

Expanded Table of Contents

List of Figures	<i>page</i> xvii
Preface	xxi
Acknowledgments	xxv
Part I Learning	1
1 Core Assumptions	3
Is Behavior Lawful?	4
Determinism versus Free Will	5
Examples of Lawful Behavior	6
The Feeling of Freedom	7
Evaluation	10
How Should We Discover Any Laws?	11
Introspection	11
The Experimental Method	14
The Nature of Scientific Progress	15
The Use of Animals	17
The Advantages	17
Talking Animals	19
Ethical Issues	23
Behavioral and Cognitive Approaches	24
Learning	25
Defining Learning	25
Habituation	26
Sensitization	28
Associative Learning	30
Memory	32
Photographic?	32
Conscious?	33
Learning and Memory	34
Summary	35
A Suggestion for Studying	36
Review Questions	37

x	Expanded Table of Contents	
2	Classical Conditioning	38
	The Associative Context	39
	Descartes	39
	The British Associationists	39
	Pavlov	40
	An Associative Analysis	41
	Controlling the Conditions	43
	A Typical Experiment	44
	Basic Phenomena	46
	Extinction	46
	Generalization and Discrimination	51
	Second-Order Conditioning	52
	Counterconditioning	53
	The Need for Control Groups	54
	Little Albert	54
	Pseudoconditioning	55
	Unpaired and Random Groups	56
	Three Useful Responses	58
	The GSR	58
	Fear	59
	Taste-Aversion Learning	61
	Summary	64
	Review Questions	64
3	Conditioning Principles and Theories	65
	Principles	65
	Contiguity, Frequency, and Intensity	65
	Challenges to Contiguity	69
	Theories	78
	Conditioning in Animals	78
	A Two-System Hypothesis	83
	An Unconscious System?	85
	The Rescorla–Wagner Model	89
	The Model	90
	The Model’s Successes	94
	The Model’s Limitations	98
	Evaluation	99
	Summary	100
	Review Questions	101

4	Conditioning Applications	103
	What Behavior Can Be Conditioned?	103
	Autonomic and Skeletal Responses	103
	Emotions	107
	Applications of Conditioning	110
	Addiction	110
	Phobias	112
	Summary	116
	Review Questions	117
 5	 Reinforcement	 118
	Thorndike's Law of Effect	119
	Are Animals Intelligent?	119
	The Law of Effect	120
	Some Controversial Issues	121
	The Reinforcer	123
	Primary Reinforcers	123
	Secondary Reinforcers	125
	Social Reinforcers	126
	Negative Reinforcers	127
	Delay of Reinforcement	129
	Research with Animals	129
	Research with Humans	131
	Schedules of Reinforcement	135
	Ratio and Interval Schedules	136
	Patterns of Responding	137
	The Partial Reinforcement Effect	139
	Choosing a Schedule	140
	A Criminally Successful Application	140
	Motivation	142
	Contrast Effects	143
	The Yerkes–Dodson Law	144
	Stimulus Control	147
	Generalization	147
	Attention	148
	Perceptual Learning	149
	Practical Applications	150
	A Preliminary Application	153
	Summary	154
	Review Questions	156

xii	Expanded Table of Contents	
	6 Reinforcement Applications	158
	Schools, Tokens, and Autism	159
	Classroom Behavior	159
	The Token Economy	161
	Autism	162
	The Problem of Maintaining Behavior	165
	The Danger of Extinction	165
	Tactics for Encouraging Maintenance	166
	Harmful Effects of Reinforcement	168
	Moral Objections	168
	Undermining Intrinsic Motivation	169
	Determinants of Undermining	170
	Evaluation	172
	Self-Control	174
	Willpower?	174
	A Behavioral Analysis	175
	Improving Your Studying	178
	Summary	179
	Review Questions	180
	7 Punishment	181
	Principles of Punishment	181
	Methodological Issues	181
	Is Punishment Effective?	184
	Principles	187
	Side Effects of Punishment	192
	Fear	192
	Aggression	195
	Conclusions	198
	Alternatives to Corporal Punishment	199
	Reinforcing Good Behavior	199
	Extinction	200
	Time-Out	202
	Response Cost	203
	Summary	205
	Review Questions	206
	8 Theories of Reinforcement	207
	Association or Expectation?	209
	S-R and Cognitive Theories	209

