

**Coverage of Behavioral and Experimental Economics in Undergraduate
Microeconomics Textbooks**

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Coverage of Behavioral and Experimental Economics in Undergraduate Microeconomics Textbooks

Abstract: This paper analyzes to what degree undergraduate microeconomics textbooks incorporate the key contributions from behavioral economics and experimental economics, two branches of economics that have received increasing academic recognition in the last years.

We find great variation in the coverage of both behavioral and experimental economics ranging from detailed presentations to total disregard.

Ten of the 25 textbooks examined make no reference at all to behavioral economics concepts and models; six dedicate less than 1% of total pages to behavioral economics, six between 1% and 2.6 %, and three between 6% and 11%. When behavioral economics is discussed, the focus tends to be on bounded rationality rather than on bounded self-interest or bounded willpower.

Experimental economics is not discussed at all in ten textbooks, twelve textbooks dedicate less than 0.6% of total pages to it, while three dedicate between 2% and 10% of total pages.

We suggest that variation in coverage could be explained by different views on which topics belong to the core of undergraduate microeconomics, on whether behavioral and experimental economics may be too challenging to students fairly new to economics, and on how restricted the scope of applicability of behavioral economics models is felt to be.

Author Keywords: behavioral economics, economics education and teaching of economics, experimental economics, microeconomics, psychology, textbooks.

JEL classification codes: A22, B49, B59, D01.

1 Introduction

“Without doubt, the next hot research topic after new growth theory, at least here in Cambridge, has been behavioral economics, which integrates economics and psychology. [...] Research on behavioral economics has promise for providing new perspective on public policy.”

(Mankiw, Behavioral Economics, Greg Mankiw’s blog, 28 June 2006.)

So responds Gregory Mankiw’s, professor of economics at Harvard as well as author of one of the most popular undergraduate economics principles textbooks, to a reader who asked what had been the most important developments in economics in the last 10-15 years.

Mankiw’s evaluation of the importance of behavioral economics in research is shared by the Royal Swedish Academy of Science, which awarded in 2002 the Nobel Prize for economics to Daniel Kahneman, one of the fathers of behavioral economics. The Royal Swedish Academy of Science (2002) wrote:

“Today behavioral economics and experimental economics are among the most active fields in economics, as measured by publications in major journals, new doctoral dissertations, seminars, workshops, and conferences.”³

The significance of behavioral economics is also reflected by other prestigious awards such as the 2001 John Bates Clark medal, the highest recognition given to American economists under the age of 40, awarded in 2001 to Matthew Rabin for his work in behavioral economics.⁴

³ The growing importance of behavioral economics is far from limited to the economic journals. The journals *Science* and *Nature* have featured several articles on behavioral economics (e.g. Bernhard et al 2006, Camerer 2003, Fehr 2002, Fehr & Gächter 2003, Fehr & Rockenbach 2003, Kosfeld et al 2005, Lehrer 2006). In fact, Tversky’s and Kahneman’s 1974 seminal article in behavioral economics was published in *Science*. Behavioral economics has also been featured in magazines and daily newspapers such as the *Economist*, the *New York Times*, and the *Financial Times* (e.g. Harford 2007, Leonhardt 2007, Olin 2003, Behaviourist at the gate 2003, Rethinking thinking 1999).

⁴ In 1999 the John Bates Clark medal had been awarded to Andrei Schleifer for his research on securities markets and behavioral finance (Schleifer 2000). For a detailed history of behavioral economics the see Sent (2004).

In this paper, we investigate if behavioral economics in addition to being a hot research topic is also hot in economics teaching. More specifically, using content analysis (Bauer 2000), we examine how behavioral economics, that is, the branch of economics concerned with increasing the realism of the psychological foundations of economic analysis, is covered in undergraduate microeconomics textbooks.

We also analyze undergraduate microeconomics textbook coverage of experimental economics, the field of economics which studies economic behavior with the aid of laboratory experiments. Finally, we attempt an interpretation of the results of our textbooks' analysis using a variety of qualitative data.

The double focus on behavioral and experimental economics is motivated by the fact that although behavioral economists are methodological eclectics (Loewenstein 1999, F25), they often rely on laboratory experiments. Thus behavioral economics is closely related with experimental economics.⁵

Although behavioral and experimental economics share a common origin in psychology as well as the use of laboratory experiments (Loewenstein 1999, F25), there are significant differences between these economics fields (Altman 2004, 4). Behavioral economics tends to focus of those situations in which human behavior deviates from the one expected on the basis of conventional economic theory. It underlines bounded rationality, bounded self-interest, and bounded willpower (Mullainathan & Thaler 2001). Experimental economics, on the other hand, especially Vernon Smith's work,

⁵ Maybe in recognition of such close relationship the 2002 Nobel prize in economics was also awarded to Vernon Smith for having laid the foundations of experimental economics.

tends to emphasize economics agents' rationality and markets' efficiency. Smith himself writes (2004, 149):

“My point is simple: when experimental results are contrary to standard concepts of rationality, assume not just that people are irrational, but that you may not have the right model of rational behavior.”

Behavioral and experimental economics' different emphasis on the robustness of the assumption of agents' rationality, coupled with their increased academic recognition and great areas of overlap, raises the question of which contributions from these two economics fields will be presented in the textbooks. Undergraduate microeconomics textbooks are a key tool for socializing students to economics. Therefore, the inclusion or exclusion of experimental and behavioral economics may have important effects on how students will come to understand both economic theory and economic methods, especially in the case of students who will not take other courses in economics.

This paper is structured as follows: section two describes the data and the methodological approach; the results of the textbooks analysis are presented in sections three and four. Section five discusses the possible causes of the significant variability in textbooks' coverage of behavioral economics and experimental economics as it emerges from our analysis. Section six concludes.

2 Data and method of analysis

The main data for the analysis are given by the textbooks adopted for teaching undergraduate courses in microeconomics in the 30 world's top economics departments

as identified by Roessler (2004) following the methodology used in Kalaitzidakis et al (2003). The ranking is reported in appendix 2.

