

The Neuroscience of Creativity

What happens in our brains when we compose a melody, write a poem, paint a picture, or choreograph a dance sequence? How is this different from what occurs in the brain when we generate a new theory or a scientific hypothesis?

In this book, Anna Abraham reveals how the tools of neuroscience can be employed to uncover the answers to these and other vital questions. She explores the intricate workings of our creative minds to explain what happens in our brains when we operate in a creative mode versus an uncreative mode.

The vast and complex field that is the neuroscience of creativity is disentangled and described in an accessible manner, balancing what is known so far with critical issues that are as yet unresolved. Clear guidelines are also provided for researchers who pursue the big questions in their bid to discover the creative mind.

Anna Abraham is a Professor of Psychology at the School of Social Sciences in Leeds Beckett University, UK. She is a Fellow of the Royal Society of the Arts, the Salzburg Global Seminar, and the Higher Education Academy. She is also a Member of the International Society for Fiction and Fictionality Studies, the Association for Psychological Science, the Cognitive Neuroscience Society, and the American Psychological Association's Division 10: Society for the Psychology of Aesthetics, Creativity and the Arts. She edited the 2015 book *Madness and Creativity: Yes, No or Maybe?* and has authored numerous publications on the human imagination.

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The Neuroscience of Creativity

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For my parents,

Shaino Abraham, the reigning world champion of steadfast
optimism, and

George (Lalu) Abraham, the coolest cat to have walked the
planet.

Contents

<i>List of Figures</i>	page xii
<i>List of Boxes</i>	xiv
<i>Preface</i>	xvii
<i>Acknowledgments</i>	xix
1 What Is Creativity?	1
1.1 Recognizing Creativity	1
1.1.1 Scientific Domains	1
1.1.2 Artistic Domains	4
1.2 Defining Creativity	7
1.2.1 Comprehensiveness in Defining Creativity	9
1.2.2 Critical Factors to Keep in Mind When Defining Creativity	11
1.3 Understanding “Appropriateness” Appropriately	12
1.4 Challenges in Recognizing or Evaluating Creativity	15
1.4.1 How Do We “Recognize” Creativity?	15
1.4.2 To What Extent Can We Agree about Creativity?	17
1.4.3 Consciousness and Creativity	19
1.5 The Purpose of Creativity	20
1.5.1 A Road Map for Using this Book	21
2 How Can Creativity Be Assessed?	24
2.1 Approaches to Investigating Creativity	24
2.1.1 Person	25
2.1.2 Product	28
2.1.3 Press/Place	31
2.1.4 Process	34
2.1.5 Issues for Further Consideration	38
2.2 Assessing Creativity: Person Measures	39
2.2.1 Divergent Thinking Test Batteries	39
2.2.2 Self-Report Measures	40
2.3 Assessing Creativity: Process Measures	41
2.3.1 Convergent Thinking Tasks	42
2.3.2 Process-General Divergent Thinking Tasks	44
2.3.3 Process-Specific Divergent Thinking Tasks	46
2.4 Assessing Creativity: Product Approach	47
2.5 Issues for Further Consideration	47

3	Cognitive Explanations of Creativity	51
3.1	Explanations of Creativity	51
3.2	Focus on Individual Differences	53
3.2.1	Knowledge Storage: Associative Hierarchies	53
3.2.2	Knowledge Access or Retrieval: Defocused Attention	55
3.2.3	Attentional States: Disinhibition	58
3.2.4	Summary: Individual Differences-Based Cognitive Explanations	60
3.3	Focus on Intra-Individual Dynamics	61
3.3.1	Stages of the Creative Process: Wallas Model	61
3.3.2	Stages of the Creative Process: Genevieve Model	65
3.3.3	Summary: Intra-Individual-Based Cognitive Explanations	66
3.4	Creative Cognition: Relevant Operations	67
3.4.1	Insight	67
3.4.2	Analogy	68
3.4.3	Metaphor	69
3.4.4	Imagery	70
3.4.5	Conceptual Expansion	71
3.4.6	Overcoming Knowledge Constraints	72
3.4.7	Flow	73
3.5	Issues for Further Consideration	74
4	Brain-Based Global Explanations of Creativity	78
4.1	The Physiological Approach to Creativity	78
4.2	Dual-Factor Models	81
4.2.1	Right Brain over Left Brain	81
4.2.2	Reduced Concept-Driven Thought or Top-Down Control	85
4.2.3	Brain Networks Perspective	89
4.2.4	What Speaks against Dual-Factor Global Explanations?	93
4.3	Multiple-Factor Models	94
4.3.1	An Evolutionary Brain Networks Perspective	95
4.3.2	An Evolutionary Predictive Perspective	97
4.3.3	What Speaks against Multiple-Factor Models?	100
4.4	A Final Word	101
5	Brain-Based Local Explanations of Creativity	103
5.1	The Local Approach to Creativity	103
5.2	Brain-to-Process Explanations	106
5.2.1	Frontal Lobe Function/Dysfunction	107
5.2.2	Basal versus Transient Hypofrontality	110

