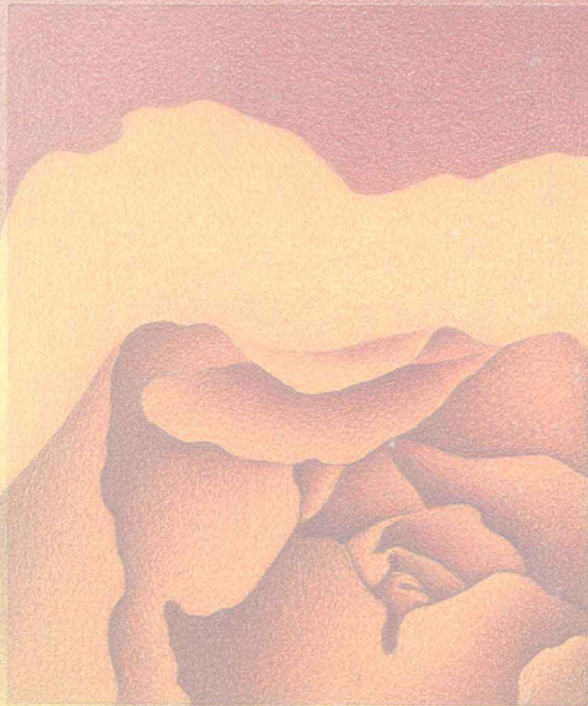


PSYCHOLOGY

Michael S. Gazzaniga



PSYCHOLOGY

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For my daughter, Marin

Reflecting Upon Reflections

Approaching the mirror
One expects to see
The one, the only,
The unique "Me."

But do others always see
The same you?
Or is it a different person
From whom you thought they knew?

We only see ourselves
As an opposite reflection
So is the way we're seen by others
The ultimate perfection?

PREFACE

This book was written with the intention of creating a lively yet scholarly introduction to the viewpoints, objectives, and uses of psychology. This approach presents the major concepts rather than a series of summaries of the undigested findings of the many researchers across the broad field of psychology.

In recent years, the influence of psychological thought has been felt in a number of other disciplines including biology, physiology, linguistics, education, and law. Newer fields, such as the communication sciences, ethology, and sociobiology, incorporate a psychological basis into their very premises. The give and take have served to focus the purpose of psychology proper and have stimulated interdisciplinary research into these fields. This text was conceived with an eye to these applications and exchanges. It is intended for the student and teacher who are willing to exercise both their intellectual skills and imagination in entering the ongoing dialog that is the nature of psychology.

The book is divided into six parts. Five of the parts include hypothetical conversations between two or three of the leaders in psychology and social thought. Some of the figures are historical, some contemporary, and the dialogs are adapted from their own writings. Their insights are meant to set the tone for the part and to stimulate students to consider the sometimes complementary, sometimes contradictory, theories in psychology.

Each of the 18 chapters is designed to supply the student with the best available information on a given topic, and “boxes”

are inserted regularly to update the students on some of the latest research in that area. The summaries at the end of each chapter highlight the chapter and, along with the book’s complete glossary, should facilitate studying.

We have also made available a Study Guide for the student and an Instructor’s Manual and Test Bank for the instructor.

In Part One, “Introduction and General Background,” Sigmund Freud, John B. Watson, Wolfgang Köhler, and Wilhelm Wundt introduce the breadth of the field and lay the foundation for a discussion of both the environmental and biological bases of thought and behavior. As they argue the purposes and methods of psychology, they reveal the immensely difficult process of defining the field. After the dialog, the material that follows explores the range and dimensions of psychological study and examines the underlying assumptions that have been made concerning the nature of the mind and brain.

Part Two, “Brain, Behavior, and Experience,” explores the relationships between brain, behavior, and experience by first defining the enormously important physiological foundations and then discussing the many factors that play a role in the developmental processes. Jean Piaget and Jerome Bruner help carry Part Two into the area of developmental psychology with their dialog on growth and development from childhood to old age.

Part Three, “Sensation, Perception, and Consciousness,” begins with the seemingly simple roles of the different sensory processes. Then the perceptual processes are

introduced with emphasis on relativity and the cognitive components. A conversation between James Gibson and Richard Gregory, contemporary theorists in perception, highlights the especially difficult conceptual problems in sensation and perception while presenting a framework for integrating the often technical ideas into the field as a whole. This leads to the chapter on consciousness and the many theories that help us try to understand and define this complex state.