Top departments are at the cutting edge in research, which may make them also more prone to include such research into teaching. The choice of textbooks in these departments may thus pick up the more innovative trends in teaching.

The data on textbooks adoptions was collected by searching the internet for information about the textbooks adopted in the undergraduate courses in microeconomics lectured in 2006-2007 in the 30 world top economic departments.⁶ If textbook information could not be accessed via internet, we contacted the departments via e-mail asking for the syllabi of their undergraduate microeconomics courses. With the help of some helpful departments we could collect some syllabi. Our data, presented in appendix 3, covers the textbooks adopted in 28 introductory and 12 intermediate microeconomics courses in 27 of the 30 top economics departments, including 19 of the top 20 departments. The adopted textbooks were Besanko and Braeutigam (2005), Case and Fair (2007), Cowell (2005), Frank (2006), Frank and Bernanke (2006), Hubbard and O'Brien (2006), Krugman, Wells and Graddy (2008), Mankiw (2006), Nicholson (2005), Parkin (2008), Peters (2005), Pindyck and Rubinfeld (2006), Stiglitz and Walsh (2006), Taylor (2007), and Varian (2006).⁷

⁶ In some instances textbook data is either from the year 2005-2006 or 2007-2008 if we could not locate 2006-2007 data. See appendix 3 for details.

⁷ We could not find recent data on undergraduate microeconomics textbooks' adoption in the literature with the exception of Gartner (2001, 225), who examined microeconomics textbook adoption in a sample of European universities. According to his data Varian (1999) was the leading microeconomics textbook adopted in 40% of the sampled universities. Frank (2000) was the third most adopted textbook, with 6% of total adoptions after Katz and Rosen (1998) with 7%.

Due to partial access to course information, the data set often includes only one course per department. However, at any one time several microeconomics courses are likely to be taught simultaneously in the same department. Thus our data is only indicative of the textbooks adopted. For this reason and in order to increase the scope of the analysis, we complemented the list of adopted textbooks with additional undergraduate microeconomics' textbooks chosen by searching for bestselling titles in Amazon (22 August 2007) using the key word microeconomics. This led to the inclusion of the books by McConnell and Brue (2005), Colander (2005), and McEachern (2007). In addition, we reviewed also three “special-focus” textbooks: the institutionally-oriented Himmelweit, Simonetti and Trigg (2001)⁸, the experimental-economics rich Schotter (2001), and the behavioral and experimental economics focused Burkett (2005).⁹

In our analysis, we generally used the textbooks' printed version as we had access only to two books in electronic format. It is thus possible that we might have missed some behavioral economics related terms in the textbooks, if they had not been included in the analytical index, table of contents, or in the pages identified by them.

The results of the textbooks' analysis are interpreted with the aid of secondary, qualitative data such as articles on peer-reviewed journals, newspaper articles, as well as posts on economics blogs. These qualitative data are not systematically selected; thereby

⁸ Behavioral economics research can have important implications for institutional design, for instance, it may help justify forms of libertarian paternalism (Thaler & Sunstein 2003). The inclusion of Himmelweit, Simonetti and Trigg (2001) in the sample was thus meant to ascertain if and how behavioral economics would be included in such a institutionally oriented textbook.

⁹ As our analysis is restricted to undergraduate microeconomics textbooks, it excludes the very behavioral economics oriented textbook by Bowles (2004), which is meant for graduate students.

they offer only anecdotic evidence of the point of views on the teaching of behavioral and experimental economics in undergraduate microeconomics courses.

Having selected the textbooks, we constructed a list of key terms in behavioral economics on the basis of the review articles by Camerer and Loewenstein (2003), Mullainathan and Thaler (2001), and Rabin (1998 & 2002). The list, presented in appendix 6, was used as the basis for the search of both the textbooks' tables of contents and analytical indexes for behavioral and experimental economics related material. We then analyzed which key concepts of behavioral and experimental economics were presented and how in the pages identified through the analysis of the table of contents and of the analytical index. Two very rough quantitative indexes were then calculated: the number of pages dedicated to behavioral economics (table 1) and to experimental economics (table 2) as well as their percentage with respect to the total number of pages in the textbook dedicated to microeconomics excluding indexes and glossaries.

3 Coverage of behavioral economics and experimental economics: general results

Great variability emerges in the coverage of behavioral economics and experimental economics in undergraduate microeconomics textbooks as measured by our two indexes. As shown in table 1, ten of the 25 textbooks examined make no reference at all to behavioral economics concepts and models, six dedicate less than 1% of total pages to behavioral economics, six between 1% and 2.6 %, and three between 6% and 11%. When behavioral economics is discussed, the focus tends to be on bounded rationality

Table 1 Coverage of behavioral economics in selected undergraduate microeconomics textbooks

