

Time for behavioral political economy? An analysis of articles in behavioral economics

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Abstract This study analyzes leading research in behavioral economics to see whether it contains advocacy of paternalism and whether it addresses the potential cognitive limitations and biases of the policymakers who are going to implement paternalist policies. The findings reveal that 20.7 percent of the studied articles in behavioral economics propose paternalist policy action and that 95.5 percent of these do not contain any analysis of the cognitive ability of policymakers. This suggests that behavioral political economy, in which the analytical tools of behavioral economics are applied to political decision-makers as well, would offer a useful extension of the research program. Such an extension could be related to the concept of robust political economy, according to which the case for paternalism should be subjected to “worst-case” assumptions, such as policymakers being less than fully rational.

Keywords Behavioral economics · Anomalies · Rationality · Homo economicus · Public choice · Robust political economy

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[W]e should not expect models based on the assumption of rational individual behavior to yield as fruitful a result when applied to collective-choice processes as similar models have done when applied to market or economic choices. – Buchanan and Tullock (1962)

1 Introduction

Recently, and especially since the publication of *Nudge* (Thaler and Sunstein 2009), a public debate about paternalism has emerged. By “paternalism” is meant conscious attempts to alter the “choice architecture” that people face with the purpose of helping them make better decisions, as judged by themselves or others.¹ One basis for the discussion is research findings in behavioral economics that make clear that economic decision-makers are often far removed from the rational *homo economicus*. They are rather characterized by cognitive limitations and biases, and they are affected or afflicted by such things as imperfect self-control, framing effects, loss aversion, endowment effects, choice bracketing, information and choice overload and a poor grasp of probability calculations.² Although this insight is not new – Ashraf et al. (2005) trace it back to Smith (1759), and Simon (1955) stressed the bounded nature of rationality early on – it has now been documented thoroughly through experimental research.

Here, we ask how paternalism on grounds such as these is treated in the scientific literature. More precisely, we present the results of a systematic analysis of all articles in behavioral economics dealing with limited rationality (in a wide sense) in the ten leading economics journals in the past ten years. The study has two main purposes. *The first* is to document the prevalence of policy recommendations of a paternalist kind in leading research in behavioral economics. To what extent do researchers draw normative conclusions from the insight that economic actors often behave irrationally?³ *The second* is to investigate to what extent those behavioral economists that do offer policy recommendations analyze

¹ See Dworkin (2009) for more on paternalism.

² For comprehensive presentations of behavioral economics, see Kahneman (2003), Camerer and Lowenstein (2004), Diamond and Vartiainen (2007) and Wilkinson (2007). For an argument in favor of incorporating bounded rationality into economic analysis, see Conlisk (1996).

³ A positive analysis of how economic decision-making functions does not in itself imply a normative position on whether the government should try to influence economic actors in particular ways. However, it certainly *can* be used in an argument for paternalism.

policymakers in the same way as they analyze economic decision-makers. Are the former also seen as suffering from cognitive imperfections and irrationality, or is it simply assumed that they are without such problems? To the extent that researchers do not apply assumptions about cognitive limitations and biases to policymakers, or motivate why such assumptions are superfluous, it could be argued that policy recommendations are based on an incomplete analysis. If policymakers are irrational just like others, the chances of success for the paternalist project can be put into question.

The main results are that 20.7 percent of leading articles in behavioral economics contain some kind of paternalist policy recommendation and that 95.5 percent of these do not contain any analysis at all of the potential problems with cognitive limitations and biases of policymakers. This, we suggest, is a finding of a methodological inconsistency that makes the policy recommendations less credible.

The present study has been inspired by the way in which public choice scholarship emerged. One important feature of that emergence was a critique of an asymmetry in much economic research at the time with regard to assumptions about the *motivation* of economic and political actors. Economic actors were assumed to be self-interested, whereas political actors were assumed (usually implicitly) to maximize a social-welfare function rather than their own utility functions. Hence, policy recommendations could proceed on the assumption that whatever welfare-improving advice was given to policymakers, they would want to implement it. *Contra* this, Buchanan (1949), Buchanan and Tullock (1962) and Brennan and Buchanan (1984, 1985) have played an especially important role in (re-)introducing a political economy approach into economics. Brennan and Buchanan (1985: 50) write:

The symmetry argument suggests only that whatever model of behavior is used, that model should be applied across all institutions. The argument insists that it is illegitimate to restrict *Homo economicus* to the domain of market behavior while employing widely different models of behavior in nonmarket settings, without any coherent *explanation* of how such a behavioral shift comes about.