One reason consciousness is so hard to define is that the human organism is continually changing, as discussed in Part Four, "The Changing Organism." The chapter on learning deals with the different types of conditioning and the variety of constraints on learning. The language chapter takes us through the basic structure of language to the development and learning of language, stressing its impact on cognitive development. The memory chapter involves memory strategies, thinking, and problem solving.

The five chapters in Part Five, "Toward Integration of the Person," all relate to that task. The part begins with an entire chapter devoted to motivation and emotion. Then we introduce personality theory, which leads to the chapter on intelligence and psychological measurement. A hypothetical dialog between Erich Fromm, Erik Erikson, and Carl Rogers ends the next chapter on abnormal behavior and deviance. They introduce clinical psychology by giving their definitions of abnormality and deviance and by discussing their different therapy methods. The last chapter in this part discusses different types of therapy as techniques for changing behavior.

The final part, Part Six, is entitled, "Psychology and the Social Environment." Social perspectives on behavior are dis-

cussed and environmental psychology is introduced. In the last chapter, psychiatrists Thomas Szasz and Karl Menninger are placed in a hypothetical dialog with Justice Luis Brandeis, a social psychologist of his own sort, to discuss the applications of theoretical principles and assumptions in psychology to real social processes. The material that follows includes the implications of social theory for the adequate functioning of the social body. This last chapter on the interaction between law and psychology represents a new departure for an introductory text.

It takes an enormous amount of time, energy, people, arguments, and martinis to write a book like this. And I hope you think the finished product is as excellent as I think it is. I would like to thank several people who helped write specific sections: Ann Premack on the subject of language, Drs. James Terhune and Marc Jouandet on learning and motivation, Dr. Glenn Davis on social psychology, and Dr. John Seamon on memory. Also my thanks to Dr. John Sidtis, who helped enormously on writing the special-interest boxes. Also, Dr. William Hirst read the entire manuscript and made many helpful suggestions.

Special thanks go to the enormously talented Dr. Arthur Sandusky, who not only guided me through some of the topics in sensation and perception, but who had the nerve to go beyond psychology and attain a law degree. It was my conversations with him that led me to the conjectural dialogs and to the last chapter dealing with the interface of law and psychology. He also read the entire manuscript and helped immensely on every topic area.

The special consultants, Professors John Neale, George Miller, David Premack, and Stanley Schacter, also deserve the warmest praise for the critical reading and advice on

various aspects of the manuscript. Psychologists of their caliber are continually critical and all insisting on changes and improvements. I think I made most if not all, but one can never be sure. Accordingly, I am ultimately personally responsible for any error of commission or omission (including the times I was outvoted).

Lastly, thanks to Georgiana Silk for her wonderful photographs and to the superb staff at Harper & Row who produced this

book. Thanks also, again, to those hoards of reviewers who made my life so miserable for the last three years and who created the best example of classical conditioning I have yet to experience—I shudder every-time I receive a special delivery manila envelope.

Michael S. Gazzaniga
New York

CONTENTS

	Preface	x
PART ONE	Introduction and General Background	1
Chapter 1	Psychology: Past, Present, and Future	3
	Psychology's Past	5
	<i>A Conjectural Dialog</i>	9
	Psychology's Present	16
	Psychology's Future	30
	Organization of the Book	30
	Summary	31
	Glossary	32
	Recommended Readings	33
Chapter 2	Genes, Environment, and Behavior	35
	The Development of Species	36
	<i>Ethology: Why Do Animals Join the Mob?</i>	41
	The Development of the Individual Organism	44
	Studies in Human Behavioral Genetics	57
	Summary	59
	Glossary	61
	Recommended Readings	62
PART TWO	Brain, Behavior, and Experience	63
Chapter 3	Physiological Foundations	65
	The Nervous System	66
	The Visual System	70
	The Endocrine System	75
	<i>Plasticity in the Developing Visual System</i>	76
	The Physiological Basis of Motivation	81
	Brain Stimulation: The Physiology of Reward	85
	<i>The Electrophysiology of Attention</i>	87
	Summary	91
	Glossary	93
	Recommended Readings	94