Textbook	# pages	tot pages*	% of total pages	bounded rationality	bounded self-interest	bounded will-power will-power	course adoptions	experimental economics
Behavioral + Experimental								
Burkett (2006)	33	296	11,15 %	yes	yes	yes	0	yes
Frank (2006)	52	678	7,67 %	yes	yes	yes	1	yes
Himmelweit et al. (2001)	34	556	6,12 %	yes	yes	no	0	yes
Frank & Bernanke (2006)	12	470	2,55 %	yes	yes	yes	2	yes
Varian (2006)	15	715	2,10 %	yes	yes	yes	7	yes
Schotter (2001)	14	729	1,92 %	yes	yes	no	0	yes
Colander (2005)	9	509	1,77 %	yes	yes	yes	0	yes
Hubbard & O'Brien (2006)	8	581	1,38 %	yes	yes	yes	2	yes
Mankiw (2006)	5	461	1,08 %	yes	yes	yes	11	yes
Stiglitz and Walsh (2006)	2	495	0,40 %	yes	no	no	1	yes
Taylor (2007)	2	514	0,39 %	yes	no	yes	1	yes
Krugman, Wells & Graddy (2008)	1	554	0,18 %	yes	no	no	2	yes
Only behavioral								
Pindyck & Rubinfeld (2006)	4	682	0,59 %	yes	yes	no	4	no
Beggs et al (2005)	0,3	331	0,09 %	yes	no	no	0	no
Besanko & Braeutigam (2005)	0,5	706	0,07 %	yes	yes	no	1	no
Only experimental								
MacEachern (2007)	0,3	380	0,08 %	no	no	no	0	yes
Parkin (2008)	0	488	0,00 %	no	no	no	2	yes
O'Sullivan, Sheffrin & Perez (2007)	0	435	0,00 %	no	no	no	0	yes**
No behavioral nor experimental								
Baumol & Blinder (2008)	0	441?	0	no	no	no	1	no
Case-Fair (2007)	0	458	0,00 %	no	no	no	1	no
Cowell (2005)	0	628	0,00 %	no	no	no	1	no
McConnel & Brue (2005)	0	488	0,00 %	no	no	no	0	no
Nicholson (2005)	0	648	0,00 %	no	no	no	2	no
Peters (2005)	0	139	0,00 %	no	no	no	1	no
Preston McAfee (2006)	0	314	0,00 %	no	no	no	0	no
							40	

* Total pages: total pages dealing with microeconomics excluding glossary and indexes.

If the book discussed also macroeconomics, only the chapters related to microeconomics were taken into account.

** Experimental economics per se is not discussed but several chapters contain instruction for experiments as classroom activities.

rather than on bounded self-interest or bounded willpower. As reported in table 2, experimental economics is not discussed at all in ten textbooks, twelve textbooks dedicate less than 0.6% of total pages to it, while three dedicate between 2% and 10% of total pages.

The variability in the coverage of behavioral and experimental economics suggests a certain degree of differentiation among undergraduate microeconomics textbooks. This differentiation, however, should not be overemphasized. In fact, the greatest outliers are not among the most adopted textbooks.

As shown in table 1, we distinguish four typologies of textbooks: 1) textbooks covering both behavioral and experimental economics, 2) textbooks covering behavioral economics but not experimental economics, 3) textbooks covering experimental economics but not behavioral economics, and 4) textbooks making no reference to behavioral nor to experimental economics.

4 Analysis of the Coverage of Behavioral Economics

Among the textbooks which discuss behavioral economics, a great deal of variability emerges.¹⁰ Some books include a short box (Beggs, Fisher, & Dornbush 2005, 235; Krugman & Wells 2006, 244;¹¹ Taylor 2007, 124-125). Others, such as Hubbard and

¹⁰ Thus one could question Uwe Reinhardt's (2007) view that "*there is not much more substantive difference in the structure and content of introductory economics texts than there is among different brands of toothpaste.*"

¹¹ In the European edition the corresponding box in Krugman, Wells, and Graddy (2007, 251) introduces behavioral economics with reference to studies on decision making under uncertainty and the anchoring effect.

O'Brien (2006, 284-290), Mankiw and Taylor (2006:455-459)¹², Pindyck and Rubinfeld (2005, 179-183), Stiglitz and Walsh (2006, 119-121, 202-203), concentrate the discussion of behavioral economics in clearly identifiable sections in the main text. Varian (2006, 549-563) includes an entire chapter dedicated to behavioral economics. Other textbooks scatter behavioral economics key ideas throughout the text (Colander 2005, Frank and Bernanke 2006).

Frank (2006) and Burkett (2006) emerge as the textbooks which offer the greatest coverage of behavioral economics. Frank (2006) includes a chapter on bounded self-interest (ch. 7, *Explaining Tastes: The Importance of Altruism and Other Nonegoistic Behavior*, 231-258) and one on bounded rationality and bounded will-power (ch. 8: *Cognitive Limitations and Consumer Behavior*, 259-283). Issues related to behavioral economics also show up in other parts of Frank's textbook, suggesting an effort to integrate the contributions of behavioral economics throughout the text.

Burkett (2006) touches on behavioral economics in the chapters on "Loss Aversion and Reference-dependent preferences" (ch. 11, 122-136), on "The Context and Framing of Choice" (ch. 12, 137-145), on "Inconsistent Intertemporal Choice" (ch. 13, 207-213), and on "Behavior in the Face of Risk" (ch. 20, 225-240). He illustrates in detail the experimental method while presenting key behavioral economics results. Also Schotter (2001) describes several experiments with the aid of which he illustrates a wide array of behavioral economics concepts.

¹² Mankiw and Taylor (2006) is the European edition to Mankiw's Principles of Economics 4th edition.

Table 2 Coverage of experimental economics in selected undergraduate microeconomics textbooks

Textbook	# pages dedicated to experimental economics	tot pages*	% of total pages	course adoptions
Schotter (2001)	74	729	10,15 %	0
Burkett (2006)	28	296	9,46 %	0
O'Sullivan, Sheffrin & Perez	9	435	2,07 %	0
Colander (2005)	3	509	0,59 %	0
Himmelweit et al. (2001)	3	556	0,54 %	0
Varian (2006)	3	715	0,42 %	7
Parkin (2008)	3	488	0,61 %	2
Hubbard & O'Brien (2006)	2	581	0,34 %	2
Frank (2006)	2	678	0,29 %	1
Frank & Bernanke (2006)	2	470	0,43 %	2
MacEachern (2007)	2	380	0,53 %	0
Taylor (2007)	2	514	0,39 %	1
Mankiw (2006)	1	461	0,22 %	11
Stiglitz and Walsh (2006)	1	495	0,20 %	1
Krugman, Wells & Graddy (2006)	1	554	0,18 %	2
Baumol & Blinder (2008)	0	441	0,00 %	1
Besanko & Braeutigam (2005)	0	706	0,00 %	1
Beggs et al (2005)	0	331	0,00 %	0
Case-Fair (2007)	0	458	0,00 %	1
Cowell (2005)	0	628	0,00 %	1
McConnel & Brue (2005)	0	488	0,00 %	0
Nicholson (2005)	0	648	0,00 %	2
Peters (2005)	0	139	0,00 %	1
Pindyck & Rubinfeld (2006)	0	686	0,00 %	4
Preston McAfee (2006)	0	314	0,00 %	0
				40

As it can be seen from table 4 in appendix 4, bounded rationality is the thematic area most discussed in the textbooks. This is not surprising, considering that it was research related to bounded rationality that led to Kahneman's 2002 Nobel Prize in economics.