One effect of the public choice argumentation has been the now widespread recognition that before policy advice is proffered, a comparative institutional analysis, of *both* market and government failures, needs to be undertaken.⁴ As the present investigation

⁴ Bowles and Gintis (2000: 1425): "First, market failures and state failures are now analyzed in a common framework rather than from competing viewpoints, due to development in information economics, and especially the modeling of relations between principals and agents. Moreover, public choice theory has given us a unified approach covering the actions of government officials and market actors alike. As a result, the state is no longer the exogenous instrument wisely implementing some

demonstrates, such comparative analysis is largely missing in the realm of behavioral economics when policy recommendations are presented. This may be seen as unsatisfactory. We think, first of all, that policymakers should be explicitly analyzed in studies of this kind; second, that the default approach should be to apply symmetric assumptions about rationality and cognitive ability to economic and political decision-makers;⁵ and third, that asymmetric assumptions are fine if they are explicitly motivated. As Buchanan (1984: 13–14) puts it:

[T]he burden of proof should rest with those who suggest wholly different models of man apply in the political and economic realms of behavior.

Thus, when a coherent explanation for asymmetry can be given, asymmetry is in general not a problem.

The argument of this study is not, then, that paternalism is unwarranted – only that a thorough and complete positive analysis, which takes seriously the use of realistic assumptions for both market and government, should precede and inform (and sometimes put to a halt) policy recommendations of a paternalist kind. This argument can be related to the concept of *robust political economy*, by which is meant that in analyzing systems, institutions or policies, such as paternalism, their functionality and desirability should be investigated by subjecting them to “worst-case” assumptions for the relevant actors with regard to their motivation and cognitive ability (Boettke and Leeson 2004; Leeson and Subrick 2006).

The next section offers a brief sketch of the current debate on paternalism. Then, we describe the data and method used in this study in more detail, and the empirical findings are presented. Lastly, concluding remarks are given.

concept of social well-being, and attention has shifted from picking the right policy, to setting up the right rules so that the imperfect interplay of incentives of all the relevant actors will support socially desirable, if not optimal, outcomes.” Cf. Kliemt (2005).

⁵ This is not to say that the *exact* same assumptions need to be applied: rationality and cognitive ability could be imperfect for both types of actors but the imperfections could be of different kinds.

2 The current debate on paternalism

To get a feeling for what the debate is about, let us take a look at some of the arguments for and against policy interventions aiming to improve the decision-making of irrational persons. Such interventions have not least been advocated by Thaler and Sunstein (2003, 2009) and Sunstein and Thaler (2003).⁶ Thaler and Sunstein (2003: 175) refer to their approach as *libertarian, or soft, paternalism*:⁷

We believe that the anti-paternalistic fervor expressed by many economists is based on a combination of a false assumption and at least two misconceptions. The false assumption is that people always (usually?) make choices that are in their best interest. This claim is either tautological, and therefore uninteresting, or testable. We claim that it is testable and false – indeed, obviously false. The first misconception is that there are viable alternatives to paternalism. ... The second misconception is that paternalism always involves coercion. ... If no coercion is involved, we think that some types of paternalism should be acceptable to even the most ardent libertarian. We call such actions libertarian paternalism.

Another, related form of paternalism has been advocated by Camerer et al. (2003: 1212):

We propose an approach to evaluating paternalistic regulations and doctrines that we call “asymmetric paternalism.” A regulation is asymmetrically paternalistic if it creates large benefits for those who make errors, while imposing little or no harm on those who are fully rational.

Such paternalist ambitions based on results from research in behavioral economics have been criticized on several grounds. A basic theme in this critique is captured by Stigler (1982: 140) in his rendition of Adam Smith’s view:

Smith gave a larger role to emotion, prejudice, and ignorance in political life than he ever allowed in ordinary economic affairs.⁸

That is to say, even if it is the case that the economic decision-makers often behave irrationally, it may be the case that political decision-makers and bureaucrats often do, too. If so, this weakens the case for paternalist policies. This line of argument is presented by Glaeser (2004: 412):

⁶ “Policy” or paternalism need not refer to government interventions but could also refer to market or civil-society actors, who may try to induce others to make better decisions. In this paper, the main focus is on the government, but recommended interventions of the latter type are also covered in the systematic analysis.

⁷ The terminology has been criticized by, e.g., Klein (2004) and Mitchell (2004).

⁸ Cf. Coase (1994: 116).

Evaluating government intervention requires us to weigh the relative losses from private folly and state malfeasance. After all, our leaders are subject to the same biases as private citizens, and people may select into politics on the basis of overoptimism and aggression. ... The advent of democracy increases the hope that we can trust our governments. Psychological realism challenges this view and suggests that voters will be apathetic and, when they act, often enthusiastically support policies and politicians that are against their long-term interests.⁹

Glaeser (2006: 133) develops the argument further, and claims:

With boundedly rational voters and politicians, democracy is no guarantee against political catastrophe. Moreover, as the three models in this Part emphasize, when cognitive errors are in some sense endogenous, then economic theory pushes us to think that private decisions will often be more accurate than public decisions.¹⁰

Rizzo and Whitman (2009a) warn of a slippery-slope effect of soft paternalism, not least if policymakers are less than fully rational, such that hard paternalism might ensue. For instance, they argue that hyperbolic discounting, narrow framing, acceptance of passive framing, extremeness aversion and extension neglect by policymakers tend to reinforce such an effect. Rizzo and Whitman (2009b: 910) offer a *tour de force* of potential knowledge problems with government intervention in the light of the findings in behavioral economics:

If well-meaning policymakers possess all the relevant information about individuals' true preferences, their cognitive biases, and the choice contexts in which they manifest themselves, then policymakers could potentially implement paternalist policies that improve the welfare of individuals by their own standards. But lacking such information, we cannot conclude that actual paternalism will make their decisions better; under a wide range of circumstances, it will even make them worse. New paternalists have not taken the knowledge problems that are evident from the underlying behavioral and economic research seriously enough.