Contents	ix
5.2.3 Alpha Wave-Related Brain Activity	112
5.2.4 Other Specific Brain Regions of Interest	114
5.3 Process-to-Brain Explanations	115
5.3.1 Insight	117
5.3.2 Analogical Reasoning	118
5.3.3 Metaphor	119
5.3.4 Conceptual Expansion	120
5.3.5 Overcoming Knowledge Constraints	121
5.3.6 Imagery	122
5.4 Critical Evaluation of Local Explanations	123
6 Neuroscientific Methods in the Study of Creativity	126
6.1 Mapping the Brain: Gross Anatomy, Electrical Activity, and Blood Flow	126
6.2 Functional Neuroimaging Methods	130
6.2.1 rCBF via Radioactive Tracer Techniques	131
6.2.2 fMRI	135
6.2.3 fMRI Connectivity	137
6.3 Structural Neuroimaging Methods	139
6.3.1 Surface-Based and Voxel-Based Approaches	140
6.3.2 Diffusion Tensor Imaging (DTI)	141
6.4 Electroencephalogram (EEG) Methods	144
6.4.1 Power	145
6.4.2 Evoked Potentials	148
6.5 Neuromodulation Methods	149
6.5.1 Neuromodulation and Creative Cognition	150
6.6 Issues for Further Consideration	152
7 Unique Problems in the Neuroscientific Study of Creativity	155
7.1 Problems? What Problems?	155
7.2 The Problem of Trials	158
7.2.1 Number of Trials	159
7.2.2 Duration of Trials	160
7.3 The Problem of Responses	161
7.3.1 Non-Binary and Subjective Responses	161
7.3.2 Response-Induced Movement	162
7.3.3 Post-Neuroimaging Response Entry	163
7.4 The Problem of Tasks	163
7.4.1 Creativity Task Variability	164
7.4.2 Less-Demanding Control Tasks	164
7.5 The Problem of Groups	165

7.6	The Problem of Validity	167
7.7	How to Deal with Problems?	169
8	Musical Creativity	173
8.1	Music and Musicality	173
8.2	Music Perception	176
	8.2.1 Rhythm, Pitch, and Affect	176
	8.2.2 Post-Training Effects	177
8.3	Music Performance	180
	8.3.1 Behavioral Characteristics	181
	8.3.2 Brain Basis	182
8.4	Music Composition	184
	8.4.1 Behavioral Studies	186
	8.4.2 Neuroscientific Studies	188
8.5	Musical Improvisation	189
	8.5.1 Behavioral Characteristics	190
	8.5.2 Brain Correlates	192
8.6	Music and Brain Plasticity	195
9	Literary Creativity	200
9.1	Creativity in Language and Literature	200
9.2	Literary Creativity: Factors, Processes, and Stages	202
	9.2.1 Person-Based/Individual Factors	203
	9.2.2 Process and Constraints	205
	9.2.3 Stages/Components of Creative Writing	206
9.3	Language and the Brain	208
9.4	Literary Creativity and the Brain	212
	9.4.1 Verbal Divergent Thinking Tasks	214
	9.4.2 Metaphor and Other Forms of Semantic Leaps	216
	9.4.3 Story Generation	218
	9.4.4 Prose	218
	9.4.5 Poetry and Lyrics	221
9.5	Issues for Further Consideration	222
10	Visual Artistic Creativity	226
10.1	Visual Art and the Plastic Brain	226
10.2	Information Processing in Visual Artistic Creativity	227
	10.2.1 Visuospatial Ability	229
	10.2.2 Drawing and Hand–Eye Coordination	231
	10.2.3 Imagery	233
	10.2.4 Synesthesia	235