Possibly most significant is the fact that two of the most adopted textbooks in the sample, Mankiw (2006) and Varian (2006) offer a well-round, albeit brief, introduction to behavioral economics. This could be read as a sign of increased attention to behavioral economics in undergraduate microeconomic textbooks

Finally, it appears that the analyzed textbooks share Krugman's and Well's (2006, 244) view that:

“it's hard to find a behavioral economist who thinks that the insights of this field should replace the analysis of utility maximization. The theory of the rational consumer remains the main way in which economists analyze consumer behavior.

(E.g. see also Stiglitz and Walsh 2006, 121, Besanko & Braeutigam 2005, 126, Pindyck & Rubinfeld 2005, 182).

5 Analysis of the Coverage of Experimental Economics

As shown in table 2, there is also significant variability in the textbooks' coverage of experimental economics and in its integration with behavioral economics. Some authors do not discuss experimental economics at all (Baumol & Blinder, Besanko & Braeutigam 2005, Cowell 2005, McConnell and Brue 2005, Nicholson 2005, Peters 2005, Preston McAfee 2006, Pindyck & Rubinfeld 2005) or limit their discussion to the statement that there is very limited scope for the use of laboratory experiments in

economics: “*Economics is only rarely an experimental science.*” (Beggs et al. 2005, 21), “... *economists cannot generally do controlled experiments...*” (Case & Fair 2006, 14). Other authors offer a brief paragraph, simply acknowledging the existence of experimental economics (Stiglitz & Walsh 2006, 321). Frank and Bernanke (2006, 462-463), Frank (2006, 269-270), Krugman et al. (2008, 251), and Varian (2006, 555, 560) illustrate some experiments but do not explicitly talk of experimental economics. Colander (2005, 201-202), Mankiw and Taylor (2006, 458), Hubbard and O’Brien (2006, 284-285) define experimental economics and exemplify it using the ultimatum game experiment. Himmelweit et al. (2001, 53-54) add to the definition of experimental economics the description of Simmel’s (1997) experiment to test consistency of choices.

McEachern (2007, 169) and Parkin (2008, 150-151) focus on those applications of experimental economics which “*show that under most circumstances, markets are extremely efficient*” (McEachern 2007, 168) and underline that “*Experiments have provided empirical support for economic theory*” (McEachern 2007, 169). Interestingly these are two of the three books which disregard completely behavioral economics. O’Sullivan et al (2007, 47, 96, 151, 252, 269, 297, 336, 353, 373) include brief sections titled “Economics experiments” at the end of some chapters. These sections give instructions for some experiments without however discussing the intuition behind the experiments. Burkett (2006) and Schotter (2001) offer the largest coverage of experimental economics. Schotter (2001) includes in his book numerous boxes called “*Experimental evidence*”, in which he describes various experimental tests of economic theories. Burkett (2006) widely discusses the derivation of behavioral economics key results from experiments.

6 Possible Causes of the Variability in the Coverage of Behavioral Economics

In this section, we restrict our focus to behavioral economics. On the basis of qualitative evidence, we suggest that variation in coverage could be explained by 1) disagreement as to what constitutes the core of microeconomics coupled with the need to avoid excessively long textbooks; 2) different views as to whether behavioral economics theories range of application is large enough; 3) different beliefs about how challenging behavioral economics models are to students new to economics and with limited background in mathematics and statistics.

Supersize Microeconomics Textbooks

“I skip it [behavioral economics], for two reasons. First, I find that otherwise I don't have time for oligopoly or other more important topics... “

“In intro micro, none of the three of us spends any time on behavioral economics, for the usual reason-there's not enough time to do everything.” “It [behavioral economics] is also ignored at Columbia, understandably, because of the wide array of topics that are crammed into the 300-person Principles class already.”

Comments to the post ‘Behavioral microeconomics blog’, 15 March 2007 on Marginal Revolution (Cowen 2007)

As the comments above suggests, lecturers are pressed with time when trying to cover the already wide content of microeconomics textbooks. Adding new topics without eliminating existing ones may thus run the risk of making textbooks and the courses

they are based on unmanageable.¹³ In fact, it could be argued that microeconomics textbooks may be already too long. As Mankiw (1998, 523) points out:

“It is easy to understand why textbooks are so long. A publisher incurs large fixed costs when producing a textbook, as it hires people to prepare everything from workbooks to websites. To protect this investment, the publisher sends a textbook manuscript to numerous reviewers, who offer important feedback to the publisher and author. At the same time, however, each reviewer also makes a plug for his or her own pet topic... The editor, whose training in economics is usually slight, then recommends adding the Herfindahl index, linked demand curves, the Gini coefficient, and the rest of the long list. The easiest course for the beleaguered author is to do as advised. When the book comes out, professors A, B, C, etc. - and especially their students - all agree that the book is too long.”

Indeed, there is a lively discussion among peers on what to add and what to eliminate from principles textbooks (see e.g. Round & Shanaham 2005, Hill and Myatt 2007, Pashigian and Self 2007, and Chatterji 2005).