We suggest that this critique points at a need for *behavioral political economy*, to use DellaVigna's (2009) term, which applies the tools of behavioral economics also to politicians and bureaucrats. If one is considering recommending political action to alleviate the effects of the cognitive limitations of economic decision-makers, it seems important to consider whether those envisaged to decide on and carry out the action have cognitive limitations as well. This clearly relates to the concept of *robust political economy* (Leeson and Subrick 2006). In describing this approach, Boettke and Leeson (2004: 101, 109) write:

⁹ Cf. Dufwenberg (2007). On irrational voters, see also Buchanan (1967), Caplan (2007), Wolfers (2007) and Hillman (2010).

¹⁰ This point is also made by Schumpeter (1942/1994: 256–263) and Buchanan and Tullock (1962: ch. 4).

Robust political economy requires that the system deal adequately with both motivation and information issues. Under ideal conditions of complete benevolence and omniscience, any political economic organization is workable; but, in a world of gods, the notion of economy, and with it the science of economics, disappears. What political economists in the real world should concern themselves with is how stable various modes of social organization available to us are under real-world incentive and information conditions.

This approach implies that before it can be assessed whether policymakers should be entrusted with the tools to take paternalist policy action, their cognitive ability to do so needs to be investigated.¹¹

Hence, the case for government paternalism could be said to hinge on several (necessary but not necessarily sufficient) conditions being met, as illustrated in Figure 1.¹²

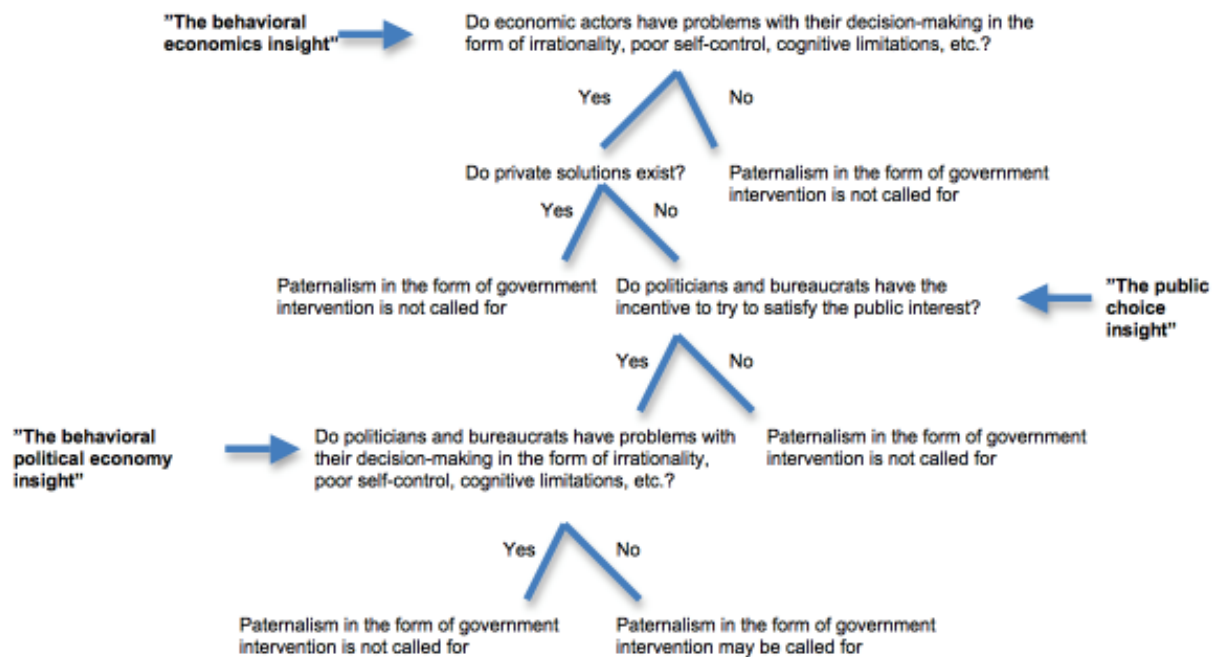


Fig. 1 Necessary conditions for successful government paternalism

¹¹ Beaulier and Subrick (2006) use the framework of robust political economy to look at development policy; Voigt (2006) applies it to antitrust policy; and Pennington (2011) uses it to analyze various economic and philosophical issues. On the basis in Austrian economics for assuming policymakers to have cognitive limitations, see, e.g., Boettke et al. (2007) and Holcombe (2009). On robust institutions more generally, see Levy (2002).

