



OXFORD LIBRARY OF PSYCHOLOGY

# The Oxford Handbook of Spontaneous Thought

MIND-WANDERING, CREATIVITY,  
AND DREAMING

*Edited by*

Kieran C. R. Fox

Kalina Christoff

## Part I • Introduction and Overview

1. Introduction: Toward an Interdisciplinary Science  
of Spontaneous Thought 3  
*Kieran C. R. Fox and Kalina Christoff*

## Part II • Theoretical Perspectives

2. Why the Mind Wanders: How Spontaneous Thought's Default Variability  
May Support Episodic Efficiency and Semantic Optimization 11  
*Caitlin Mills, Arianne Herrera-Bennett, Myrthe Faber, and Kalina Christoff*
3. An Exploration/Exploitation Trade-off Between Mind-Wandering  
and Goal-Directed Thinking 23  
*Chandra S. Sripada*
4. When the Absence of Reasoning Breeds Meaning: Metacognitive  
Appraisals of Spontaneous Thought 35  
*Carey K. Morewedge and Daniella M. Kupor*
5. The Mind Wanders with Ease: Low Motivational Intensity  
Is an Essential Quality of Mind-Wandering 47  
*Dylan Stan and Kalina Christoff*
6. How Does the Brain's Spontaneous Activity Generate Our Thoughts?  
The Spatiotemporal Theory of Task-Unrelated Thought (STTT) 55  
*Georg Northoff*
7. Investigating the Elements of Thought: Toward a Component Process  
Account of Spontaneous Cognition 71  
*Jonathan Smallwood, Daniel Margulies, Boris C. Bernhardt,  
and Elizabeth Jefferies*

## Part III • Philosophical, Evolutionary, and Historical Perspectives

8. The Philosophy of Mind-Wandering 87  
*Zachary C. Irving and Evan Thompson*
9. Why Is Mind-Wandering Interesting for Philosophers? 97  
*Thomas Metzinger*
10. Spontaneity in Evolution, Learning, Creativity, and Free  
Will: Spontaneous Variation in Four Selectionist Phenomena 113  
*Dean Keith Simonton*

11. How Does the Waking and Sleeping Brain Produce Spontaneous Thought and Imagery, and Why? 123  
*John S. Antrobus*
12. Spontaneous Thinking in Creative Lives: Building Connections Between Science and History 133  
*Alex Soojung-Kim Pang*

#### **Part IV • Mind-Wandering and Daydreaming**

13. The Neuroscience of Spontaneous Thought: An Evolving Interdisciplinary Field 143  
*Jessica R. Andrews-Hanna, Zachary C. Irving, Kieran C. R. Fox, R. Nathan Spreng, and Kalina Christoff*
14. Neural Origins of Self-Generated Thought: Insights from Intracranial Electrical Stimulation and Recordings in Humans 165  
*Kieran C. R. Fox*
15. Mind-Wandering and Self-Referential Thought 181  
*Arnaud D'Argembeau*
16. Phenomenological Properties of Mind-Wandering and Daydreaming: A Historical Overview and Functional Correlates 193  
*David Stawarczyk*
17. Spontaneous Thought and Goal Pursuit: From Functions Such as Planning to Dysfunctions Such as Rumination 215  
*Eric Klinger, Igor Marchetti, and Ernst H. W. Koster*
18. Unraveling What's on Our Minds: How Different Types of Mind-Wandering Affect Cognition and Behavior 233  
*Claire M. Zedelius and Jonathan W. Schooler*
19. Electrophysiological Evidence for Attentional Decoupling during Mind-Wandering 249  
*Julia W. Y. Kam and Todd C. Handy*
20. Mind-Wandering in Educational Settings 259  
*Jeffrey D. Wammes, Paul Seli, and Daniel Smilek*

#### **Part V • Creativity and Insight**

21. Interacting Brain Networks Underlying Creative Cognition and Artistic Performance 275  
*Roger E. Beaty and Rex E. Jung*
22. Spontaneous and Controlled Processes in Creative Cognition 285  
*Mathias Benedek and Emanuel Jauk*
23. Wandering and Direction in Creative Production 299  
*Charles Dobson*
24. Flow as Spontaneous Thought: Insight and Implicit Learning 309  
*John Vervaeke, Leo Ferraro, and Arianne Herrera-Bennett*

25. Internal Orientation in Aesthetic Experience 327  
*Oshin Vartanian*
26. Neuropsychopharmacology of Flexible and Creative Thinking 337  
*David Q. Beversdorf*

## **Part VI • Sleep, Dreaming, and Memory**

27. Dreaming Is an Intensified Form of Mind-Wandering, Based in an Augmented Portions of the Default Network 355  
*G. William Domhoff*
28. Neural Correlates of Self-Generated Imagery and Cognition Throughout the Sleep Cycle 371  
*Kieran C. R. Fox and Manesh Girn*
29. Spontaneous Thought, Insight, and Control in Lucid Dreams 385  
*Jennifer M. Windt and Ursula Voss*
30. Microdream Neurophenomenology: A Paradigm for Dream Neuroscience 411  
*Tore Nielsen*
31. Sleep Paralysis: Phenomenology, Neurophysiology, and Treatment 435  
*Elizaveta Solomonova*
32. Dreaming and Waking Thought as a Reflection of Memory Consolidation 457  
*Erin J. Wamsley*
33. Involuntary Autobiographical Memories: Spontaneous Recollections of the Past 469  
*John H. Mace*

## **Part VII • Clinical Contexts, Contemplative Traditions, and Altered States of Consciousness**

34. Potential Clinical Benefits and Risks of Spontaneous Thought: Unconstrained Attention as a Way into and a Way out of Psychological Disharmony 479  
*Dylan Stan and Kalina Christoff*
35. Candidate Mechanisms of Spontaneous Cognition as Revealed by Dementia Syndromes 493  
*Claire O'Callaghan and Muireann Irish*
36. Rumination Is a Sticky Form of Spontaneous Thought 509  
*Elizabeth DuPre and R. Nathan Spreng*
37. Pain and Spontaneous Thought 521  
*Aaron Kucyi*
38. Spontaneous Thought in Contemplative Traditions 529  
*Halvor Eifring*
39. Catching the Wandering Mind: Meditation as a Window into Spontaneous Thought 539  
*Wendy Hasenkamp*

40. Spontaneous Mental Experiences in Extreme and Unusual Environments 553  
*Peter Suedfeld, A. Dennis Rank, and Marek Mališ*
41. Cultural Neurophenomenology of Psychedelic Thought: Guiding the “Unconstrained” Mind Through Ritual Context 573  
*Michael Lifshitz, Eli Oda Sheiner, and Laurence J. Kirmayer*
- Index* 595