

Theodore Schick, Jr. / Lewis Vaughn

How to Think About Weird Things

Critical Thinking for a New Age



sixth edition



Now in its sixth edition, **How to Think About Weird Things** helps readers apply solid principles of critical thinking to a vast array of claims about the paranormal, the supernatural, the mysterious, and the mystifying. Throughout the book, the authors provide step-by-step explanations on how to sort out reasons, evaluate evidence, and tell when a claim (no matter how strange) is likely to be true. The overall emphasis in the book is not on debunking or advocating specific assertions, but on explaining principles of critical thinking that enable readers to evaluate claims for themselves.

Features:

- Explanations of over 30 principles of knowledge, reasoning, and evidence enhance readers' problem-solving skills.
- Discussions of over 60 paranormal, supernatural, or mysterious phenomena, including ghosts, astrology, ESP, UFO abductions, and near-death experiences show readers how to apply critical thinking principles to puzzling phenomena.
- The SEARCH formula—a step-by-step procedure for evaluating any extraordinary claim—gives students a template for carefully reasoning about mysterious phenomena.
- Detailed discussion of the characteristics, methodology, and limitations of science show readers how to use scientific thinking to evaluate extraordinary claims.
- Provides new or expanded coverage of logic and statistical fallacies, Mayan 2012 doomsday prophecies, the evolutionary theory of God, the Human Consciousness Project, intercessory prayer and healing, treatment of alien astronauts, Bigfoot, ESP, psychic predictions, and near-death experiences.

The McGraw-Hill Companies

**Mc
Graw
Hill** Connect
Learn
Succeed™

ISBN 978-0-07-353577-7
MHID 0-07-353577-X



www.mhhe.com

Contents

FOREWORD vii

PREFACE ix

Chapter 1 Introduction: Close Encounters with the Strange 1

THE IMPORTANCE OF WHY 2

BEYOND WEIRD TO THE ABSURD 4

A WEIRDNESS SAMPLER 6

Notes 13

Chapter 2 The Possibility of the Impossible 14

PARADIGMS AND THE PARANORMAL 15

LOGICAL POSSIBILITY VERSUS PHYSICAL IMPOSSIBILITY 16

THE POSSIBILITY OF ESP 22

THEORIES AND THINGS 24

ON KNOWING THE FUTURE 25

Summary 29

Study Questions 29

Evaluate these Claims 30

Discussion Questions 30

Field Problem 30

Critical Reading and Writing 31

Suggested Readings 31

Notes 32

Chapter 3 Arguments Good, Bad, and Weird 33

CLAIMS AND ARGUMENTS 34

DEDUCTIVE ARGUMENTS 39

INDUCTIVE ARGUMENTS 42

Enumerative Induction 42

Analogical Induction 46

Hypothetical Induction (Abduction, or Inference to the Best Explanation) 47

INFORMAL FALLACIES 49

Unacceptable Premises 49

Begging the Question 49

False Dilemma 49

Irrelevant Premises 50

Equivocation 50

Composition 50

Division 51

Appeal to the Person 51

Genetic Fallacy 51

Appeal to Authority 51

Appeal to the Masses 52

Appeal to Tradition 52

Appeal to Ignorance 52

Appeal to Fear 53

Straw Man 53

Insufficient Premises 53

Hasty Generalization 53

Faulty Analogy 54

False Cause 54

Slippery Slope 54

STATISTICAL FALLACIES 55

Misleading Averages 55

Missing Values 55

Hazy Comparisons 56

Summary 56

Study Questions 57

Evaluate these Claims 58

Discussion Questions 59

Field Problem 59

Critical Reading and Writing 60

Suggested Readings 60

Notes 61

Chapter 4 Knowledge, Belief, and Evidence 62

BABYLONIAN KNOWLEDGE-ACQUISITION TECHNIQUES 63

PROPOSITIONAL KNOWLEDGE 64

REASONS AND EVIDENCE	65
EXPERT OPINION	71
COHERENCE AND JUSTIFICATION	74
SOURCES OF KNOWLEDGE	75
THE APPEAL TO FAITH	77
THE APPEAL TO INTUITION	79
THE APPEAL TO MYSTICAL EXPERIENCE	81
ASTROLOGY REVISITED	84

