## Contents

The (Almost) Impossible Task of Interdisciplinarity .......................... 1  
Mihai Nadin

**Part I  Theoretical and General Aspects of Anticipation**

Anticipation of Random Future Events. ........................................ 11  
Patrizio Tressoldi

The Birth Defect of the Information Processing Approach. ............... 19  
Joachim Hoffmann

An Epistemological Compromise Between Actor and Observer .......... 33  
Alastair Hewitt

**Part II  Anticipation in Biological and Physiological Systems**

Future Perception in Plants ..................................................... 57  
Ariel Novoplansky

Certain and Uncertain Futures in the Brain .................................. 71  
Daniel S. Levine

Neural Systems Underlying the Prediction of Complex Events .......... 81  
Ricarda I. Schubotz

Time and Consciousness ......................................................... 93  
Markus A. Maier and Vanessa L. Buechner

Human, All Too Human: Euclidean and Multifractal Analysis  
in an Experimental Diagrammatic Model of Thinking ..................... 105  
Fabián Labra-Spröhnle
Part III  Anticipation in Neural Networks

The Closed-Loop Coding-Decoding and Analysis by Synthesis as Basics Anticipatory Principle Functional Organization in the Living Systems. ................................. 137
Dobilas Kirvelis

The Imminence Mapping Anticipates ................................. 163
A.H. Louie

Synapses in Digital Medium: Computational Investigations of Neural Basis of Anticipation. ................................. 187
Slawomir J. Nasuto and Yoshikatsu Hayashi

Representation and Anticipation in Motor Action ................................. 203
Thomas Schack, Christoph Schütz, André Frank Krause and Christian Seegelke

Part IV  Anticipation in Engineering and Information Technology

Information Concepts in Anticipatory Systems ................................. 219
Tippure S. Sundresh

Anticipatory Behavior of Software Agents in Self-organizing Negotiations ................................. 231
Jan Ole Berndt and Otthein Herzog

The Ways of Scientific Anticipation: From Guesses to Probabilities and from There to Certainty ................................. 255
Aaro Toomela

Anticipatory Engineering: Anticipation in Sensory-Motor Systems of Human ................................. 275
Yoshikatsu Hayashi, Jamie Blake and Slawomir J. Nasuto

Anticipation and Computation: Is Anticipatory Computing Possible? ................................. 283
Mihai Nadin

Part V  Anticipation, Culture, and Society

On the Role of Anticipation in Teaching ................................. 343
Lea Valentine Lavrik and Meir Vladimir Shunyakov
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticipation</td>
<td>Computational Creativity</td>
</tr>
<tr>
<td>Bill Seaman</td>
<td></td>
</tr>
<tr>
<td>Art in Progress</td>
<td>369</td>
</tr>
<tr>
<td>Elvira Nadin</td>
<td></td>
</tr>
<tr>
<td>Political Anticipation and Networks: Creating Anticipatory Systems for Government and Society</td>
<td>379</td>
</tr>
<tr>
<td>Marie-Hélène Caillol</td>
<td></td>
</tr>
<tr>
<td>Interactive Living Space Design for Neo-Nomads: Anticipation Through Spatial Articulation</td>
<td>393</td>
</tr>
<tr>
<td>Asma Naz</td>
<td></td>
</tr>
</tbody>
</table>
Anticipation Across Disciplines
Nadin, M. (Ed.)
2016, IX, 403 p., Hardcover
ISBN: 978-3-319-22598-2