



JOHN CHAFFEE

THINKING
CRITICALLY

Eleventh Edition

The Critical Thinker's Guide to Reasoning



A modified version of a schema originally designed by Ralph H. Johnson.

ELEVENTH EDITION

Thinking Critically

JOHN CHAFFEE, PhD

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Australia • Brazil • Japan • Korea • Mexico • Singapore • Spain • United Kingdom • United States

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For Jessie and Joshua

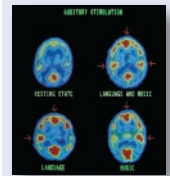
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Learn to think critically about what you see on pages 5, 6, 16, 33, and 38.

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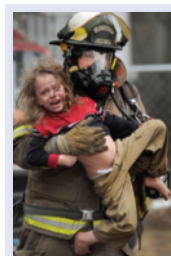


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Preface

Critical thinking is the cornerstone of higher education, the hallmark of an educated person, and teaching a course in critical thinking is one of the most inspiring and rewarding experiences that a teacher can have. Because the thinking process is such an integral part of who we are as people, the prospect of expanding students' thinking implies expanding who they are as human beings—the perspective from which they view the world, the concepts and values they use to guide their choices, and the impact they have on the world as a result of those choices. Teaching students to become critical thinkers does not mean simply equipping them with certain intellectual tools; it involves their personal transformation and its commensurate impact on the quality of their lives and the lives of those around them. This is truly education at its most inspiring!

Thinking Critically, Eleventh Edition, is a comprehensive introduction to the cognitive process and helps students develop the higher-order thinking abilities needed for academic study and career success. Based on a nationally recognized interdisciplinary program in Critical Thinking established in 1979 at LaGuardia College (The City University of New York) and involving more than two thousand students annually, *Thinking Critically* integrates various perspectives on the thinking process drawn from a variety of disciplines such as philosophy, cognitive psychology, linguistics, and the language arts (English, reading, and oral communication).

Thinking Critically addresses a crucial need in higher education by introducing students to critical thinking and fostering sophisticated intellectual and language abilities. Students apply their evolving thinking abilities to a variety of subjects drawn from academic disciplines, contemporary issues, and their life experiences. *Thinking Critically* is based on the assumption, supported by research, that learning to think more effectively is a synthesizing process, knitting critical thinking abilities together with academic content and the fabric of students' experiences. Thinking learned in this way becomes a constitutive part of who students are.

Features

This book has a number of distinctive characteristics that make it an effective tool for both instructors and students. *Thinking Critically*

- ***teaches the fundamental thinking, reasoning, and language abilities that students need for academic success.*** By focusing on the major thinking and language abilities needed in all disciplines, and by including a wide variety of readings, the text helps students perform more successfully in other courses.

- ***stimulates and guides students to think clearly about complex, controversial issues.*** The many diverse readings provide in-depth perspectives on significant social issues. More important, the text helps students develop the thinking and language abilities necessary to understand and discuss intelligently these complex issues.
- ***presents foundational thinking, reasoning, and language abilities in a developmentally sequenced way.*** The text begins with basic abilities and then carefully progresses to more sophisticated thinking and reasoning skills. Cognitive maps open each chapter to help students understand the thinking process as well as the interrelationship of ideas within that chapter.
- ***engages students in the active process of thinking.*** Exercises, discussion topics, readings, and writing assignments encourage active participation, stimulating students to critically examine their own and others' thinking and to sharpen and improve their abilities. The text provides structured opportunities for students to develop their thinking processes in a progressive, reflective way.
- ***provides context by continually relating critical-thinking abilities to students' daily lives.*** Once students learn to apply critical-thinking skills to situations in their own experiences, they then apply these skills to more abstract, academic contexts. Additionally, by asking students to think critically about themselves and their experiences, the text fosters their personal development as mature, responsible, critical thinkers.
- ***integrates the development of thinking abilities with the four language skills so crucial to success in college and careers: reading, writing, speaking, and listening.*** The abundant writing assignments (short answer, paragraph, and essay), challenging readings, and discussion exercises serve to improve students' language skills.
- ***provides a design for a visual culture.*** The four-color design supports visual learning styles, prompts students to think critically about the way print media messages are shaped, and helps clarify distinctions between the many different features and elements of the book's pedagogy—text, readings, and other elements.
- ***includes coverage of analyzing visual information.*** A section in Chapter 1, “Images, Decision Making, and Thinking About Visual Information,” discusses and models the ways in which the medium shapes the message, and introduces concepts for critical evaluation of visual information. Each chapter also includes a feature, “Thinking Critically About Visuals,” that engages students in comparing and evaluating images drawn from current events and popular culture.
- ***includes substantive treatment of creative thinking.*** Chapters 1 and 12 begin and end the book by linking critical thinking to creative thinking. Chapter 1 analyzes the creative process and develops creative-thinking abilities, providing a template for approaching issues and problems both critically and creatively throughout the text. Chapter 12, “Thinking Critically, Living Creatively,” reinforces these connections and encourages students to create a life philosophy through moral choices.

