculty Working Paper, Wirtschaftswissenschaftliche Fakultät, Universitaet Eicshtaett.
- Suchanek, A. 1999. "Kritischer Rationalismus Und Die Methode Der Sozialwissenschaften." In *Karl Poppers Kritischer Rationalismus*, edited by I. Pies and M. Leschke, 85–104. Tübingen: Mohr Siebeck.
- Teichgraeber, R. F. 1981. "Rethinking Das Adam Smith Problem." *Journal of British Studies* 20(2):106–23.
- Tomer, J. F. 2001. "Economic Man vs. Heterodox Man: The Concepts of Human Nature in Schools of Economic Thought." *The Journal of Socio-Economics* 30:281–93.
- Tribe, K. 1999. "Adam Smith: Critical Theorist?" *Journal of Economic Literature* 37:609–32.
- Viner, J. 1927. "Adam Smith and Laissez Faire." *Journal of Political Economy* 35:198–232.
- Vromen, J. J. 1995. *Economic Evolution: An Enquiry into the Foundations of New Institutional Economics*. London: Routledge.
- Wagner-Tsukamoto, S. A. 2003. *Human Nature and Organization Theory: On the Economic Approach to Institutional Organization*. Cheltenham, UK and New York: Edward Elgar.
- Wagner-Tsukamoto, S. A. 2007. "Moral Agency, Profits and the Firm: Economic Revisions to the Friedman Theorem." *Journal of Business Ethics* 70(2):209–20.
- Wagner-Tsukamoto, S. A. 2009a. *Is God an Economist? An Institutional Economic Reconstruction of the Old Testament*. Basingstoke, UK et al: Palgrave Macmillan.
- Wagner-Tsukamoto, S. A. 2009b. "The Paradise Story: A Constitutional Economic Reconstruction." *Journal for the Study of the Old Testament* 34(2):147–70.
- Wagner-Tsukamoto, S. A. 2010. "Out of a Slave Contract: The Analysis of Pre-Hobbesian Anarchists in the Old Testament." *Constitutional Political Economy* 21:288–307.
- Wagner-Tsukamoto, S. A. 2012. "Updating Adam Smith on Business Ethics: Institutional Economics and Ethical Capitalism," Conference Paper/Proceedings, 4th World Business Ethics Forum (WBEF), Hong Kong Baptist University, Hong Kong, China, 16–18 December 2012. <http://hdl.handle.net/2381/27650>.

- Wagner-Tsukamoto, S. A. 2013. "Homo Economicus and the Stories of Jacob: On the Methodological Relevance of Rational Choice Theory for Studying the Hebrew Bible." *Method and Theory in the Study of Religion* 25:78–100.
- Werhane, P. H. 1991. *Adam Smith and His Legacy for Modern Capitalism*. Oxford: Oxford University Press.
- Wilson, D., and W. Dixon. 2006. "Das Adam Smith Problem: A Critical Realist Perspective." *Journal of Critical Realism* 5:251–72.
- Wilson, J. Q. 1989. "Adam Smith on Business Ethics." *California Management Review* 32:59–72.
- Winch, D. 1986. "Adam Smith's Enduring Particular Result: A Political and Cosmopolitan Perspective." In *Wealth and Virtue*, edited by I. Hont and M. Ignatieff, 253–70. Cambridge: Cambridge University Press.
- Wittgenstein, L. 1975. *Philosophical Remarks*. New York: Harper & Row.
- Witztum, A. 1998. "A Study into Smith's Conception of the Human Character: Das Adam Smith Problem Revisited." *History of Political Economy* 30:489–513.