## Contents

Intı	roduction			
Part I Representation, action, and cognition				
1	Re-founding cognitivism based on the cybernetic idea of goal-directed action			
2	<b>Interactive spatial representations constitute a basis for cognition</b> . 25 Martin V. Butz			
3	Natural laws of developmental intelligence			
Part II Reasons, reasoning, and rationality				
4	A formalism to represent mental states			
5	The BOID architecture revisited: Goal generation in agent systems 75 Mehdi Dastani and Leendert van der Torre			
6	The irritation of doubt: When is it OK to scratch your beliefs? 103 Fabio Paglieri			
7	The role of mental states in argumentation: Two problems for rationality from the psychology of belief			
8	The goals of analogies			
9	A note on the reward-loss duality in time consistent decisions 155 Nicola Dimitri			

vi	Contents
1	Contents

10	Self-deception and weak will: Fooling oneself as a form of procrastination	
Part	III Emotion and motivation	
11	What is an emotion in the belief-desire theory of emotion? $\dots\dots 181$ Rainer Reisenzein	
12	Cognitive-based emotions: Theory and evidence from the brain $\dots 213$ Giorgio Coricelli and Mateus Joffily	
13	Pride and its expression in political debates	
14	The paradoxes of depression: A goal-driven approach	
15	The cognitive anatomy and functions of expectations revisited $\dots273$ Emiliano Lorini	
16	Social cooperation: The role of emotions	
Part IV Power, dependence, and social interaction		
17	The permeable limit: Constructing a shared intersubjective space in strategic interactions	
18	The game of dependence	
19	<b>Power and leadership in virtual societies</b>	
20	The recovered subject: A socio-cognitive snapshot of a new subject in the field of mental health	
Part V Trust and delegation		
21	The complex relationships between trusting and being trustworthy	
22	A simple logic of trust based on propositional assignments407 Andreas Herzig, Emiliano Lorini and Frédéric Moisan	

Contents vii

23	A cognitive model of conflicts in trust using argumentation		
24	A formal analysis of trust and distrust relationships in Shakespeare's Othello		
25	On the logic of delegation: Relating theory and practice		
Part VI Communication			
26	Investigating ethical issues for persuasive systems		
27	HCI and gesture: From natural user interface to stigmergic user		
	interface		
28	AmI systems as agent-based mirror worlds: Bridging humans		
	and agents through stigmergy		
29	<b>Agents writing on walls: Cognitive stigmergy and beyond</b> 553 Andrea Omicini		
30	Telling it like it isn't: A comprehensive approach to analyzing verbal deception		
Part VII Norms, organizations, and institutions			
31	Commitments in multiagent systems		
32	Intentional compliance with normative systems		
33	Institutions evolving through the mind. A cognitive and		
	computational approach		
34	<b>On social and organizational reasoning in multi-agent systems</b> 675 Jaime Simão Sichman		
35	You should be happy!		
Par	VIII Cognitive and computational social science		

viii	Contents
36	Artefacts, not words
37	<b>Two scenarios for crowdsourcing simulation</b>
38	Agents that make mistakes
39	A visible hand: Hybrid paths and immergent patterns in social theory (and in a father-son relationship)
Par	t IX Afterword
40	Goals, the true center of cognition