

Contents

List of illustrations	ix
Acknowledgements	xi
Foreword: Drivers and the driving they do	xiii
1 Assessing distance, speed, and time	1
Light and the eyes	1
Depth and distance	3
Motion and speed	8
Time-to-collision	17
Summary	23
2 Motor responses and behavioural repertoires	25
Object-oriented actions	26
Endogenous and exogenous signals: Reactions to expected and unexpected events	33
Summary	38
3 Combining perceptual-motor skills	41
Braking to avoid a collision	42
Following another vehicle	45
Steering control and gaze	48
Summary	52

vi UNDERSTANDING DRIVING

4	Attention, automaticity, and distraction	55
	Aspects of attention	56
	Attention as schema scheduling	57
	Routine actions and automaticity	63
	Driving and distraction	69
	Summary	74
5	Learning, instruction, and training	75
	Learning curves and practising	76
	Varieties of practice	80
	Stages in the acquisition of skill	88
	Transfer of acquired skill	91
	Instruction and feedback	95
	Summary	96
6	Memory for driving	99
	Memories and remembering	99
	Working memory and driving activities	107
	Memory for situational and spatial information	112
	Memory for when and whether accidents happened	114
	Summary	119
7	When driving is dangerous: Arousal, assessment, and hazard perception	121
	Physiological consequences of confronting a dangerous situation	122
	Memory for threatening situations	125
	Assessing driving scenes	132
	Hazard perception	136
	Summary	141
8	Appraisal, efficacy, and action	143
	Beliefs about attitudes	143
	Assessments of ourselves and others	145
	Developing self-efficacy	152
	Self-efficacy and actual ability	156
	Appraisal, efficacy, and emotion-driven actions	159
	Summary	163
9	Age, neurological damage, disease, and driving	165
	Age and driving	166
	Traumatic brain injury and driving	171
	Dementia and driving	177
	Continuing driving with neurological damage and disease	186

10	Towards a cognitive account of driver behaviour	189
	A framework for understanding the driving task	190
	Evaluating the four-facet framework	199
	The four-facet framework and beyond	202
	References	205
	Author index	239
	Subject index	251