Burkett (2006, vii), who gives quite extensive coverage to both experimental and behavioral economics within his relatively thin 296-pages textbook, argues that behavioral and experimental economics can be covered satisfactorily in an undergraduate microeconomics textbook, if one strikes a new balance between issues, theory and data. Conventional introductory textbooks, he suggests, focus on issues and theory, while more advanced textbook focus solely on theory. Data, usually from observational studies, is used minimally as it is felt that students lack the necessary econometric skills to understand the testing of theory with such data. Burkett (2006, vii) believes that the testing of theory via experimental data is more accessible to students and, therefore, should find greater place in textbooks.

¹³ Recognizing this, Varian (2006) for instance eliminated the chapter on law and economics when he added the chapter on behavioral economics.

Domain of application of behavioral economic models

Rather than being concerned with textbooks growing in size, Fudenberg (2006) calls into question whether behavioral economics theories range of application is large enough so as to justify their inclusions in a principles course. He argues that behavioral economics should not be taught as part of undergraduate microeconomics courses because there are “*too many behavioral theories, most of which have too few applications*”. He claims that behavioral economists have so far been unable to reduce the wide array of assumptions used in their models into a “*smaller set of primitive assumptions*”. Because of the restricted domain of applicability of behavioral economics models, he suggests they should be taught in specialized, field courses.

Fudenberg's view is not shared by Rabin (2002, 671), who believes behavioral economic models have indeed a wide range of applications. As an example, he underlines how present-biased preferences can be applied to: “*savings behavior, credit-card debt, the nature of marketing and advertising consumer goods, procrastination at work and at home, organizational design (to fight procrastination), the self-help industry, welfare participation rates, job search by the unemployed, and why people live poor and die prematurely from smoking, alcoholism, overweight, gambling, illicit drug use, unsafe sex, and other risky activities.*” (Rabin 2002, 671.)

Even though Fudenberg opposes the inclusion of behavioral economics in principles courses, he argues that behavioral facts, such as instances of preferences intransitivity and dependence on irrelevant alternatives, should be illustrated to students in introductory courses as a way to point out the limitations of the standard assumption in

economics. He also sees a role for the use of some behavioral economics models as examples or exercises. (Fudenberg 2006)

Behavioral economics too challenging?

“... as interesting as behavioral economics is, I think it mostly confuses the students.”

(Comment to the post Behavioral Economics Bleg on Marginal Revolution, March 15 2007)

The above comment suggests that introducing behavioral economics is detrimental to students' learning. Frank (2006, ix) disagrees and suggests that the concern with the excessive complexity of behavioral economics is understandable but unfounded:

“It may seem natural to wonder whether discussing examples of irrational choices might confuse students who are struggling to master the details of the rational choice model. Ironically, however, my experience has been exactly to the contrary.” (Frank 2006, ix.)

While the debate on how challenging behavioral economics can be to undergraduates remains open, there is some evidence that behavioral economics can be made more accessible to students by using classroom experiments. The use of classroom experiments is well documented (see for instance Becker et al., 2006) and there are suggestions that students who attend courses with experimental sections perform better than those in lecture-oriented introductory courses (Emerson and Taylor 2007, see also Dickie 2006).

An interesting question is also whether disregarding behavioral economics or, at least behavioral facts, can be demotivating and thereby detrimental to students' learning in so far as the students perceive too wide a gap between the economic theory presented to them in class and the behaviors they observe in everyday life.

We can wrap up the discussion by sighting Colander (2005, 253), who suggests that in the end:

“The deciding factor of what instructors teach in principles should not be what is most up-to-date but what adds the most value to students’ understanding of the economy. Given that decision factor, there are numerous pedagogical reasons why instructors might choose to teach something different from the latest research that economists do”

Whether behavioral and experimental economics do that seems to be still a contested issue.

8 Conclusions

Behavioral and experimental economics are among the most active research fields in economics. They have gained increasing recognition culminating with the award of the Nobel Prize to Daniel Kahneman and Vernon Smith in 2002. Nevertheless, as our analysis shows, undergraduate microeconomics textbooks cover both behavioral and experimental economics quite unevenly. Out of a sample of 25 undergraduate microeconomics textbooks, ten textbooks make no reference at all to behavioral economics concepts and models; six dedicate less than 1% of total pages to behavioral economics, six between 1% and 2.6 %, and three between 6% and 11%. Experimental economics is not discussed at all in ten textbooks, twelve textbooks dedicate less than 0.6% of total pages to it, while three between 2% and 10%.

Our textbooks’ analysis thus suggests the existence of some differentiation among undergraduate microeconomics textbooks: along with textbooks covering none, we find textbook which dedicate a considerable amount of space to behavioral economics (Frank 2006), to experimental economics (Schotter 2001), or to both (Burkett 2006).

However, one should not overemphasize this differentiation. When the focus is restricted to the textbooks which, in our sample, have the largest number of adoptions in introductory and intermediate microeconomics, respectively Mankiw (2006) and Varian (2006), a middle way approach seems to emerge with moderate coverage of behavioral economics and some references to experimental economics.

We suggest that this variation in coverage could be explained by disagreement as to what constitutes the core of microeconomics. Different beliefs about the challenge posed by behavioral and experimental economics to students new to economics and to what is most crucial in fostering students' understanding of the economy also seem to play a role.

Our results are restricted to textbooks and cannot be extended to teaching. Further research could analyze how behavioral and experimental economics are incorporated into the teaching of undergraduate microeconomics courses.

A particularly interesting topic for further research would be to examine the impact on students' cooperative behavior of taking an economics principle course which discussed behavioral economics, especially bounded self-interest. Frank's et al. (1996, 187; see also Frank et al. 1993) suggested that taking an economics principles course makes students "*marginally less likely to cooperate in social dilemmas*". One could test whether this result would still hold after a behavioral economics rich microeconomics course.