Summary	90
Study Questions	91
Evaluate these Claims	91
Discussion Questions	91
Field Problem	91
Critical Reading and Writing	92
Suggested Readings	92
Notes	93

Chapter 5 Looking for Truth in Personal Experience 96

SEEMING AND BEING	97
PERCEIVING: WHY YOU CAN'T ALWAYS BELIEVE WHAT YOU SEE	99
Perceptual Constancies	99
The Role of Expectation	100
Looking for Clarity in Vagueness	101
The Blondlot Case	105
"Constructing" UFOs	107
REMEMBERING: WHY YOU CAN'T ALWAYS TRUST WHAT YOU RECALL	111
CONCEIVING: WHY YOU SOMETIMES SEE WHAT YOU BELIEVE	118
Denying the Evidence	118
Subjective Validation	120
Confirmation Bias	126
The Availability Error	130
The Representativeness Heuristic	134
Anthropomorphic Bias	136
Against All Odds	139

ANECDOTAL EVIDENCE: WHY TESTIMONIALS
CAN'T BE TRUSTED 142

The Variable Nature of Illness 144

The Placebo Effect 146

Overlooked Causes 147

SCIENTIFIC EVIDENCE: WHY CONTROLLED STUDIES
CAN BE TRUSTED 148

Summary 150

Study Questions 151

Evaluate these Claims 151

Discussion Questions 152

Field Problem 152

Critical Reading and Writing 152

Suggested Readings 153

Notes 153

Chapter 6 Science and Its Pretenders 158

SCIENCE AND DOGMA 159

SCIENCE AND SCIENTISM 160

SCIENTIFIC METHODOLOGY 161

CONFIRMING AND REFUTING HYPOTHESES 166

CRITERIA OF ADEQUACY 171

Testability 172

Fruitfulness 174

Scope 177

Simplicity 178

Conservatism 180

CREATIONISM, EVOLUTION, AND CRITERIA
OF ADEQUACY 181

Scientific Creationism 183

Intelligent Design 191

PARAPSYCHOLOGY 197

Summary 211

Study Questions 212

Evaluate these Claims 213

Discussion Questions 213

Field Problem 213

Critical Reading and Writing 213

Suggested Readings 214

Notes 215

Chapter 7 Case Studies in the Extraordinary 220

THE SEARCH FORMULA 222

Step 1: State the Claim 223

Step 2: Examine the Evidence for the Claim 223

Step 3: Consider Alternative Hypotheses 224

Step 4: Rate, According to the Criteria of Adequacy,
Each Hypothesis 225

HOMEOPATHY 227

INTERCESSORY PRAYER 231

UFO ABDUCTIONS 234

COMMUNICATING WITH THE DEAD 247

NEAR-DEATH EXPERIENCES 252

GHOSTS 267

CONSPIRACY THEORIES 275

Summary 287

Study Questions 288

Evaluate these Claims 288

Field Problem 289

Critical Reading and Writing 289

Suggested Readings 290

Notes 290

Chapter 8 Relativism, Truth, and Reality 295

WE EACH CREATE OUR OWN REALITY 297

REALITY IS SOCIALLY CONSTRUCTED 301

REALITY IS CONSTITUTED BY CONCEPTUAL SCHEMES 306

THE RELATIVIST'S PETARD 311

FACING REALITY 313

Summary 315

Study Questions 316

Evaluate these Claims 316

Discussion Questions 316

Field Problem	316
Critical Reading and Writing	317
Suggested Readings	318
Notes	318
CREDITS	C-1
INDEX	I-1