Preface to Second Edition

1	Modern psychology: Historical Roots and Current	
	Problems	15
	Fields of psychology	15
	Philosophical origins	18
	Biological origins	21
	Psychological mainstream	23
	Interdisciplinary influences	24
	Traditional puzzles	27
	Methods of psychology	29
2	Comparative and Ethological Perspectives	32
	The evolution of behaviour	32
	Traditional comparative psychology	33
	Traditional ethology	38
	The merging of approaches	39
	Animal behaviour and the human species	41
3	Psychogenetics and Maturation	44
	Nature and nurture	44
	Genetics of structure, function and behaviour	44
	Animal psychogenetic studies	49
	Human psychogenetic studies	55
	Maturation, development and growth	60
	Some characteristics of the developmental process	70
	Differentiation	70
	Successive stages	72
4	ৰীe Nervous System and Behaviour	76
	Introduction	76
	Nervous transmission	78

The structure of neurons	79
The nerve impulse and the frequency code	80
Neurotransmitters and the synapse	81
The electrical recording of neuronal activity	84
The structure of the CNS	86
The brain	88
The spinal cord	99
The ANS and the endocrine system	101
The ANS	101
The measurement of ANS activity	104
The endocrine system	106
Methodological and theoretical issues	108
Localization of function	108
The evolution of the brain	123
Sleep and Dreaming	128
The measurement of sleep	128
Sleep as a dependent variable	134
The nocturnal sleep profile	134
Age and sleep	135
Sleep patterns and the quality and duration of sleep	136
The depth of sleep	138
Sleep deprivation	140
Theories of sleep	144
The physiology of sleep	145
Neural mechanisms of sleep and wakefulness	146
The functions of sleep	152
Dreaming	156
Motivation	160
The concept of motivation	160
Views of motivation	164
Instinct theories	164
Psycho-dynamic theories	170
Needs and drives	173
The physiological approach	180
The cognitive approach	186
The place of motivation in psychology	189
Emotion	191
Introduction	191

		Contents
	Psychological theories of emotion	19
	James's theory of emotion	- 19
	Criticisms of James's theory	19
	Cognitive theories of emotion	20
	Emotion and the brain	21
	The hypothalamus	21
	The limbic system	21
8	Sensory Processes	21
	Introduction	21
	Some classical and contemporary views of the senses	21
	Johannes Muller's doctrine of specific nerve energies	21
	Sherrington's classification	. 22
	The problem of proprioception	22
	Gibson's classification	22
	Visual kinaesthesis	22
	Receptor function	22
	Some general principles	22
	Lateral inhibition	22
	Levels of processing	23
	Negative after-effects	23
	Gibson's principle	23
	Visual after-effects of motion	. 24
	Contingent after-effects	24
	Sensory rearrangement	24
	Visual and inertial distortion	24
	Perceptual adaptation	24
	Theories of perceptual adaptation	24
9	Attention	25
	Introduction	25
	Selective attention	25
	Focused attention tasks	25
	Divided attention tasks	25
	Theories of selective attention	25
	Attention and effort	26
	Processing load and attention	26
	Arousal and selectivity	26
	Alertness and sustained attention	27

Alertness

	Sustained attention and vigilance Conclusions		271 275
10	Perceptual Organization		278
	Sensation and perception		278
	Non-specific stimulation, and 'laws' of organization		281
	Constancies and illusions		286
	Perceptual set and 'motivated perception'		293
11	Perceptual Development		301
	The innate-learned controversy		301
	The perceptual abilities of infants		309
	Perceptual development beyond babyhood		314
12	Early Experience		321
	Introduction		321
	Sensory stimulation		322
	Additional stimulation		322
	Early sensory deprivation	,	323
	'Social' experience		325
	Imprinting		325
	Socialization in mammals		328
	Parental care	•	330
	Critical periods		332
	Early development of individuality		334
	•		
13	Learning	t vý	336
	Introduction		336
	Simple learning situations		337
	Classical conditioning		337
	Instrumental conditioning		340
	Habituation		344
	Exposure learning		344
	Special problems of learning		346
	Reinforcement		347
	Learning and punishment		351
	Mediating and cognitive processes		353
	Transfer of training		356
	Constraints on learning		358
	Some theoretical issues		360