- **includes a chapter on ethics.** Chapter 9, “Thinking Critically About Moral Issues,” was developed at the suggestion of reviewers who noted the deep engagement many students have with the moral and ethical choices our complex and interconnected society requires them to make.
- **includes a section on constructing extended arguments.** Chapter 10, “Constructing Arguments,” includes a section, “Constructing Extended Arguments,” that presents a clear model for researching and writing argumentative essays.
- **includes a critical-thinking test.** “Tom Randall’s Halloween Party,” or the Test of Critical Thinking Abilities, developed by the author, is included in the Instructor’s Resource Manual and in interactive form on the student website, and provides for a comprehensive evaluation of student thinking and language abilities. Using a court case format arising from a fatal student drinking incident, the test challenges students to gather and weigh evidence, ask relevant questions, construct informed beliefs, evaluate expert testimony and summation arguments, reach a verdict, and then view the entire case from a problem-solving perspective.

New to the Eleventh Edition

The eleventh edition gives students a method for integrating self-assessment throughout the course; provides new readings, films, and visuals for students to analyze and critique; and takes a casebook approach to give students a richer context in which to read individual perspectives on current issues.

A new **“Assessing Your Strategies and Creating New Goals” at the end of each chapter helps students monitor their own progress.** Self-assessment ratings provide an ongoing opportunity for students to evaluate their critical- and creative-thinking abilities, as well as how thoughtful and enlightened their choices are. Strategies are then suggested that students can methodically apply to improve their thinking abilities and, thus, their lives.

New readings increase the emphasis on important social issues. Twenty new readings have been added on such topics as the Casey Anthony trial, gun control and school shootings, climate change, genetically modified foods, and the changing notion of what constitutes a family. These timely and provocative readings have been written by a variety of noteworthy authors and journalists:

“Worse Than O.J.!” by Marcia Clark

“Casey Anthony: The System Worked” by Alan M. Dershowitz

“Casey Anthony Juror: ‘Sick to Our Stomachs’ Over Not Guilty Verdict” by Mary Kate Burke, Jessica Hopper, Enjoli Francis, and Lauren Effron

“Connecticut School Shooting ‘An Attack On America’” by Ted Anthony

“The Price of Gun Control” by Dan Baum

Edited text of remarks delivered by NRA CEO Wayne La Pierre

“Why Gun ‘Control’ Is Not Enough” by Jeff McMahan

“The (Terrifying) Transformative Potential of Technology” by Lisa Wade

Comments by Joe Scarborough on *Morning Joe*

“The Great Climate Experiment” by Ken Caldeira

“Global Warming: Hoax of the Century” by Patrick J. Buchanan
“Why Media Tell Climate Story Poorly” by Tyler Hamilton
An analysis of the crash of Avianca Airlines flight 052, by Malcolm Gladwell
“New ‘Non-Traditional’ American Families” by Kate Rice
“We Are Family” by Bob Morris
“Three Grown-Ups and a Baby” by Lisa Belkin
“What Makes a Family? Children, Say Many Americans” by John Berman
“The Rise of Post-Familialism: Humanity’s Future?” by Joel Kotkin
“Do Seed Companies Control GM Crop Research?” by the Editors of *Scientific American*

In addition to the new readings, we have also kept those readings that have earned consistently high praise from users of the book, including the following:

“Critical Thinking and Obedience to Authority” by John Sabini and Maury Silver
“The Disparity Between Intellect and Character” by Robert Coles
“Accounts of the Assassination of Malcolm X”

A casebook approach to readings reveals multiple perspectives on the important events of the day and enriches students’ understanding of the larger context of each issue. For easy reference, all the readings in the book are now listed after the detailed table of contents.

