Contents

141171	Concepts, models, and methods	1
1	Psychophysiology	1
1.1	Definitions and Mind-Body Positions	1
1.2	Place in Psychology	
1.3	Explanations in Psychology and Psychophysiology	12
1.3.1	Explaining the Physical by the Psychological. The Right	
	Program for Psychology?	12
1.3.2	Levels of Explanation	19
1.4	Constructs	21
1.5	Assessment Models	26
1.5.1	Assessment in the Construction Stage of Constructs	27
1.5.2	Assessment in the Validation Stage of Constructs	33
2	Situation and Person	37
2.1	Epistemology and Definitions of "The Situation"	37
2.2	Determinants of Behavior: Notions in Personality Psychology	
3	Stimulus-Response Mediation in Psychophysiology	53
3.1	A Model of Stimulus-Response Mediation in Psychophysiology	53
3.2	Notions of Stimulus-Response Mediation in Psychophysiology	
3.2.1	Comparison of the Proposed with Other Stimulus Response	
	Models	58
3.2.2	Stimulus-Response Mediation in Selected Psychophysiological	
	Research Programs	62
4	Activation	71
4.1	Activation and Psychological Constructs	71
4.2	Activation as a Physiological Descriptor	
4.3	The Covariation Problem in Psychophysiology	

5	Autonomic Cardiovascular Activation Components	87
5.1	Foundations for a Conceptualization of Autonomic	
	Cardiovascular Activation Components	87
5.1.1	Autonomic Receptors	87
5.1.2	Autonomic Receptor Agonists and Antagonists	93
5.1.3	Cardiovascular Activation Components	102
5.2	A Model of Autonomic Cardiovascular Activation Components.	107
5.2.1	The Unrestricted Model of Cardiovascular Activation	
	Components	107
5.2.2	Two Restricted Models of Cardiovascular Activation	
	Components	109
5.2.3	Consequences of Model Misspecifications	113
5.2.4	Uses of the Cardiovascular Activation Component Model:	
	Towards a Quantitative Evaluation of Task Effects	115
5.2.5	Limitations of the Unrestricted Model of Cardiovascular	
	Activation Components	118
5.3	Estimation of the Parameters in the Model of	
	Cardiovascular Activation Components	120
5.3.1	Estimation of Parameters Given Complete Autonomic	
	Receptor Blockades	120
5.3.2	Estimation of Parameters Given Incomplete Autonomic	
	Receptor Blockades	125
6	Implications and Interpretations of Psychophysiological	
	Data Treatments	133
6.1	Psychophysiological Response Measures and Measurement	
	Models	134
6.1.1	Response Measures and Their Implied Transfer Functions	134
6.1.2	Estimation of Actual Transfer Functions	138
6.2	Partitioning Psychophysiological Variance	139
6.2.1	Effect Estimates and Measurement Models	139
6.2.2	Specificity of Physiological Responses	143
6.3	Partitioning Psychophysiological Covariance	147
7	The Analysis of Profiles	155
7.1	The Similarity of Profiles	155
7.2	Dimensional Representation of Profiles	
7.3	Discriminant Analysis of Profiles	159
7.3.1	Discriminant functions	159
7.3.2	Standard Profile Tests in Discriminant Analysis	159
7.3.3	The Visual Interpretation of Profile Vectors in Discriminant	
	Space	162

Part B	Selected Research Areas	165
8	Overview of Experimental Studies	165
8.1	Experiment 1	
8.1.1	Subjects	
8.1.2	Setting and Apparatus	
8.1.3	Procedure	
8.1.4	Physiological Variables	
8.1.5	Response Scaling	
8.2	Experiment 2	170
8.2.1	Subjects	
8.2.2	Setting and Apparatus	
8.2.3	Procedure	
8.2.4	Physiological Variables	
8.2.5	Response Scaling	
8.3	Experiment 3	
8.3.1	Subjects	
8.3.2	Setting and Apparatus	
8.3.3	Procedure	
8.3.4	Physiological Variables	
8.3.5	Response Scaling	
8.4	Experiment 4	
8.4.1	Subjects	
8.4.2	Setting and Apparatus	
8.4.3	Procedure	
8.4.4	Physiological Variables	
8.4.5	Response Scaling	
9	The Analysis of Activation	187
9.1	Variation and Covariation of Physiological Variables	187
9.1.1	Effect Sizes of Sources of Variation	187
9.1.2	Situational Discriminability	190
9.1.3	Correlations among Physiological Variables within Separate	
	Sources of Variation	193
9.2	Physiological Maps of Situations	216
9.2.1	Situational Maps of Experiment 1	217
9.2.2	Situational Maps of Experiment 2	229
9.2.3	Situational Maps of Experiment 3	232
9.2.4	Situational Maps of Experiment 4	236
9.3	Cardiovascular Autonomic Activation Components	241
9.3.1	Component description	242
9.3.2	Redundancy Analysis	246
9.3.3	Discriminant Analysis	
9.3.4	Multistage Linear Estimation	260

9.3.5	The Identification of Autonomic Cardiovascular Activation	
	Components: A Summing-Up	274
10	Laboratory Tasks in Cardiovascular Research	279
10.1	A Review of Task Characterizations: Non-Formalized	
	Approaches	280
10.1.1	Mental Arithmetic	
10.1.2	Cold Pressor	
10.1.3	Reaction Time Task	
10.1.4	Loud Noise	283
10.1.5	Speech Activity	284
10.1.6	Handgrip	
10.1.7	Conclusions	
10.2	Task Characterization with Putative Cardiovascular	
	Activation Components	287
10.2.1	Analyses by Physiological Variables	
10.2.2	Componential Task Description	
10.2.3	Intertask Comparisons	
11	Research on the Psychophysiology of Personality	319
11.1	Situational Variation and Personality Effects on Activation	
11.2	Results	
11.2.1	Experiment 1	323
11.2.2	Experiment 4	
12	Research on the Psychophysiology of Anger	339
12.1	Research Issues	339
12.2	Results	342
12.2.1	Self-Reports of Emotion	
12.2.2	Physiological Specificity of Anger	
12.2.3	Relationship between Feelings and Physiological Activation	
	during Anger Induction	357
13	Looking Back	365
	References	369
	Subject Index	395