Contents	xi
10.3 Visual Artistic Creativity and the Healthy Brain	236
10.3.1 Visual Divergent Thinking	237
10.3.2 Creative Imagery and Drawing	238
10.3.3 Artistic Expertise and Training	241
10.4 Visual Artistic Creativity and the Disordered Brain	242
10.4.1 Brain Injury in Artists	243
10.4.2 Dyslexia	244
10.4.3 De Novo Artistic Proficiency	245
10.5 Issues for Further Consideration	246
11 Kinesthetic Creativity	250
11.1 Creativity in Body Movement: Is This a Real Thing?	250
11.2 Concepts Relevant to Psychology and Neuroscience	253
11.2.1 Common Coding, Mirror Neurons, and Embodied Cognition	253
11.2.2 Joint Improvisation	254
11.2.3 Flow: The Cornerstone of Kinesthetic Creativity?	255
11.3 Dance	257
11.3.1 Information Processing in Dance	259
11.3.2 Neural Processing in Dance	260
11.3.3 Creativity in Dance: What about Theoretical Viewpoints?	265
11.4 Sports	268
11.4.1 Neural and Information Processing in Sports	269
11.4.2 Creativity in Sports	272
12 Scientific Creativity	276
12.1 Scientific Creativity is Understudied	276
12.2 Mental Operations Relevant to Scientific Creativity	279
12.2.1 Deductive, Inductive, and Abductive Reasoning	279
12.2.2 Analogical and Relational Reasoning	283
12.2.3 Problem Solving and Insight	286
12.2.4 Breadth of Knowledge	289
12.3 Theoretical Views of Scientific Creativity	290
12.4 Issues for Further Consideration	292
Afterword – From Cave Art to Latte Art	295
<i>References</i>	297
<i>Index</i>	365

The color plate section can be found between pp. 204 and 205.

Figures

1.1 Exemplars of scientific creativity	<i>page</i> 3
1.2 Exemplars of artistic creativity	5
1.3 Definitional elements of creativity	8
2.1 Rhodes's (1961) Four Ps of creativity	25
2.2 Measures of creativity using person-based and product-based approaches	40
2.3 Measures of creativity using the process-based approach	43
3.1 Knowledge storage model	54
3.2 Knowledge access model	56
3.3 Disinhibition model	59
4.1 The Five Ps of creativity	80
4.2 Dual-factor models	82
4.3 Multiple-factor models	95
5.1 Schematic illustrations of relevant brain regions	107
5.2 The default mode network (DMN) and the central executive network (CEN)	108
5.3 The semantic cognition network (SCN)	111
6.1 Functional neuroimaging: examples of studies on creativity	133
6.2 Structural neuroimaging: examples of studies on creativity	142
6.3 EEG: examples of studies on creativity	146
7.1 The problems of trials, tasks, and groups in the neuroscience of creativity	159
7.2 The problem of responses in the neuroscience of creativity	161
7.3 The problem of validity in the neuroscience of creativity	168
8.1 Types of musical creativity	174
8.2 Musical improvisation and composition	185
8.3 A theoretical framework for musical creativity	186
9.1 A model of the creative process during screenplay writing	207
9.2 The language brain network	210
9.3 An example of a creative writing study in an fMRI environment	220
10.1 A model of visuomotor processing	232
10.2 Models of visual artistic creativity	234
10.3 An example of a visual artistic creativity study in an fMRI environment	240
11.1 A processual model of dance semiotics	258

Figures	xiii
11.2 Models of creativity in dance performance	266
11.3 A model of creative behavior in team sports	273
12.1 Information processing stages in the P-FIT model of intelligence	281
12.2 Models of reasoning	282
12.3 The stages of problem solving in the integrated theory of insight	288