Expanded lists of “Suggested Films” help students explore the chapter’s topics through the medium of film. A description of each of the sixty suggested films helps students and instructors decide which are most interesting and relevant to their current study.

New photos in “Thinking Critically About Visuals” features and throughout the chapters give students material for critical thinking and evaluation. Each chapter features new photographs in the “Thinking Critically About Visuals” boxes and elsewhere. These twenty-eight new photographs, along with the many others in the book, challenge students to think critically about the role of images in viewers’ perceptions and about their own responses to them.

Supplements for Instructors and Students

ENHANCED INSITE FOR THINKING CRITICALLY, 11e*

Easily create, assign, and grade writing assignments with Enhanced InSite™ for *Thinking Critically, 11e*. From a single, easy-to-navigate site, you and your students can manage the flow of papers online, check for originality, and conduct peer reviews. Access a fully customizable, interactive and true-to-page eBook (YouBook), writing prompts for each chapter, private tutoring options, and resources for

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writers that include anti-plagiarism tutorials and downloadable grammar podcasts. Enhanced InSite™ provides the tools and resources you and your students need plus the training and support you want. Learn more at <http://www.cengage.com/insite>.

APLIA FOR THINKING CRITICALLY

Aplia is a learning solution that increases student effort and engagement, enabling instructors to concentrate on the important work of teaching and interacting with students. Features include customizable, auto-graded homework assignments with randomized questions; assessment analytics that track student participation, progress, and performance in real-time graphical reports; flexible gradebook tools compatible with other learning management systems; convenient course communication resources, offering a discussion board, email, document uploads, and more; and an industry-leading support team.

ONLINE INSTRUCTOR'S MANUAL

Available for download on the book's companion site, the Instructor's Manual is designed to help instructors tailor *Thinking Critically* to their own courses. The manual includes both a comprehensive bibliography of critical- and creative-thinking resources and a bibliography of suggested fiction, nonfiction readings, and films relating to the themes of the text.

QUICK COACH GUIDE TO CRITICAL THINKING

Part of the *Quick Coach Guide* series, this is a brief paperback intended to help students focus on key concepts in critical thinking, with explanations, practice exercises, and cases to help students develop their critical-thinking skills. (Instructors may contact their local sales representative for information about bundling options.)

Acknowledgments

Many persons from a variety of disciplines have contributed to this book at various stages of its development over the past editions, and I thank my colleagues for their thorough scrutiny of the manuscript and their incisive and creative comments. In addition, I offer my deepest gratitude to the faculty members at LaGuardia who have participated with such dedication and enthusiasm in the Critical Thinking program, and to the countless students whose commitment to learning is the soul of this text.

The following reviewers also provided evaluations that were of great help in preparing the Eleventh edition:

Sabine Winter, Eastfield College
Sunita Lanka, Hartnell College
James Barnes, James Madison University
Karen Zempel, Bryant and Stratton College
Joanne Richmond, Western Technical College
Kirsten Hanson, Indian Hills Community College

Jen Hirt, Penn State Harrisburg
Todd Spellman, Lincoln College
Glenda Yount, Alamance Community College
Jennifer Caseldine-Bracht, Indiana University-Purdue University
Shannon Sanchez, Cerritos College
Anissa Harris, Harding University

