In $Pi(\pi)$ in Nature, Art, and Culture Marcel Danesi revisits the importance of π as a pattern in the structure of reality, fitting in with the Pythagorean view of Order. Pi has cropped up in formulas that describe natural and physical structures which, on the surface, seem to have nothing to do with a circle, but might harbor the archetype of circularity as a principle.

Through π , this book thus revisits the implicit ancient Greek view that geometry was a 'hermeneutic science', a discipline aiming to investigate the connectivity among numbers, shapes, and natural phenomena. It also examines its manifestations in aesthetic, symbolic and cultural structures, which point to an abiding fascination with the circle as an unconscious archetype. Hermeneutic geometry is ultimately about the exploration of the meanings of geometric-mathematical notions to science and human life.

Marcel Danesi, Ph.D. (1974), is Professor of Semiotics and Linguistic Anthropology at the University of Toronto. He has published extensively in the field of mathematical cognition and education, and founded a center at the Fields Institute for Research in Mathematical Sciences to study the relation between mathematics, the mind, and culture.

ISBN 9789004433373



Series Editor: Marcel Danesi

ISSN 2666-2299 Brill.com/miah



1	Disc	overy of π and Its Manifestations 1
	1	Prologue 1
	2	Discovery, Calculation, Proof 3
	3	Geometric Archetypes 10
	4	Manifestations of Archetypal Structure 12
	5	Geometry as a Hermeneutic Science 17
	6	Epilogue 29
2	Pi in	Mathematics and the Physical World 31
	1	Prologue 31
	2	Pythagoreanism 32
	3	Uniting Arithmetic and Geometry 34
	4	The Planetary Orbits 39
	5	Natural and Physical Phenomena 41
	6	Topology, Non-Euclidean Geometry, and Fractal Geometry 47
	7	Epilogue 55
3	Pi in	Art and Architecture 57
	1	Prologue 57
	2	Pythagoreanism in Art 60
	3	The Circle in Art and Symbolism 67
	4	Pi in Art 74
	5	Epilogue 76
	Pi in	Popular Culture 79
	1	Prologue 79
	2	Mathematics in Popular Culture 81
	3	Pi in Popular Culture 91
	4	Pi-Mania 95
	5	Epilogue 101
5	Orde	er and Chaos 102
100	1	Prologue 102
	2	Cohen's Dilemma 104
	3	Chaos Theory 106

Order and Chaos Epilogue 113 5 Final Remarks 6 114

References 117 Index 131