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Appendix 2 Ranking of Economics Departments (Roessler 2004)¹⁴

1	Harvard U	USA	210.7	121
2	U Chicago	USA	159.3	94
3	Massachusetts Institute of Technology (MIT)	USA	136.8	65
4	U California - Berkeley	USA	134.9	93
5	Princeton U	USA	118.3	52
6	Stanford U	USA	114.3	92
7	Northwestern U	USA	112.9	68
8	U Pennsylvania	USA	110.9	78
9	Yale U	USA	108.9	60
10	New York U (NYU)	USA	105.1	82
11	U California - Los Angeles (UCLA)	USA	94.9	70
12	London School of Economics (LSE)	UK	94.9	74
13	Columbia U	USA	93.2	85
14	U Wisconsin - Madison	USA	69.5	53
15	Cornell U	USA	68.6	66
16	U Michigan - Ann Arbor	USA	68.0	66
17	U Maryland - College Park	USA	67.4	65
18	U Toulouse I (Sciences Sociales)	France	65.3	34
19	U Texas - Austin	USA	62.1	43
20	U British Columbia	Canada	61.6	52
21	U California - San Diego	USA	61.4	29
22	U Rochester	USA	58.0	35
23	Ohio State U	USA	57.7	54
24	Tilburg U	Netherlands	56.8	58
25	U Illinois - Urbana-Champaign	USA	56.6	58
26	Boston U	USA	56.0	28
27	Brown U	USA	52.8	30
28	U California - Davis	USA	49.3	47
29	U Minnesota	USA	48.8	54
30	Tel Aviv U	Israel	48.0	35

Appendix 3 Adopted textbooks at top economics departments (see table 3 in Excel file)

Appendix 4 Analytical index analysis of microeconomics textbooks (see table 4 and 5 in Excel file)

¹⁴ Methodological notes are available at <http://www.econphd.net/rankings.htm> (viewed 29 May 2007) and the full ranking is available at <http://www.econphd.net/rank/rallec.htm> (viewed 29 May 2007)

Table 3 Adopted textbooks at top economics departments (appendix 3)						
University in ranking order	textbook	name of the course	introd.	interm.	term/year	instructor
Harvard U	Mankiw	Social Analysis 10 : Principles of Economics	1		full year 2006-07	Gregory Mankiw et al.
	Varian	Economics 1010a : Microeconomic Theory		1	fall 2006	n.a.
U Chicago	Parkin	Economics 19800 Introduction to Microeconomics		1	autumn 2006	Allen T. Sanderson
MIT	Pindyck & Rubinfeld	14.01Â Principles of Microeconomics		1	fall 2005	William C Wheaton
UC Berkeley	Pindyck & Rubinfeld	Economics 100A Economic analysis micro		1	spring 2006	Gordon Rausser
Princeton U	Nicholson	ECON 310 Microeconomic theory: a mathematical approach		1	spring 2007	Uwe Reinhardt
	Nicholson			1		Stephen Morris
Stanford U	no set text, recommended	Econ 51 Economic analysis 2		1	winter 2007	Adriana Lleras-Muney
Northwestern U	Mankiw	ECON Economics 202-0: Introduction to Microeconomics,	1		spring 2007	n.a.
	Hubbard & O'Brien	Economics 202 Introduction to Microeconomics	1		winter 2007	Martin Zelder
	Varian (recommended)	Economics 310-2 Intermediate Microeconomics		1	winter 2007	Eric Schulz
U Pennsylvania	Parkin	Economics 1 , economics 2 (introductory economics)	1		spring 2007	Todd Sarver
Yale U	Pindyck & Rubinfeld	Econ115b Introductory Economics (Micro),	1		spring 2006	George J Hall
New York U	Baumol & Blinder	Microeconomics C30-0001-001		1	fall 2007	n.a.
UCLA	Krugman & Wells	Principles of Economics – Microeconomics	1		spring 2007	Williman Baumol
LSE	Frank (required)	EC101: Introductory Microeconomics	1		summer 2007	Anne Bresnock
	Cowell	EC202 Microeconomics		1	2006-2007	Ronny Razin & Oriana Bandiera
	Varian (recommended)	EC101: Introductory Microeconomics	1		summer 2007	Frank Cowell
Columbia U	Mankiw	W1105y Principles of Economics	1		spring 2005 (same	n.a.
U Wisconsin Madison	Krugman & Wells	Economics 101 Principles of Economics	1		spring 2007	Padma Desai
	Mankiw	Economics 101	1		spring 2007	Johanna Hertel
Cornell U	Mankiw	ECON101-2 Introductory Microeconomics	1		fall 2006	Meta Brown
U Michigan Ann Arbor	Taylor	101 Principles of Economics I	1		fall 2007	Richard Burkhauser
U Maryland College Park	Mankiw	ECON200 Principles of Economics	1		spring 2007	n.a.
U Toulouse	n.a.					Daniel R. Vincent
U Texas Austin	Case & Fair	ECO304K Introduction to Microeconomics	1		fall 2007	n.a.
U British Columbia	Gateman	Microeconomics 101	1		fall 2006	Hamermesh
	Peters	ECO304 Honours microeconomics		1	fall 2005	Robert G Gateman
UC San Diego	Frank and Bernanke	Econ 1 Elements of economics	1		winter & spring 200	Michael Peters
U Rochester	Manikw	Principles of Economics 108	1		spring 2007	Landsburg Steven
Ohio State U	Mankiw	ECON H-200 Principles of Microeconomics	1		autumn 2006	James Peck
	Stiglitz & Walsh	Ohio State University Economics H200	1		summer 2007	Dan Levin
Tilburg U	n.a.					n.a.
U Illinois Urbana Champaign	Besanko and Braeutigam	Econ 302 Intermediate microeconomics (section 4)		1	spring 2007	Silve Parviainen

	Varian	Econ 302 Intermediate Microeconomic Theory		1	spring 2007	Stefan Krasa
Boston U	Mankiw	CAS EC101 Introductory Microeconomic Analysis		1	spring 2007	Todd Idson
Brown U	Mankiw	Economics 11 Principles of Economics		1	spring 2007	Roberto Serrano
	Varian	Economics 111: Intermediate Microeconomics		1	spring 2006	Pedro Dal Bó
UC Davis	Varian	Intermediate Microeconomic theory		1	spring 2006	Joaquim Silvestre
U Minnesota	Frank and Bernanke	APEC1101 Principles of Microeconomics http://www.apec.umn.edu		1	spring 2007	Steven J T Taff
	Hubbard & O'Brian	Econ 1101.05 Principles of microeconomics		1	summer 2007	Katherine Lande
	Mankiw	Principles of microeconomics 1101		1	spring 2006	Michael W. Walrath
Tel Aviv U	n.a.			28	12	n.a.