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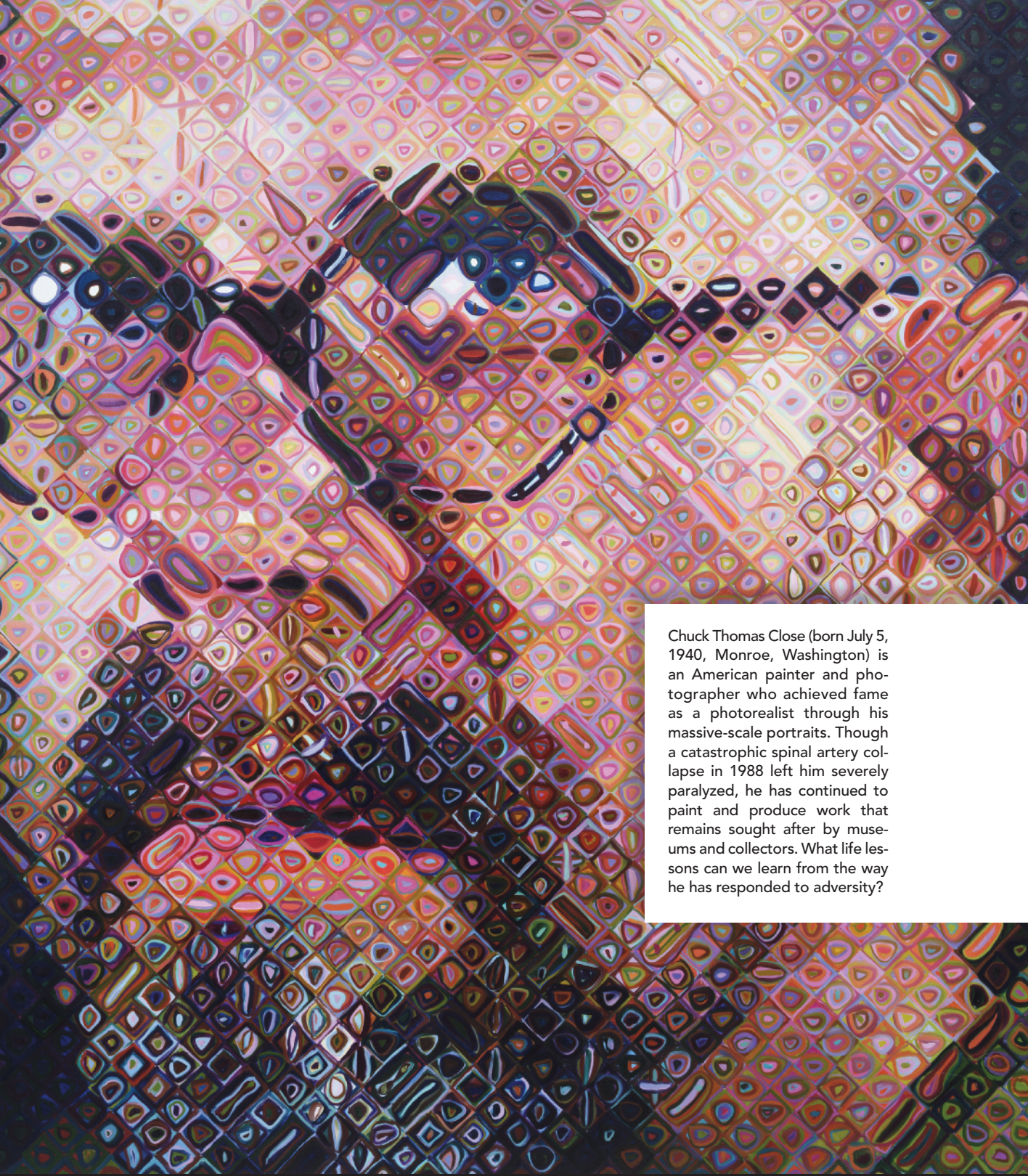
Finally, I thank my wife, Heide, and my children, Jessie and Joshua, for their complete and ongoing love, support, and inspiration. It is these closest relationships that make life most worth living. And I wish to remember my parents, Charlotte Hess and Hubert Chaffee, who taught me lasting lessons about the most important things in life. They will always be with me.