Boxes

1.1	Types of Creativity	<i>page</i> 4
1.2	Connotations of the Terms “Creativity” and “Creative”	14
1.3	Animal Creativity	20
2.1	Magnitude: Everyday Creativity versus Creative Genius	28
2.2	Does Creativity Involve Both Divergent and Convergent Thinking?	34
2.3	Convergent Creative Thinking Tasks: Contemporary Paradigms	42
3.1	From Stages of Creativity to Dual Systems Theories	62
3.2	Knowledge and Creativity	64
3.3	Types of Knowledge and Contextual Influences on Creativity	64
4.1	Savant Abilities: Exceptional Skill or Creativity?	88
4.2	Does Engaging in Artistic Pursuits Equal Creativity?	88
4.3	Creativity: Mental Illness versus Mental Wellbeing	89
5.1	Problems of Interpretation: From My-Favorite-Brain-Region to My-Favorite-Brain-Network	104
5.2	Problems of Interpretation: Which Network-Based Interpretation to Choose?	106
5.3	Interactions between the Processes of Creative Cognition	116
6.1	Angelo Mosso (1884): The First Neuroscientific Technique	128
6.2	The Neuropsychological Approach	128
6.3	Neuropsychological Studies of Creativity	129
7.1	What is Left Out? Spontaneous Creativity	156
7.2	What is Left Out? Temporally Extended Forms of Creative Ideation	157
7.3	What is Left Out? Motorically Complex Forms of Creativity	157
8.1	Are You Creative When You Merely Listen to Music?	175
8.2	How to Better Study Musical Creativity?	189
8.3	Musical Training via Behavioral/Neurofeedback	196
9.1	Mental Illness, Substance Abuse, and Creativity	204
9.2	Overcoming Confusion Regarding Literary Creativity	213
9.3	Metaphor Processing in Developmental Disorders	217
10.1	Brain Correlates of Drawing	241
10.2	Dopamine and Creativity	243
10.3	Neuroaesthetics versus Neuroscience of Artistic Creativity	247
11.1	Assessing Creativity in Movement	263

Boxes	xv
11.2 Neurofeedback and Biofeedback in the Performing Arts	264
11.3 The Effects of Physical Exercise on Creativity	270
12.1 Science and the Pursuit of Beauty	278
12.2 Mathematical Creativity	283
12.3 Real-World Scientific Creativity: Three Favorable Factors	285

Preface

Our capacity to be creative is a true marvel of nature. We experience it in our daily lives in myriad forms, and we reap the joys and benefits of its fruition not only as agents but also as recipients. Creativity is often heralded as representing the epitome of uniquely developed human abilities. It is one that we lay a great deal of premium on in our daily lives across all walks of life, and it is essential to human development and progress at every level, from the individual to societal. However, the inherently abstract and intricate nature of creative thinking renders a certain mystery and ineffability to its workings.

Although relatively new to the enterprise of scientific enquiry, neuroscience as a formal discipline is one that has been witness to exponential growth in terms of research output and knowledge that benefits all domains of human perception, cognition, and behavior. Creativity is no exception to this revolutionary trend. But it is unique in that the many complexities involved in investigating this astonishingly complex human ability render the explosion of published work in relation to it extremely challenging to understand with sufficient depth.

The objective of this book is to provide a systematic overview of the neuroscience of creativity where the many disparate strands of academic theory and research in the field are integrated and summarized in an accessible manner. In other words, it is aimed to help anyone equipped with nothing but a deep interest in understanding the creative mind find their bearings. It is, in fact, the book I wish I'd had on hand when I began to investigate creativity. A Baedeker Guide to Creativity and the Brain, so to speak.

May this resource be a useful guide in your exploration of the creative mind.

Acknowledgments

Writing this book has been a whirlwind adventure in my mind that began at a snail's pace and ended at lightning speed. I hope the book reflects both qualities: the gentle ease of a loafer and the zeal of a hyperfocused meditator, unified in the mission of making sense of the creative mind.

I have been obsessed with creativity for as long as I can remember. Many of my earliest memories are of being privy to dazzling moments on the screen, on the page, and in the air; through film, sports, music, and books. Precious moments that triggered me to action. I memorized and recited whole movies to entertain friends. Masterful sequences played back in my mind. And no one could stop me from singing. I am grateful to countless creators, artists, and performers the world over for all the magic. To be bestowed the chance to study the creative mind has been an extraordinary privilege for me, and I am indebted to an incalculable number of people who have aided me in my pursuits over the years.

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I thank my friends, my family, and my friends who are family – all the wonderful souls who have supported me in numerous ways, big and small, over the many years. Too many to name but you know who you are. Thank you.

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