Appendix 5 Qualitative data for the discussion of possible causes of coverage

Behavioral Economics Bleg (2007), March 15 2007
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Appendix 6 List of key behavioral economics terms

Following Mullainathan and Thaler (2001), we grouped the behavioral economics-key concepts in three thematic areas: bounded rationality, bounded self-interest (also called bounded selfishness), and bounded willpower.

Bounded rationality: most of the key terms in this group relate to departures from the assumption of rational formation of beliefs, such availability bias, availability heuristics, biased estimates, bounded rationality, cognitive limitations, emotions, framing, hedonic framing, judgmental heuristics, mental accounts; misprediction, misrepresentation, and misremembering of one's own utility; overconfidence, preference reversal, projection bias, representativeness heuristics, satisficing, sunk costs and cognitive limitations. Other terms relate to the idea of reference-based utility functions such as anchoring, asymmetric value function, endowment effect, loss aversion, prospect theory, reference-dependent preferences, value function.

Bounded self-interest (also called bounded selfishness): includes all concepts linked to other-regarding behavior such as: altruism, co-operation (in public good and prisoners' dilemma games), envy, fair-minded utility, fair-mindedness, inequality aversion, non-self-interested behavior, process-regarding preferences, reciprocal altruism, reciprocal preferences, reciprocity, retaliation, social preferences, strong reciprocity, taste for fairness, taste for retaliation, and ultimatum games.

Bounded willpower: related to bounded will-power are concepts such as hyperbolic discounting, present-biased preferences, procrastination, and time inconsistency.

Table 4 Analytical index analysis of microeconomics textbooks: behavioral economics (appendix 4)

	HITS	Baumol & Bl	Begg et al.	Besanko & B	Burkett	Case & Fair	Colander
GENERAL							
behavioral economics/economists	9		235		122,133		201-203
BOUNDED RATIONALITY							
Allais, Maurice	1						
anchoring effect	4				235		
availability bias	3				232		
behavioral game theory	2				232		
biased estimates /biases	3				14		
bounded rationality	9				129		200
bracketing	1						
Camerer, Colin	2						390
constructed preferences	1						
endowment effect	4				122-127		
excessive choice	1						
excess risk aversion	1						
difficulty of deciding	1						
framing effect	3				140-142,209		
hedonic framing	1						
inconsistent preferences	1				207		
judgemental heuristics	2				232,235		
Kahneman, Daniel	11		235		133,150,229		201,203
Knetsch, Jack	3						
loss averse /loss aversion	2						
mental accounts	1						
out-of-pocket costs vs opportunity costs	1						
overconfidence	1						
present aim standard of rationality	1						
probability judgements (incoherent)	2				217		
prospect theory	3				229-232		
rational consumer	2						
reference point	1						
representativeness bias	1						
risk (behavior facing risk)	1				225-238		
satisficing /satisficers	3				14		
self-selection	1				122		
self serving attribution bias	1						
Simon, Herbert	3						200
status quo bias	2				122		203
sunk costs (failing to ignore)	5						203
Thaler, Richard	6				133		203
Tversky Amos	9				137, 150, 229		203
value function (asymmetric; hedonic framing)	3						
BOUNDED SELF-CONTROL							
addiction /addictive goods	3						468, 471
commitment devices (under preferences and..	1						
hyperbolic discounting	3				208		
negative time preference	1						
Laibson, David	2						204
Loewenstein, George	2						
self-control	5						468
time inconsistency	3						
BOUNDED SELF-INTEREST							

altruism	7			126	248		
choice under uncertainty	1						
cooperation and prisoner dilemma	1						
cooperators	1						
deterrence problem and non-egoistic behavior	1						
dictator games	1				248		
fairness	9				163		410-411
fairness norms	1						
Fehr, Ernst	1						
Guth, Werner	2						
homo-reciprocans	1						
non-egoistic behavior	1						
O'Donoghue, Ted	1						
punishment game	1						
Rabin, Matthew	1						
second-party preferences	1						
Selten, Reinhardt	2						311
social norms	6						
ultimatum game	5						202

	Cowell	Frank	Frank & Bernanke	Himmelweit et al. (2005)
GENERAL				
behavioral economics/economists				
BOUNDED RATIONALITY				
Allais, Maurice				
anchoring effect		275-276		
availability bias		271-272		
behavioral game theory				
biased estimates /biases		275		
bounded rationality		260-261	8_14	219-220
bracketing				
Camerer, Colin			403n	
constructed preferences				
endowment effect				
excessive choice				
excess risk aversion				
difficulty of deciding		276-278		
framing effect				
hedonic framing		265-269		
inconsistent preferences				
judgemental heuristics		271-276		
Kahneman, Daniel		228,261		8n
Knetsch, Jack				
loss averse /loss aversion		262-263		
mental accounts		261		
out-of-pocket costs vs opportunity costs		265		
overconfidence				
present aim standard of rationality		233-235		
probability judgements (incoherent)				
prospect theory				
rational consumer				
reference point				
representativeness bias		272-275		
risk (behavior facing risk)				
satisficing /satisficers		262		
self-selection				
self serving attribution bias				
Simon, Herbert		260, 264-265		
status quo bias				
sunk costs (failing to ignore)		264-265	10&11	
Thaler, Richard		6,11n,8		11n, 403n
Tversky Amos		228,261		8n
value function (asymmetric; hedonic framing)		262-264,265,270-271, 265-269		
BOUNDED SELF-CONTROL				
addiction /addictive goods				
commitment devices (under preferences and...)		241-249		
hyperbolic discounting				
negative time preference		176,180-181		
Laibson, David				
Loewenstein, George		180-181	403n	
self-control		279-280	626-627	
time inconsistency				
BOUNDED SELF-INTEREST				