¹² While the conditions are expressed in dichotomous (and categorical-sounding) form in the figure, this is a simplification. They may be met to a smaller or larger degree, and paternalism is called for to the extent that they are met.

One *could* argue for government intervention as soon as economic decision-making has been shown to exhibit instances of irrationality, cognitive limitations, or the like, but such a conclusion could be regarded as hasty, given the further considerations (highlighted in Figure 1) that are relevant for assessing whether such intervention has a good chance of being successful.

First, there may be private solutions which render government action unnecessary. For example, some soft-paternalist proposals are directed towards private actors, such as Thaler and Sunstein's (2009) oft-cited example with a cafeteria owner who arranges products in order to influence patrons to buy healthier options. If such a scheme works out, then there seems to be little need for government interventions.^{13,14} *Second*, it could be that political decision-makers and bureaucrats do not have the incentives to try to improve economic decision-making (as stressed by public choice research – see, e.g., Hayek 1960: 291; Mueller 2003; and Glaeser 2006).¹⁵ *Third*, political decision-makers and bureaucrats could suffer from the same instances of irrationality and cognitive limitations that economic actors suffer from. Taken together, the second and third points here relate directly to the approach of robust political economy (Boettke and Leeson 2004).

If there are no private solutions, if there are no incentive problems in politics, and if there are no problems of irrationality or cognitive limitations in politics, then government paternalism could arguably be seen as justified in the presence of decision-making problems for economic actors. If any one of these conditions is not met, it is, at the very least, not clear without careful comparative analysis that political interventions, aiming to alter the “choice

¹³ However, as pointed out by Sugden (2009), if business owners are to be urged to try to bring about more rationality, one must first analyze if they have an incentive to do this and if *they themselves* are not characterized by irrationality, cognitive limitations and poor self-control. If so, the case for this type of paternalism is also weakened considerably.

¹⁴ One could also, under this rubric, envisage other methods for solutions than paternalism, e.g., market mechanisms under general institutions that induce economic actors to act almost *as if* they were rational – see Smith (2000), Levitt and List (2008) and List and Millimet (2008). Put shortly, institutions affect how a given level of rationality translates into actions and outcomes.

¹⁵ In the ensuing analysis, we do not consider “the public choice insight”, not because it is unimportant but because we wish to focus on “the behavioral political economy insight”, which applies irrespective of whether policymakers are self-interested or not (see Krusell et al. 2002). In future research, in accordance with the robust political economy approach, it could be interesting to analyze interaction effects, e.g., to see whether self-interested policymakers exploit cognitive limitations to pursue policies that favor them rather than the population in general.

architecture” of decision-makers, will improve the situation. Without reasonable confidence in such a scope for improvement, the presence of irrationality or cognitive limitations in economic decision-making does not justify, one could argue, paternalist policies. Analyses proffering paternalistic policy recommendations without considering these factors must be considered incomplete.

This is where the present paper finds its motivation. First, it investigates to what extent leading articles in behavioral economics argue for paternalist interventions on the basis of research identifying economic actors as less-than-fully rational. Then it studies to what extent the articles that do argue for such interventions incorporate an explicit analysis of the rationality and cognitive abilities of “choice architects” – i.e., policymakers and other paternalist executors.

3 Method and data

This study is based on a systematic investigation of all articles (including notes but excluding reviews and errata) in behavioral economics published in the period 2000–2009 in the top-ten journals of economics, viz., *American Economic Review*, *Journal of Finance*, *Quarterly Journal of Economics*, *Econometrica*, *Journal of Financial Economics*, *Journal of Political Economy*, *Review of Financial Studies*, *Journal of Economic Theory*, *Review of Economic Studies* and *Journal of Econometrics*.¹⁶ The selection is based on the “within economics impact” ranking of Kodrzycki and Yu (2006).¹⁷ Choosing the top-ten journals as opposed to other journals is to some extent arbitrary, but the idea is to capture the practice of the behavioral economics research frontier during the past decade. Results for publications in behavioral economics in other journals and in earlier time periods may of course differ from the ones produced in this study.

“Behavioral economics” is defined, for the purposes of this study, as the analysis of economic actors with theoretical assumptions or empirical findings of cognitive imperfections, irrationality or problems with self-control in their decision-making. The definition also covers behavioral finance. Notably, the definition excludes articles that address whether economic actors are strictly self-interested or if they have social preferences and display altruism, which are generally seen as part of behavioral economics. The motivation for this exclusion

¹⁶ The full dataset, with a listing of all included articles and with quotes of policy recommendations, is available upon request from the author.

¹⁷ We thank Daniel Waldenström for recommending this ranking.

is that the focus of this study is on whether policy recommendations of a paternalist kind could be seen as problematic *on the terms of behavioral economics itself*. For that reason, it would not be meaningful to see whether paternalist actors are assumed to have social preferences in behavioral economics research, since that would not constitute a problem for policy recommendations on the terms of behavioral economics itself. Another set of articles are also excluded from this investigation: those that study how individually rational actions produce socially suboptimal, or irrational, outcomes.

