

Behavioural Economics and Finance

Michelle Baddeley

Routledge

Taylor & Francis Group

LONDON AND NEW YORK

Table of contents

<i>List of illustrations</i>	xv
<i>Acknowledgements</i>	xvii
PART 1	
Background	1
1 Introduction	3
What is behavioural economics?	3
Why behavioural finance?	3
A quick history of behavioural economics	4
<i>David Hume</i>	4
<i>Adam Smith</i>	5
<i>Jeremy Bentham</i>	5
<i>Vilfredo Pareto</i>	6
<i>Irving Fisher</i>	6
<i>John Maynard Keynes</i>	6
<i>Friedrich von Hayek</i>	7
<i>George Katona</i>	8
Modern behavioural economics versus standard approaches	8
<i>What are the standard assumptions of neoclassical economics?</i>	tf
Methodological tools	10
<i>Game theory</i>	II
<i>Experimental economics</i>	II
Behavioural policy implications	13
<i>The structure of Behavioural Economics and Finance</i>	14
<i>A note on mathematics</i>	16
Further reading	16
<i>Some introductions to behavioural economics</i>	16
<i>Behavioural game theory/classical game theory</i>	16
<i>Experimental economics</i>	17
<i>Experimental software</i>	17
2 Foundations: psychology	18
Introduction	18

viii *Table of contents*

Personality theory 19
Freud's psychoanalytic theory 19 *
Jung's archetypes 20
Modern personality theory 20
Measuring cognitive skills 21
Personality tests 21
Cognitive functioning 22
Behavioural psychology 23
Social psychology 25
Social learning theory 26
Social influences and social pressure 27
Conclusion 28
Further reading 29

3 Foundations: neuroscience and neuroeconomics 30

Introduction 30
What are nerves and how do they work? 30
Anatomy of the brain 32
Brain areas and functions 34
Modularity 35
Neuroscientific data and techniques 36
Neuroeconomics 41
What is neuroeconomics? 41
Neuroeconomic data 42
Neuroeconomic models and theories 43
Controversies in behavioural economics and neuroeconomics 45
What's next? 46
Further reading 47

PART 2

Behavioural microeconomic principles 49

4 Learning 51

Introduction 51
Belief learning 51
A belief learning model 52
Cheung and Friedman's experiments 53
Reinforcement learning 54
A reinforcement learning model 55
Erev and Roth's empirical evidence 57
Experience-weighted attraction 58
Experimental evidence about EWA models 58
Comparative econometric evidence on EWA versus RL and BL models 60
Social learning and information cascades 61
Social learning theories 61
Experimental tests of Bayesian herding 63

/	<i>Other behavioural approaches to social learning</i>	66	
	Social influence	67	>
	Evolutionary approaches	68	
	Neuroeconomic analyses of learning and social influence	70	
	<i>Belief learning and reinforcement learning</i>	70	—
	<i>Reward learning and reward prediction error</i>	70	
	<i>Observational learning</i>	71	
	Case study: social influences in real-world networks	73	
	<i>Social influences on household energy decisions</i>	73	
	<i>Firms' reputation-building and corporate social responsibility</i>	73	
	<i>A study of social influences in Indian villages</i>	74	
	Conclusions and policy implications	75	
5	Sociality and identity		77
	Introduction	77	
	Some experimental evidence	77	
	<i>Ultimatum games and dictator games</i>	79	
	<i>Experiments with trust games</i>	80	
	Social preference models	81	
	<i>Social utility models</i>	81	
	Cooperation and punishment	86	
	<i>Altruistic punishment</i>	86	
	<i>Extrinsic versus intrinsic motivations</i>	86	
	<i>Evolution and social cues</i>	88	
	<i>Ostracism in social networks</i>	88	
	Identity	89	
	<i>Social identity theory</i>	89	
	<i>Akerlof and Kranton's identity theory</i>	90	
	Neuroeconomic analyses	91	
	<i>de Quervain et al.'s analysis of altruistic punishment in the trust game</i>	91	
	<i>Neuroeconomic studies of empathy and trust</i>	95	
	Case study: social norms and environmental decision-making	96	
	<i>Fairness and inequity aversion</i>	96	
	<i>Social norms</i>	97	
	<i>Familial influence and identity</i>	99	
	Conclusions and policy implications	100	
6	Heuristics and biases		102
	Introduction	102	
	Defining rationality	102	
	<i>Procedural versus substantive rationality</i>	103	
	<i>Ecological rationality</i>	103	
	<i>Kahneman's maps of bounded rationality</i>	104	
	Heuristics and decision-making	105	
	Tversky and Kahneman on heuristics and biases	106	
	<i>Representativeness</i>	106	
	<i>Availability heuristic</i>	111	

' *Anchoring and adjustment* 114
Loss aversion, endowment effects and status quo bias 116 *
Biases and heuristics in expert judgment 118
 Choice overload and cognitive dissonance 119
Choice overload 119 *
Cognitive balance and cognitive dissonance 120
 Neuroeconomic analyses 121
 Case study: heuristics and biases in real-world decision-making 122
Online heuristics and biases 122
Heuristics, biases and folk wisdom in environmental decision-making 124
 Conclusions and policy implications 126