altruism		241-248	338	147-53, 165, 169-171,180,
choice under uncertainty		269-271		
cooperation and prisoner dilemma				
cooperators		242-248		
deterrence problem and non-egoistic behavior		249		
dictator games				
fairness		251-255		
fairness norms				
Fehr, Ernst				
Guth, Werner				
homo-reciprocans				
non-egoistic behavior		233-235,249,247,251-255		
O'Donoghue, Ted				
punishment game				
Rabin, Matthew	560***			
second-party preferences				
Selten, Reinhardt				
social norms			368-369	191-9, 546-52
ultimatum game		251-255		

	Hubbard & O'Brien	Krugman & Wells	Krugman et al	Mankiw & Taylor
GENERAL				
behavioral economics/economists	287-290	244	251	455,458,459
BOUNDED RATIONALITY				
Allais, Maurice	285			
anchoring effect			251	
availability bias				455
behavioral game theory				
biased estimates /biases				
bounded rationality		244	251	
bracketing				
Camerer, Colin				
constructed preferences				
endowment effect	288			
excessive choice				
excess risk aversion				
difficulty of deciding				
framing effect				
hedonic framing				
inconsistent preferences				
judgemental heuristics				
Kahneman, Daniel	285,286,287,289,291	244	251	
Knetsch, Jack	285,286,287			
loss averse /loss aversion				
mental accounts				
out-of-pocket costs vs opportunity costs				
overconfidence				
present aim standard of rationality				
probability judgements (incoherent)				
prospect theory				
rational consumer		230, 244	251	
reference point				
representativeness bias				
risk (behavior facing risk)				
satisficing /satisficers				455
self-selection				
self serving attribution bias				
Simon, Herbert		244	251	
status quo bias				
sunk costs (failing to ignore)	289			
Thaler, Richard	285,286,287			
Tversky Amos	289	244	251	
value function (asymmetric; hedonic framing)				
BOUNDED SELF-CONTROL				
addiction /addictive goods				136
commitment devices (under preferences and...)				
hyperbolic discounting				
negative time preference				
Laibson, David				
Loewenstein, George				
self-control	289-290,297h			459
time inconsistency	290			459
BOUNDED SELF-INTEREST				

altruism				
choice under uncertainty				
cooperation and prisoner dilemma				335-6
cooperators				
deterrence problem and non-egoistic behavior				
dictator games				
fairness	284-287, 29	15, 325-328, 495-496 (of taxes)		458
fairness norms				
Fehr, Ernst				
Guth, Werner	285			
homo-reciprocans				
non-egoistic behavior				
O'Donoghue, Ted	297h			
punishment game				
Rabin, Matthew	297h			
second-party preferences				
Selten, Reinhardt	285			
social norms		301	310	
ultimatum game	284-2285			458

	Mc Eachern	McConnell & Brue	Nicholson	O'Sullivan et al.	Parkin
GENERAL					
behavioral economics/economists					
BOUNDED RATIONALITY					
Allais, Maurice					
anchoring effect					
availability bias					
behavioral game theory					
biased estimates /biases					
bounded rationality	269				
bracketing					
Camerer, Colin					
constructed preferences					
endowment effect					
excessive choice					
excess risk aversion					
difficulty of deciding					
framing effect					
hedonic framing					
inconsistent preferences					
judgemental heuristics					
Kahneman, Daniel					
Knetsch, Jack					
loss averse /loss aversion					
mental accounts					
out-of-pocket costs vs opportunity costs					
overconfidence					
present aim standard of rationality					
probability judgements (incoherent)					
prospect theory					
rational consumer					
reference point					
representativeness bias					
risk (behavior facing risk)					
satisficing /satisficers					
self-selection					
self serving attribution bias					
Simon, Herbert			4		
status quo bias					
sunk costs (failing to ignore)					
Thaler, Richard					
Tversky Amos					
value function (asymmetric; hedonic framing)					
BOUNDED SELF-CONTROL					
addiction /addictive goods			92-93		
commitment devices (under preferences and...)					
hyperbolic discounting					
negative time preference					
Laibson, David					
Loewenstein, George					
self-control					
time inconsistency					
BOUNDED SELF-INTEREST					

altruism			94-95		
choice under uncertainty					
cooperation and prisoner dilemma					
cooperators					
deterrence problem and non-egoistic behavior					
dictator games					
fairness			8		
fairness norms					
Fehr, Ernst					
Guth, Werner					
homo-reciprocans					
non-egoistic behavior					
O'Donoghue, Ted					
punishment game					
Rabin, Matthew					
second-party preferences			93		
Selten, Reinhardt					
social norms					
ultimatum game					

	Pindyck & Rubinfeld (2006)	Preston McAfee	Schotter	Stiglitz & Walsh
GENERAL				
behavioral economics/economists	179-183			119-121
BOUNDED RATIONALITY				
Allais, Maurice				
anchoring effect				
availability bias				
behavioral game theory				
biased estimates /biases				
bounded rationality				
bracketing				
Camerer, Colin				
constructed preferences				
endowment effect			113-114	120
excessive choice				
excess risk aversion				
difficulty of deciding				
framing effect			673-675	
hedonic framing				
inconsistent preferences				
judgemental heuristics				
Kahneman, Daniel	180		113-114, 566-567	
Knetsch, Jack	180		113-114	
loss averse /loss aversion				
mental accounts				
out-of-pocket costs vs opportunity costs				
overconfidence				
present aim standard of rationality				
probability judgements (incoherent)				
prospect theory			566-567	
rational consumer				
reference point	180			
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