A “policy recommendation” is defined as a recommendation to undertake some form of conscious action aiming to enable economic decision-makers to behave less irrationally, with less cognitive imperfection or with more self-control. Such recommendations count as instances of paternalism. The conscious action could be more or less intrusive, ranging from a weak nudge (soft paternalism) to outright prohibitions (hard paternalism). The primary focus in this investigation is recommendations directed toward the government (in a broad sense, covering both politicians and bureaucrats), but we also cover cases where economic actors (typically companies), civil society or economists are urged to act. Recommendations, in our sense, can be given strongly or weakly. The former category covers explicit, clearly stated recommendations, while the latter category includes explicit but vague recommendations and implicit ones, e.g., in the form of hypothetical imperatives and general policy discussions.

Figure 2 illustrates schematically how the categorization of articles has been undertaken.



Fig. 2 The method used

The first step was to categorize all articles in the ten journals into one of two sets: being in behavioral economics or not. Of the former set, the share which contained a policy recommendation was identified and calculated. Lastly, the articles with a policy recommendation were sorted into one of three groups: those that applied the same assumptions of cognitive ability for policymakers and economic decision-makers, those that applied different such assumptions and those that applied no such assumptions.¹⁸

The more precise way in which the search of journals was carried out is specified in the Appendix. Three examples of how articles were categorized are also given there.

4 Empirical results

4.1 Articles in behavioral economics

In Table 1, we first present the total number of journal articles that we have analyzed (i.e., the total number of published articles in the ten journals) and the total number and share of articles that were found to be in behavioral economics.

Table 1 The number and share of articles in behavioral economics in the ten journals 2000–2009

	Total	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Number of articles analyzed	8,104	703	735	842	765	767	719	782	988	885	918
Number of articles in behavioral economics	323	24	33	21	28	32	37	41	39	31	37
Share of articles in behavioral economics	4.0%	3.4%	4.5%	2.5%	3.7%	4.2%	5.1%	5.2%	3.9%	3.5%	4.0%

¹⁸ By “different” is meant an assumption that specifies policymakers as being rational or, at least, less irrational than those which paternalism is supposed to help make better decisions. One basis for such an argument could be that policymakers are often experts or have access to experts who are able to clearly see what needs to be done. We do not claim that this is an unreasonable assumption – although several scholars cited in Section 3 could be interpreted as seeing it as such – but we do think that it should be made explicitly and that it should be motivated, preferably on empirical grounds.

As can be seen, more than 8,000 articles have been analyzed for this study, and out of them, 323 (4 percent) were in behavioral economics (in our sense of the term – see Section 3). Interestingly, there is no increasing or decreasing trend for the share of articles in behavioral economics in the top-ten journals: it hovers around 4 percent throughout the period.

When comparing the journals, it is clear that some published more behavioral economics research than others during this period – see Table 2. The *Journal of Finance* and the *Quarterly Journal of Economics* published the most; the *Journal of Economic Theory* and the *Journal of Econometrics* the least. To some extent, this plausibly reflects the subject profile of some of the journals.

Table 2 Share of articles in behavioral economics per journal 2000–2009

	Share of articles in behavioral economics
American Economic Review	5.0%
Journal of Finance	8.1%
Quarterly Journal of Economics	7.5%
Econometrica	4.0%
Journal of Financial Economics	4.1%
Journal of Political Economy	2.6%
Review of Financial Studies	3.2%
Journal of Economic Theory	2.5%
Review of Economic Studies	2.8%
Journal of Econometrics	.3%

4.2 Articles with a policy recommendation

We next turn to the share of the articles identified as being in behavioral economics that contain a policy recommendation (as defined in Section 3). As is clear from Table 3, over all years, 20.7 percent of all the articles in behavioral economics in the top-ten journals contain some kind of policy recommendation.¹⁹ This of course means that almost 80 percent of all the articles do not contain such a recommendation, implying that most of the leading behavioral economics research is about producing positive results, not affecting policy.

¹⁹ Of the 323 articles in behavioral economics identified, 131 (40.6 percent) are purely theoretical. Of the 67 ones that also contain a policy recommendation, 27 (40.3 percent) are purely theoretical. Hence, a majority of the articles with a policy recommendation contain empirical analysis.

Table 3 The number and share of articles in behavioral economics in the ten journals 2000–2009

	Total	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Number of articles in behavioral economics	323	24	33	21	28	32	37	41	39	31	37
Number of articles in behavioral economics with a policy recommendation	67	1	6	5	11	8	6	11	7	3	9
Share of articles in behavioral economics with a policy recommendation	20.7%	4.2%	18.2%	23.8%	39.3%	25.0%	16.2%	26.8%	17.9%	9.7%	24.3%

Out of the 67 articles with a policy recommendation, only 16 (23.9 percent) of the recommendations are of a strong and explicit kind, whereas the rest can be considered weak (for definitions of strong and weak, see Section 3). The share of articles in behavioral economics in the ten journals 2000–2009 with a strong policy recommendation is therefore 4.9 percent (20.7 percent x 23.9 percent).

