

---

# Contents

<b>Introduction to the Neurobiology of Interval Timing . . . . .</b>	<b>1</b>
Hugo Merchant and Victor de Lafuente	
<b>Part I Psychophysics of Interval Timing</b>	
<b>About the (Non)scalar Property for Time Perception . . . . .</b>	<b>17</b>
Simon Grondin	
<b>Elucidating the Internal Structure of Psychophysical Timing Performance in the Sub-second and Second Range by Utilizing Confirmatory Factor Analysis . . . . .</b>	<b>33</b>
Thomas H. Rammsayer and Stefan J. Troche	
<b>Neurocomputational Models of Time Perception . . . . .</b>	<b>49</b>
Joachim Hass and Daniel Durstewitz	
<b>Part II Timing Models</b>	
<b>Dedicated Clock/Timing-Circuit Theories of Time Perception and Timed Performance . . . . .</b>	<b>75</b>
Hedderik van Rijn, Bon-Mi Gu, and Warren H. Meck	
<b>Neural Dynamics Based Timing in the Subsecond to Seconds Range . . . . .</b>	<b>101</b>
Dean V. Buonomano	
<b>Part III Neural Correlates of Interval Timing</b>	
<b>Signs of Timing in Motor Cortex During Movement Preparation and Cue Anticipation . . . . .</b>	<b>121</b>
Björg Elisabeth Kilavik, Joachim Confais, and Alexa Riehle	
<b>Neurophysiology of Timing in the Hundreds of Milliseconds: Multiple Layers of Neuronal Clocks in the Medial Premotor Areas . . . . .</b>	<b>143</b>
Hugo Merchant, Ramón Bartolo, Oswaldo Pérez, Juan Carlos Méndez, Germán Mendoza, Jorge Gámez, Karyna Yc, and Luis Prado	

<b>The Olivo-Cerebellar System as a Neural Clock . . . . .</b>	<b>155</b>
James Ashe and Khalaf Bushara	
<b>From Duration and Distance Comparisons to Goal Encoding in Prefrontal Cortex . . . . .</b>	<b>167</b>
A. Genovesio and S. Tsujimoto	
<b>Probing Interval Timing with Scalp-Recorded Electroencephalography (EEG) . . . . .</b>	<b>187</b>
Kwun Kei Ng and Trevor B. Penney	
<b>Searching for the Holy Grail: Temporally Informative Firing Patterns in the Rat . . . . .</b>	<b>209</b>
Matthew S. Matell	
 <b>Part IV Functional Imaging and Interval Timing</b>	
<b>Getting the Timing Right: Experimental Protocols for Investigating Time with Functional Neuroimaging and Psychopharmacology . . . . .</b>	<b>237</b>
Jennifer T. Coull	
<b>Motor and Perceptual Timing in Parkinson's Disease . . . . .</b>	<b>265</b>
Catherine R.G. Jones and Marjan Jahanshahi	
 <b>Part V Neural Underpinnings of Rhythm and Music</b>	
<b>Music Perception: Information Flow Within the Human Auditory Cortices . . . . .</b>	<b>293</b>
Arafat Angulo-Perkins and Luis Concha	
<b>Perceiving Temporal Regularity in Music: The Role of Auditory Event-Related Potentials (ERPs) in Probing Beat Perception . . . . .</b>	<b>305</b>
Henkjan Honing, Fleur L. Bouwer, and Gábor P. Hádén	
<b>Neural Mechanisms of Rhythm Perception: Present Findings and Future Directions . . . . .</b>	<b>325</b>
Li-Ann Leow and Jessica A. Grahm	
<b>Neural Underpinnings of Music: The Polyrhythmic Brain . . . . .</b>	<b>339</b>
Peter Vuust, Line K. Gebauer, and Maria A.G. Witek	
<b>Index . . . . .</b>	<b>357</b>

Neurobiology of Interval Timing

Merchant, H.; de Lafuente, V. (Eds.)

2014, XIII, 358 p. 96 illus., 46 illus. in color., Hardcover

ISBN: 978-1-4939-1781-5