7 Prospects and regrets

128

Introduction 128
 Behavioural paradoxes 128
St Petersburg paradox 128
Allais paradox 129
Ellsberg paradox 129
Monty Hall/three prisoners paradox 130
 Expected utility theory 131
Bar-Hillel and Falk's solution to the three prisoners problem 131
 Kahneman and Tversky's critique of expected utility theory 132
Certainty effect 135
Reflection effect 136
Isolation effect 137
 Kahneman and Tversky's prospect theory 138
Editing phase 138
Evaluation[^] 139
The value function 139
Loss aversion 141
The weighting function 141
Evidence from game shows 143
Cumulative prospect theory 144
 Mental accounting and framing 144
Mental accounting 144
Framing and bracketing 146
 Regret theory 147
 Neuroeconomic analyses 149
 Case study: buying insurance 150
 Conclusions and policy implications 151

8 Personality, moods and emotions

153

Introduction 153
 Personality and individual differences 153
'Personality and cognition 155
Personality and preference parameters 155
Individual differences and human capital investment 156

Moods	158	
<i>Moods and weather patterns</i>	158	»
<i>Social mood in socioeconomic analyses</i>	158	
Emotions and affect	159	
<i>Emotions and heuristics</i>	160	
<i>The somatic marker hypothesis</i>	160	
<i>Basic instincts and visceral factors</i>	162	
<i>Social emotions</i>	163	
Cognition and emotion in dual-system models	164	
Neuroeconomic analyses	167	
<i>Sanfey et al's/MRI study of social emotions</i>	167	
<i>Neuroeconomic studies of empathy</i>	170	
Case study: emotional trading	170	
Conclusions and policy implications	172	
9 Time and plans		174
Introduction	174	
Exponential discount functions	174	
<i>Individual differences with exponential discounting</i>	174	
Behavioural discount functions	175	
<i>Behavioural anomalies</i>	175	
<i>A nimal models</i>	176	
<i>Behavioural discounting models</i>	176	
<i>Time inconsistency in the real world</i>	179	
Behavioural life-cycle models	181	
<i>Limitations of the Angeletos et al. behavioural life-cycle model</i>	183	
Temporal mental accounting and bracketing	184	
<i>Bracketing in labour supply</i>	184	
Neuroeconomic analyses	185	
<i>McClure, Laibson, Loewenstein and Cohen's MRI evidence</i>	185	
<i>Glimcher, Kable and Loeu's analysis of delayed choices</i>	186	
Case study: intertemporal planning and the environment	187	
<i>Behavioural discount functions for environmental decision-making</i>	187	
<i>Goals, planning and feedback</i>	188	
Conclusions and policy implications	189	
10 Bad habits		191
Introduction	191	
Rational addiction models	191	
<i>Becker, Grossman and Murphy's model</i>	191	
<i>Becker and Murphy's empirical evidence</i>	195	
<i>Other econometric studies of addiction</i>	196	
<i>Rational addiction models: summary of evidence and implications</i>	199	
Cue-triggered consumption	200	
<i>Laibson's cue theory of consumption</i>	201	
<i>Bernheim and Rangel on hot-cold systems</i>	201	
<i>Cues in natural addiction models</i>	202	

xii *Table of contents*

Visceral factors 203
Neuroeconomic analyses 204
Naqvi et al.'s lesion patient study 204
Post-mortem studies 205
Case study: healthy lifestyles 205
Bad health habits: not going to the gym 207
Conclusions and policy implications 208

PART 3

Macroeconomics and financial markets 211

11 Financial instability 213

Introduction 213
Herding, learning and social influences 214
Social learning 214
Beauty contests 215
Reputation 216
Heuristics, biases and prospect theory 216
Over-reactions and under-reactions 217
Diversification biases and the availability heuristic 218
Momentum trading 219
Prospect theory, loss aversion and ambiguity aversion 219
Time and instability 221
Moods, emotions and personality 222
An emotional finance model 223
Akerlof and Shiller's animal spirits 224
Neuroeconomic evidence 225
Risk, impulsivity and fear 226
Financial herding and social emotions 227
Conclusions and policy implications 230

12 Behavioural macroeconomics, happiness and wellbeing 232

Introduction 232
Keynes's psychology of the macroeconomy 233
Keynes's fundamental psychological laws 233
Expectations and the state of confidence 233
Macroeconomic conventions 234
Entrepreneurial animal spirits 235
A behavioural analysis of macroeconomic interactions 236
Akerlof and Shiller's animal spirits 237
Macroeconomic actors 238
Investment 238
Consumption and saving 242
Labour markets and unemployment 243
Government policy-making 244
Happiness 245

<i>Utility and happiness</i>	246	
Wellbeing	247	>
<i>Measuring wellbeing</i>	249	
<i>Wellbeing and the environment</i>	250	
Neuroeconomic studies of happiness	252	—
Conclusions and policy implications	253	
<i>Bibliography</i>		255
<i>Index</i>		284