Although this is a published book, it continues to be a work in progress. In this spirit, I invite you to share your experiences with the text by sending me your comments. I hope that this book serves as an effective vehicle for your own critical thinking explorations in living an examined life. You can contact me online at Jthink@aol.com; my mailing address is LaGuardia College, City University of New York, Humanities Department, 31-10 Thomson Avenue, Long Island City, NY 11101.

John Chaffee

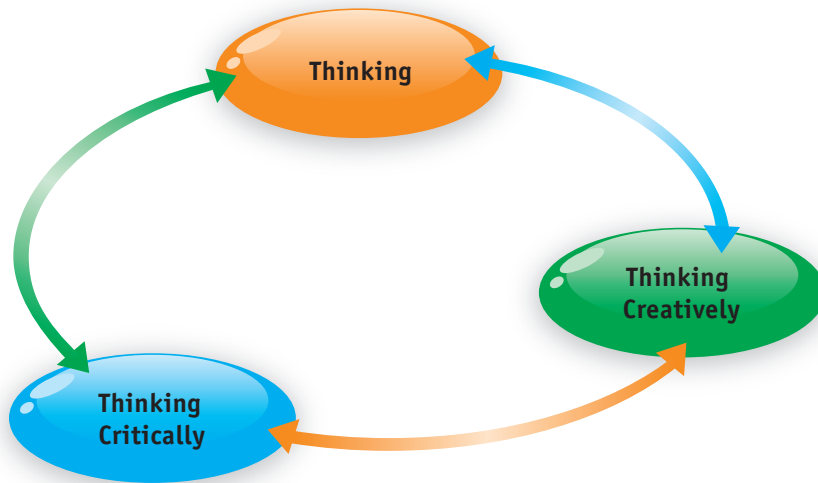
ELEVENTH EDITION

Thinking Critically



Chuck Thomas Close (born July 5, 1940, Monroe, Washington) is an American painter and photographer who achieved fame as a photorealist through his massive-scale portraits. Though a catastrophic spinal artery collapse in 1988 left him severely paralyzed, he has continued to paint and produce work that remains sought after by museums and collectors. What life lessons can we learn from the way he has responded to adversity?

Thinking



Thinking can be developed and improved by

- becoming aware of the thinking process.
- carefully examining the thinking process.
- practicing the thinking process.

Thinking is the extraordinary process we use every waking moment to make sense of our world and our lives. Successful thinking enables us to solve the problems we are continually confronted with, to make intelligent decisions, and to achieve the goals that give our lives purpose and fulfillment. It is an activity that is crucial for living in a meaningful way.

This book is designed to help you understand the complex, incredible process of thinking. You might think of this text as a map to guide you in exploring the way your mind operates. This book is also founded on the conviction that you can improve your thinking abilities by carefully examining your thinking process and working systematically through challenging activities. Thinking is an active process, and you learn to do it better by becoming aware of and actually using the thought process, not simply by reading about it. By participating in the thinking activities contained in the text and applying these ideas to your own experiences, you will find that your thinking—and language—abilities become sharper and more powerful.

College provides you with a unique opportunity to develop your mind in the fullest sense. Entering college initiates you into a community of people dedicated to learning, and each discipline, or subject area, represents an organized effort to understand some significant dimension of human experience. As you are introduced to various disciplines, you learn new ways to understand the world, and you elevate your consciousness as a result. This book, in conjunction with the other courses in your college experience, will help you become an “educated thinker,” expanding your mind and developing your sensibilities.

Achieving the goal of becoming an educated thinker involves two core processes that are the mainsprings of our thoughts and actions: **thinking critically** and **thinking creatively**. The process of *thinking critically* involves thinking for ourselves by carefully examining the way that we make sense of the world. Taking this approach to living is one of the most satisfying aspects of being a mature human being.

We are able to think critically because of our natural human ability to *reflect*—to think back on what we are thinking, doing, or feeling. By carefully thinking back on our thinking, we are able to figure out the way that our thinking operates and thus learn to do it more effectively. In this book we will be systematically exploring the many dimensions of the way our minds work, providing the opportunity to deepen our understanding of the thinking process and stimulating us to become more effective thinkers.