14	Skilled Performance	363
•	What is skill?	363
	Definitions of skill	363
	The pioneers (1890–1920)	364
	The post-war period to the present	366
	Stages in the acquisition of skill	369
	Plan formation	369
	Perceptual organization	370
	Economy of motor action	371
	Timing	373
	Automatic execution	374
	The control of skilled performance	375
15	Voluntary Behaviour	380
	Introduction	380
	Ideomotor theory: past and present	384
	Ideomotor theory: the classical version	384
	Ideomotor theory: subsequent developments	386
	Evidence relevant to the ideomotor theory	388
	The reafference principle	392
	Necessary features of a theory of volition	395
	The voluntary-involuntary distinction	396
16	Remembering	399
	Introduction	399
	Short-term and long-term memory	401
	Memory and learning	401
	Two-store theories of memory	402
	Levels of processing and 'working memory'	.406
	Long-term memory organization	408
	Verbal and imaginal coding	408
	Ordering and categorization	409
	The use of mnemonics	411
	Memory for connected language	413
	Semantic memory	415
	Forgetting	418
	Decay	418
	Interference theory	421
	'Spontaneous change'	426
	Repression or 'motivated forgetting'	428

	Variations in the efficiency of memory		429
	Memory development		429
	Task conditions	•	432
	Individual differences		434
17	Language		438
	'Language' in humans and animals		438
	Approaches to the psychology of language		442
	Langue and parole		442
	Learning-theory approaches		443
	Psycholinguistics	4.5	449
	Language development		457
	Some preliminaries		457
	The development of sounds and words		460
	The development of grammar		462
	Language learning		467
	Language and cognition		470
18	Thinking	***	475
	The definition of thinking		475
	Studies of 'thinking situations'		481
	Problem-solving and reasoning		481
	Concept formation		485
	Creativity		489
	Analyses of thinking processes		491
	The 'raw stuff' of thinking		491
	'Models' of thought	en e	493
	Cognitive development		497
	•		
19	Assessment of Individuals		502
	Introduction		502
	Basic principles of testing		504
	Psychological measurement		504
	Estimation of reliability		508
	Estimation of validity		512
	Types of test		517
	Tests of achievement		517
	General ability tests		518
	Aptitude tests		523
	Attitude and personality tests		525

20	Abilities and Personality: Quantitative Approaches	533
	The statistical approach to intelligence	533
	Quantitative approaches to personality	544
	The trait approach	544
	Cattell's trait-type theory	545
	Eysenck's trait-type system	552
	Scepticism concerning traits	556
21	Models of Personality	558
	Psycho-dynamic theories	558
	Freud	558
	Derivations and deviations	565
	Behaviouristic approaches	567
	Observational learning	567
	Social learning	569
	Cognitive approaches	571
	Personal constructs	571
	Cognitive styles	574
	An interactionist compromise	576
	Motivation and personality	578
	Values and self-identity	581
	Summary comments	583
	Abilities	583
	Temperament	584
	Character traits	584
	Motives	584
	Values, interests, attitudes and ideals	585
	Identity	585
	Developmental history	586
	Stability, adjustment and mental health	580
22	Group Differences	588
	Introduction	588
	Sex differences	589
	Sex differences in behaviour	589
	The origin of sex differences	592
	Race differences	591
	The definition of race	597
	Race differences in behaviour	600

	Age differences		607
	The nature of ageing		607
	Methodological problems		609
	Cognitive abilities		612
	Personality and attitudes		614
23	Social Behaviour		618
	Introduction		618
	Audience and coaction effects		618
	The group polarization phenomenon		624
	Non-verbal communication		631
	Paralanguage		631
	Facial expression .		634
	Kinesics		635
	Proxemics		641
	Inconsistency between channels		642
24	Psychology's Applications		645
	Introduction		645
	Educational psychology		646
	Clinical psychology		647
	Criminological psychology		650
	Occupational psychology		652
	Consumer psychology		654
	Environmental psychology	, .	655
	Careers in psychology and related fields		657
	References		659
	Acknowledgements		731
	Subject Index		733
	Author Index		739