When looking at the journals, large differences appear, according to Table 4. While the articles in behavioral economics in the *Journal of Political Economy* and the *Quarterly Journal of Economics* contain a policy recommendation in about 55 percent of the cases, the corresponding shares for the *Journal of Financial Economics* and the *Journal of Econometrics* are 5.7 percent and 0 percent.

Table 4 Share of articles in behavioral economics with a policy recommendation per journal 2000–2009

	Share of articles in behavioral economics with a policy recommendation
American Economic Review	24.7%
Journal of Finance	12.5%
Quarterly Journal of Economics	54.8%
Econometrica	8.3%
Journal of Financial Economics	5.7%
Journal of Political Economy	55.6%
Review of Financial Studies	16.7%
Journal of Economic Theory	15.4%
Review of Economic Studies	16.7%
Journal of Econometrics	0%

One possible explanation may be that the journals differ with regard to how theoretical and abstract they are: it is plausible to expect *Econometrica* and the *Journal of Econometrics* not do deal with policy issues to any large extent, whereas the journals with a high degree of

policy recommendations may have a general tendency to welcome more practically oriented and policy-relevant studies. It also seems to be the case the three journals with the highest shares are the most general and the least subject-specific.

4.3 Designated receivers of policy recommendations

A further question is: To whom are these policy recommendations directed? We distinguish between the government (broadly speaking), on the one hand, and private actors (in the market and in civil society), on the other. Over the whole time period, and for all journals, we find that out of all policy recommendations, 81.2 percent are directed toward the government and 62.4 percent toward the private sector. This means that some articles direct their policy recommendations to both government and private actors. But clearly, the government is involved in a large majority of the cases.

4.4 Behavioral analysis of policymakers

Lastly, we look at whether the articles in behavioral economics that contain a policy recommendation apply a behavioral analysis to the policymakers as well. We divide the articles into three groups: i) those that do not contain any explicit behavioral analysis of policymakers; ii) those that contain the same behavioral analysis (i.e., policymakers are analyzed, cognitively, in the same way as economic actors);²⁰ and iii) those that contain a different behavioral analysis (i.e., policymakers are analyzed in a different way than economic actors, viz., as having no or less severe cognitive limitations or biases, and this methodological asymmetry is incorporated into the analysis in an explicit way and is motivated or explained). The shares sum, for each journal, for each year and in total, to 100%.

Table 5 reveals that in 95.5 percent of the articles that contain a policy recommendation (64 articles), no behavioral analysis of policymakers is included. Of the remaining ones, 3.0 percent of the articles (two articles) contain the same behavioral analysis of economic and political actors, which means that policy recommendations are put forth in spite of taking into account the cognitive limitations of policymakers, and 1.5 percent

²⁰ This is not to say that the cognitive limitations are of the *exact* same kind, only that some type of cognitive limitation is assumed or allowed for also in the case of policymakers.

(one article) contain a different behavioral analysis, which means that this study motivates why there is a methodological asymmetry in the analysis. Not assuming theoretically or not finding empirically that policymakers have cognitive limitations can be expected to be positively related to a propensity to advocate paternalism, since the analysis then implies that they are competent at mitigating the cognitive limitations of economic actors.

Table 5 The share of articles in behavioral economics with a policy recommendation that contains no, the same or a different behavioral analysis of policymakers (compared to that applied to economic actors) in the ten journals 2000–2009

	Total	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
No behavioral analysis of policymakers	95.5%	0%	100%	80%	100%	87.5%	100%	100%	85.7%	100%	100%
The same behavioral analysis of policymakers	3%	100%	0%	20%	0%	0%	0%	0%	14.3%	0%	0%
A different behavioral analysis of policymakers	1.5%	0%	0%	0%	0%	12.5%	0%	0%	0%	0%	0%
Number of articles in behavioral economics with a policy recommendation	67	1	6	5	11	8	6	11	7	3	9

Notes: The one article containing a different behavioral analysis is Bernheim and Rangel (2004), described briefly in the Appendix.

If we look at the journals, as reported in Table 6, we see that the differences are quite small (with the exception of *the Journal of Econometrics*, which contains no article in behavioral economics with a policy recommendation). The general pattern is that a negligible share of the articles that contain a policy recommendation also contains a behavioral analysis of policymakers.

Table 6 The share of articles in behavioral economics with a policy recommendation that contain no, the same or a different behavioral analysis of policymakers (compared to that applied to economic actors) per journal 2000–2009

	No behavioral analysis of policymakers	Same behavioral analysis of policymakers	Different behavioral analysis of policymakers
American Economic Review	91.3%	4.3%	4.3%
Journal of Finance	100.0%	0%	0%
Quarterly Journal of Economics	94.1%	5.9%	0%
Econometrica	100.0%	0%	0%
Journal of Financial Economics	100.0%	0%	0%
Journal of Political Economy	100.0%	0%	0%
Review of Financial Studies	100.0%	0%	0%
Journal of Economic Theory	75.0%	25.0%	0%
Review of Economic Studies	100.0%	0%	0%
Journal of Econometrics	-	-	-

4.5 Comments

Almost none of the articles with a policy recommendation includes a behavioral analysis of policymakers. Until studies of this kind do, we suggest it is prudent to regard the policy recommendations with skepticism.