Of course, carefully examining the ideas produced by the thinking process assumes that there are ideas that are worth examining. We produce such ideas by thinking creatively, an activity we can define as follows.

thinking critically

Carefully exploring the thinking process to clarify our understanding and make more intelligent decisions.

thinking creatively

Using our thinking process to develop ideas that are unique, useful, and worthy of further elaboration.

Living an “Examined” Life

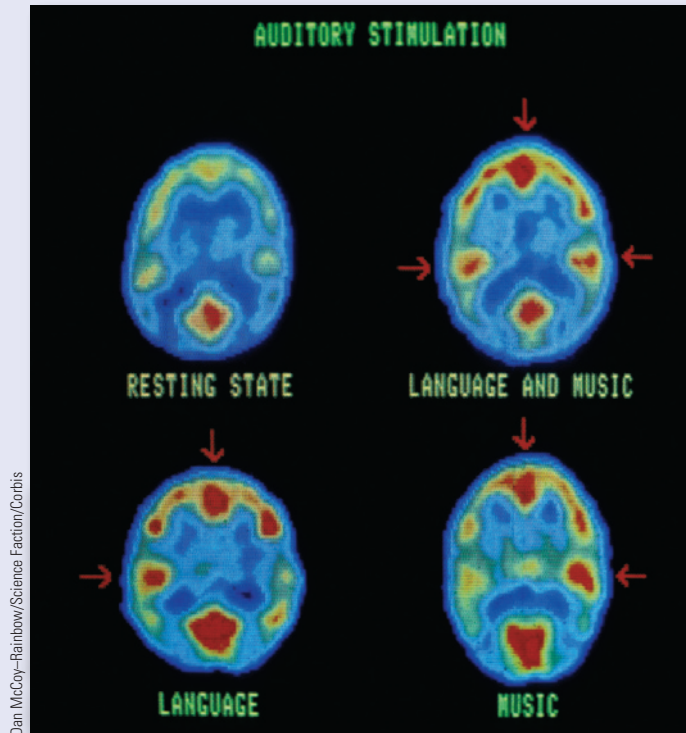
Over 2,500 years ago, the Greek philosopher Socrates cautioned, “The unexamined life is not worth living,” underscoring the insight that when we don’t make use of our distinctive human capacity to think deeply and act

Thinking Critically About Visuals

The Mystery of the Mind

Why is thinking a difficult process to understand? Why does improving our thinking involve sharing ideas with other people? Why does each person think in unique ways?

Using functional magnetic resonance imaging (or fMRI), researchers can observe changes in blood flow in the brain. In this way, they can see which parts of the brain are most active when a person is engaged in different mental processes. In the fMRI images (right), the red areas indicate the most blood flow or activity. What can we learn about the thinking process by examining the brain states that are correlated with different experiences as depicted by these different fMRI images?



intelligently, our lives have diminished meaning. In a warning that is at least as relevant today as it was when he first spoke it, Socrates cautioned his fellow citizens of Athens:

“You, my friend—a citizen of the great and mighty and wise city of Athens—are you not ashamed of heaping up the greatest amount of money and honor and reputation, and caring so little about wisdom and truth and the greatest improvement of the soul, which you never regard or heed at all?”

Thinking Critically About Visuals

You Are the Artist of Your Life

In what ways does this metaphor help you understand your personal development? In what ways does it highlight the role of personal responsibility in your life?



Adam Crowley/Photodisc/Getty Images

Today's world is a complex and challenging place in which to live. The accelerated pace at which many people live often makes them feel as though they are rushing from deadline to deadline, skating on the surface of life instead of exploring its deeper meanings. What is the purpose of your life? Who are you, and who do you want to become? These are essential questions that form the core of life, and yet the velocity of our lives discourages us from even posing these questions, much less trying to answer them.

We all have our own unique challenges to meet in order to find our life path, just as the painter Chuck Close (pictured below) has overcome physical disability to achieve great success. What choices will you have to make in order to reach your full potential as a person?