Convergence	211
The Problem of Ambiguity	214
Two Systems	215
The Evolution of Two Systems	215
Automatization	215
Consensus	216
Reinforcement without Awareness?	217
Yes	218
But, Hypothetically Speaking . . .	219
Summary	221
Choosing a Response	221
A Behavioral Analysis	222
A Rational Analysis: Expected Utility	224
An Irrational Analysis: Kahneman and Tversky	225
Evaluation	232
Summary	233
Review Questions	234
Part II Memory	235
9 Memory: An Introduction	237
Practice Makes Perfect	238
Ebbinghaus's Memory	238
The Importance of Practice	241
It Was All Nonsense!	243
Levels of Processing	243
Chomsky's Grammar	246
Motor Skills	248
Practice	249
Feedback	250
Motor Programs	252
Behaviorism and Cognition	254
An Information-Processing Framework	255
The Computer Analogy	256
Two Clues to a Model of Memory	258
The Atkinson–Shiffrin Model	260
The Model	260
Its Predictions	262
Summary	266
Review Questions	267

xiv **Expanded Table of Contents**

10 Working Memory	268
Sensory Memory	268
From Features to Grandmothers	269
Top-Down Processing	271
Storing the Evidence	273
Short-Term Memory	276
Does STM Exist?	276
Do Memories in STM Decay?	279
Working Memory	282
The Mental Workbench	283
Three Components	284
STM as Activated LTM	287
Evaluation	289
Consolidation	291
Attention	295
Narrower than We Realize	295
Theories of Attention	299
Evaluation	304
Summary	305
Review Questions	306
11 Long-Term Memory	308
Introduction	308
Explicit Memory	309
Episodic and Semantic Memories	310
Are They Really Different?	311
Implicit Memory	314
Perceptual Memory	314
Procedural Memory	315
Priming	316
A Deeper Look at Meaning	318
Concepts	319
Semantic Networks	322
Propositions	328
Schemas	332
A Meaningful Summary	337
Summary	338
Review Questions	339

12 Retrieval	341
Why Do We Forget?	341
Decay versus Interference	342
Sources of Interference	344
Erasure or Loss?	348
Summary	353
Retrieval Processes	354
A Simple Model	354
Retrieval Cues	355
Encoding Specificity	359
Cue Overload	360
Inhibition	361
Retrieval-Induced Forgetting	362
Deliberate Forgetting	364
Memory as Reconstruction	366
Reconstructing the Past	367
Source Confusion	369
Revisiting the Warehouse	374
Summary	375
Review Questions	376
13 Applications	378
Mnemonics	378
The Method of Loci	379
Why Is It Effective?	380
Studying	384
Practice	384
Think!	385
Review	387
Eyewitness Testimony	389
Is Eyewitness Testimony Accurate?	390
Attention	391
Source Confusion	391
Emotional Intensity	392
Improving Testimony	394
Recovered Memories	398
Recovered Memories Can Be Real	398
Recovered Memories Can Be False	400
Why Are Some Memories False?	401
Evaluation	402
Summary	404
Review Questions	404

xvi **Expanded Table of Contents**

	Part III Neural Foundations	407
14	From Neurons to Neural Networks	409
	The Brain and Behavior	409
	Movement	412
	Emotion	412
	Thought	414
	Personality	415
	Neural Network Models	416
	A Model	416
	Explaining Concept Learning	421
	Explaining Life, the Universe, and Everything	425
	Associative Learning	426
	Memory	426
	Deep Learning	427
	Evaluation	430
	Problems	430
	But . . .	431
	Summary	433
	Review Questions	434
	References	436
	Author Index	491
	Subject Index	501