As noted above, the large majority of articles covered in this investigation do not contain paternalist advocacy. But it could be that the behavioral economics literature is used to motivate paternalist policies by others than the scholars themselves or by the scholars themselves in other contexts. For instance, it could be cited to justify paternalism in the media, in reports from organizations of various kinds, in the work of government commissions and government bureaus (e.g., *Nudge* author Cass Sunstein now heads the Office of Information and Regulatory Affairs at the White House) and in *travaux préparatoires* to legislation. Hence, this investigation can be expected to underestimate the effect of behavioral economics research on the wider policy debate and on policy decisions.

As anecdotal evidence of whether our 323 articles in behavioral economics have had a wider influence on the public debate, we checked how many of them that were cited in *Nudge* (Thaler and Sunstein 2009), arguably the most influential book arguing for paternalism and covering large parts of our time period. The result: 13 (4 percent). Of these, 11 (85 percent) contained a policy recommendation, which means that 16 percent of the 67 articles in behavioral economics with a policy recommendation were cited in the book. We leave for the reader to decide whether this implies a small or large usage of research in behavioral economics in a policy-recommending book. In any case, this line of research may

still be used in many other ways and settings, the investigation of which lies beyond the scope of this study.

5 Concluding remarks

Research in behavioral economics has documented that economic actors oftentimes behave irrationally due to cognitive limitations and biases. Sometimes this positive analysis forms the basis of paternalist policy recommendations that aim at improving economic decision-making and economic outcomes. The question addressed in this study is if the insights of behavioral economics in the economic sphere are taken seriously when policy recommendations are proffered. If policymakers are not analyzed, or if they are analyzed differently than economic actors without there being a motivation for it, this could be seen as weakening the case for paternalism. It does not seem satisfactory to simply assume that one set of actors is free from irrationality, without grounding this in psychological realism, while at the same time stressing such grounding as paramount for another set of actors.

This can be related to the setting in which public choice emerged as a research field. At that time, political actors were assumed by many economists to be benevolent maximizers of a social welfare function. As a reaction, public choice scholars argued for symmetry in assuming that both political and economic actors maximize their own utility functions, with the same degree of self-interest.

In order to investigate the issue at hand, we have categorized all articles in behavioral economics in the ten most highly ranked journals in economics during the period 2000–2009. We have then looked closer at the articles that contain a policy recommendation, in order to see if the rationality or cognitive ability of policymakers has been addressed, and in what way.

Our main findings are that 20.7 percent of all articles in behavioral economics in the ten journals contain a policy recommendation and that 95.5 percent of these do not contain any analysis at all of the rationality or cognitive ability of policymakers. In fact, only two of the 67 articles in behavioral economics with a policy recommendation contain an assumption or

analysis of policymakers of the same kind as that applied to economic decision-makers. In the remaining 65 articles, policy recommendations are proffered anyway.²¹

There is arguably room for scientific improvement by expanding the research program into incorporating behavioral political economy. As stressed by the concept of robust political economy, it is otherwise hard to know whether suggestions of paternalism offer scope for actual welfare improvement or not. With it, comparative analysis becomes possible, so that conditions for successful paternalism can hopefully be identified.²² Especially, comparative empirical work in this area is thus far essentially non-existent. For this, experiments that investigate the rationality of politicians and bureaucrats need to be undertaken, and the results obtained need to be incorporated into the overall analysis.

Appendix

A.1 How the study was undertaken practically

Each issue of each journal for all ten years was checked manually in order to find articles that fit the definition of behavioral economics in Section 3. Titles and abstracts were read in order to determine if articles featured behavioral economics content. If an abstract was not available or gave inconclusive information, the introductory and concluding sections were read. Moreover, a full text search query was performed, using a set of keywords (presented below), in order to determine whether or not the article fits our definition of behavioral economics. The searches included all relevant conjugations and modifications of the keywords, e.g., rational, irrational, rationality, irrationality etc. When a keyword was found, the adjacent text was read in order to form an opinion about whether the article could be classified as being in behavioral economics or not.

²¹ Some caution when interpreting the findings is advisable: they are only based on publications in ten journals during a ten-year period, and results may differ for other journals and periods. Likewise, classification is to some extent subjective (but for transparency and verification, the full classification is publicly available).

²² There *is* a small, emerging literature in behavioral political economy, exemplified by Krishna and Morgan (2001), Vis and van Kersbergen (2007) and Jeleva and Rossignol (2009), which can serve as inspiration. Also see the literature on robust political economy (mentioned in Section 2).