AP Photo/Mark Lemmitan

Your efforts to become thoughtful and reflective, to explore the nature of your self and the meaning of your life, are made even more difficult by the unthinking world in which we live. Consider all of the foolish opinions, thoughtless decisions, confused communication, destructive behavior, and self-absorbed, thoughtless people whom you have to deal with each day. Reflect on the number of times you have scratched your head and wondered, "What was that person thinking?" And how many times have you asked yourself, "What was I thinking?" The disturbing

truth is that many people don't think very well; they are not making use of their potential to think clearly and effectively.

Every day you encounter a series of choices, forks in your life path that have the cumulative effect of defining you as a person. In thinking about these choices, you may discover that there are habitual patterns in your life that rarely change. If you find that your life is composed of a collection of similar activities and routines, don't despair; this is typical, not unusual. However, it may be an indication that you are not living your life in the most thoughtful fashion possible, that your choices have become automatic, and that your experiences are fixed in certain "ruts." If this is the case, it may be time to reflect on your life, reevaluate the choices you are making, and consider living your life in a more reflective and creative fashion.

You are an artist, creating your life portrait, and your paints and brush strokes are the choices you make each day of your life. This metaphor provides you with a way to think about your personal development and underscores your responsibility for making the most intelligent decisions possible.

You have the capacity to create a richly fulfilling life, but you must develop and make full use of your thinking potential to do so. By becoming a true educated thinker, you will have the tools to unlock the mysteries of yourself and meet the challenges of the world.

A Roadmap to Your Mind

This book is designed to help you become an educated thinker by providing you with many opportunities to use your mind in ways that will strengthen and elevate your thinking abilities. Many of these abilities—such as working toward your goals, solving problems, or making intelligent decisions—will already be familiar to you. Others, such as understanding the conceptualizing process or constructing rigorous extended arguments, will be less so. But whatever your degree of familiarity, and no matter what your level of expertise, you can always improve your thinking abilities, and doing so will enrich your life in countless ways. Here is a brief preview of the thinking abilities you will be studying—the very same abilities that you will be *using to think with* as you study them! (The numbers following the abilities refer to the chapters that deal with them.)

- Establishing and achieving your goals (1)
- Becoming an intelligent and effective **decision maker** (1)
- Becoming a confident and productive **creative thinker** (1)
- Becoming an independent, informed, and open-minded **critical thinker** (2)
- Learning to analyze and discuss complex, controversial ideas in an organized fashion (2)
- Becoming a powerful and successful **problem solver** (3)

- Becoming familiar with the perceptual “lenses” through which you view the world, and understanding the way these lenses shape and influence your entire experience (4)
- Learning to develop informed, well-supported beliefs and achieve authentic knowledge of important issues (5)
- Learning to critically analyze information and images presented in the media, the Internet, and popular culture (5)
- Developing your ability to understand and use **language** in an effective way in order to express your ideas clearly and coherently (6)
- Learning to form and apply concepts in order to understand the world in a clear, sophisticated way (7)
- Developing your ability to relate and organize concepts in complex thinking patterns (8)
- Learning to think critically about ethical issues and moral beliefs (9)
- Learning to construct logically valid and compelling arguments to support your point of view (10)
- Learning to evaluate the soundness of deductive and inductive arguments and detect illogical ways of thinking (“fallacies”) (10, 11)
- Developing your ability to make enlightened choices and work toward creating a meaningful and fulfilling life (12)

Of course, these abilities do not operate in isolation from one another; instead, they work together in complex patterns and relationships. So, for example, in the remainder of this first chapter, we’re going to explore three core areas that are central to being an accomplished thinker and living a successful, fulfilling life:

- Establishing and achieving your goals
- Becoming an intelligent and effective decision maker
- Becoming a confident and productive creative thinker

Achieving your full potential in these areas involves *all* of the other thinking abilities that you will be studying in this book. In this chapter you will be laying the foundation for achieving your goals, making effective decisions, and learning to think creatively. However, your abilities in these areas will continue to grow as you develop and practice the full range of your thinking capabilities included in this text.

Working Toward Goals

“Ah, but a man’s reach should exceed his grasp, / Or what’s a heaven for?”

—Robert Browning

My future career goal is to become a professional photographer, working for *National Geographic Magazine* and traveling around the world. I originally had