The introductory and concluding segments of all articles identified as being in behavioral economics articles were then read, and the full articles were furthermore searched with keywords (presented below), in order to see whether they contained a policy recommendation (as defined in Section 3) or not. When a keyword was found, the adjacent text was read in order to form an opinion about whether the article could be classified as containing a policy recommendation or not. Those that were found to contain such a recommendation were further categorized, firstly into categories depending on for whom the recommendation was meant (government or private actors) and secondly into categories depending on whether they employed the same (behavioral economics) assumptions for economic actors and paternalist actors, whether they used different assumptions for these two groups, or if they did not specify anything about the rationality, cognitive limitations or self-control of paternalist actors at all. “The same assumptions” need not mean *the exact* same assumptions, since there are many different forms of cognitive biases. An article is categorized as making the same assumptions if *some kind* of cognitive bias is considered in the analysis of both paternalist and economic decision-makers. An article is categorized as making different assumptions if the analysis of paternalist decision-makers proceeds on the assumption that they do not suffer from any cognitive bias or that they suffer from such bias to a lesser degree than economic decision-makers.

Keywords (including names) used for to search all articles in order to be able to classify them as being in behavioral economics or not: Anomaly, Ariely, Behavioral, Bernheim, Bias, Bounded, Bowles, Boyd, Camerer, Cognitive, D03 (the JEL code for behavioral economics), Fehr, Frame, Gintis, Heuristic, Kahneman, Loewenstein, Nudge, Paternalism, Psychology, Rational, Self-control, Thaler, Tversky. Keywords used to search all articles found to be in behavioral economics in order to be able to classify them as containing a policy recommendation or not: Consequence, Implication, Policy, Political, Reform.

Articles incorporating hyperbolic discounting have been included as instances of behavioral economics (although it is disputed whether it signifies irrationality – see, e.g., Dasgupta and Maskin 2005). Articles where policy recommendations are proffered but where it is unclear whether they are directed towards government or civil society have been marked as being directed towards both. Articles where it is unclear or hard to judge whether a policy recommendation is strong or weak, have been categorized as belonging to the latter group.

A.2 Three examples of classification

To illustrate how the classification was made, we briefly describe how three articles that are included in the study were assessed.

1. Eliaz and Spiegel (2006) – article in behavioral economics, no policy recommendation

This paper presents a principal-agent model where agents differ in types. The different types do not depend on heterogeneous preferences, but on the degree of cognitive ability. Cognitive ability is taken to describe the likelihood of agents understanding their future preferences, which in this model are different from current ones. Thus, a higher degree of cognitive ability leads to a greater likelihood of realizing that one has time-inconsistent preferences. Unawareness of time-inconsistent preferences is a typical subject of study in behavioral economics, since current choices often must be based on the estimation of future preferences. If these estimations are faulty, agents are partially or fully naive and therefore subject to cognitive limitations, in this setting leading to a greater risk of being exploited by the principal. This paper does not go further in terms of giving recommendations of how this behavioral feature could be dealt with. Hence it is categorized as being in behavioral economics without a policy recommendation.

2. Ameriks et al. (2003) – article in behavioral economics, policy recommendation, no behavioral analysis of policymakers

This paper analyses the relationship between the propensity to plan and budgeting behavior. Similar households tend to behave differently in terms of how much wealth they accumulate. The authors argue that the reason for this lies in agents' "attitudes and skills related to financial planning" and that certain attitudes and/or low skills relate to self-control problems for less sophisticated agents. When agents have a hard time committing to (or even making) saving plans that reflect their preferences for consumption today and in the future, they are thought to have some form of cognitive limitation, the reason for which this paper is categorized as being in behavioral economics. The authors also suggest that future research "develop a suitably rich dynamic model of planning and wealth accumulation consistent with our findings. In doing this, it will be crucial to incorporate policy issues." They also continue with a statement concerning how saving should be encouraged with respect to their findings. The article is categorized as containing a policy recommendation because the authors clearly state that policymakers should try to change agents' behavior. No further analysis of the policymakers is made, which is why the article is categorized as not containing any behavioral analysis for the envisioned interventionist.

3. Bernheim and Rangel (2004) – article in behavioral economics, policy recommendation, a different behavioral analysis of policymakers (compared to that undertaken for economic actors)

The article is based on the premise that substance addiction is the result of mistakes, an assumption the authors state is motivated by results from previous research in various disciplines. This indicates that agents are assumed to have self-control problems, which is why we characterize the article as being in behavioral economics. The authors also argue that government intervention can help agents with these kinds of self-control problems, and that the type of intervention differs depending on the usage pattern. They then give numerous examples of how policies may be designed under different circumstances. Therefore, the article is categorized as containing a policy recommendation. The authors also conduct a behavioral analysis of the policymakers, when they state that "[t]hough

individuals may have some ability to avoid problematic cues and create their own counter-cues, the government is arguably better positioned to do this.” This comment shows that the authors believe that there is a behavioral-ability difference between addicts and policymakers. Thus we characterize this as containing a behavioral analysis of policymakers, but a different one compared to that applied to consumers.

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