Chapter 4	Developmental Processes	95
	Developmental Determinants	96
	Infancy: Maturation and Socialization	96
	Development of Cognition: Piaget	99
	<i>A Conjectural Dialog</i>	104
	Childhood Socialization	107
	<i>Sex Role Concepts in Children</i>	110
	Adolescent Socialization	114
	Adult Socialization	118
	<i>Pathological Aging</i>	124
	Summary	126
	Glossary	127
	Recommended Readings	128
PART THREE	Sensation, Perception, and Consciousness	131
Chapter 5	Sensory Processes	133
	Measuring Sensitivity	134
	<i>Social Psychophysics: Scaling, from Attitude to Appetite</i>	138
	Audition (Hearing)	140
	<i>Spatial Frequency Analysis of Visual Acuity</i>	150
	Vision	150
	The Other Senses	158
	Summary	160
	Glossary	162
	Recommended Readings	163
Chapter 6	Perceptual Processes	164
	Information and Redundancy in Sensory Systems	166
	Pattern Perception	169
	Perceptual Constancy	172
	<i>Speech Perception: Listening for Mispronunciations</i>	174
	The Relativity of Perception	179
	Cognitive Components	181
	Gestalt vs. Cognition in Perception	186
	<i>Visually Perceiving Biological Motion</i>	187
	<i>A Conjectural Dialog</i>	190
	Summary	194
	Glossary	195
	Recommended Readings	196

Chapter 7	States of Consciousness	197
	Measuring States of Consciousness	198
	Sleeping and Dreaming	200
	Altered States of Consciousness	206
	<i>Cocaine or Food?</i>	214
	The Split Brain	217
	Summary	224
	Glossary	224
	Recommended Readings	225
PART FOUR	The Changing Organism	227
Chapter 8	Learning	229
	Classical Conditioning	230
	<i>Drug Tolerance as a Conditioned Response</i>	240
	Operant Conditioning	244
	<i>Reinforcement as Therapy</i>	246
	Constraints on Learning	255
	Summary	258
	Glossary	260
	Recommended Readings	261
Chapter 9	Language and Cognitive Development	262
	The Structure of Language	263
	The Child as Chimp	265
	The Development of Language	270
	<i>Understanding Metaphor</i>	276
	The Learning Process	281
	Summary	284
	Glossary	285
	Recommended Readings	286
Chapter 10	Memory	287
	Thinking and Problem Solving	288
	Memory: Types and Strategies	290
	What is Remembered?	301
	Learning or Memory?	308
	<i>Mental Images</i>	311
	Summary	315
	Glossary	316
	Recommended Readings	317

PART FIVE	Toward Integration of the Person	319
Chapter 11	Motivation and Emotion	321
	Motivation	322
	Theories of Motivation	329
	<i>Motivating Attitude Changes</i>	331
	Emotion	343
	Summary	351
	Glossary	352
	Recommended Readings	354
Chapter 12	Personality Theory	355
	Psychodynamic Theories	356
	Learning Theories	366
	Existentialist Theories	369
	Trait Theories	371
	<i>Hardy Personalities</i>	374
	Interactionism	377
	Conclusion	383
	Summary	383
	Glossary	384
	Recommended Readings	386
Chapter 13	Intelligence and Psychological Measurement	387
	Tests of Individual Differences	388
	Group Differences in IQ	392
	<i>Nature vs. Nurture: Determinants of Mental Capacity</i>	399
	Evaluating Psychological Measurement	401
	Summary	411
	Glossary	413
	Recommended Readings	413
Chapter 14	Abnormal Behavior and Deviance	414
	Defining Deviance	416
	Models of Deviance	417
	<i>Some Reactions to Hallucinogenic Drugs: Inspiration or Madness?</i>	418
	Mental and Emotional Disturbances	428
	<i>Depression</i>	433
	<i>A Conjectural Dialog</i>	439
	Summary	443
	Glossary	445
	Recommended Readings	445

Chapter 15	Techniques for Changing Behavior	447
	Practitioners of Behavioral Change	448
	Which Therapy is Best?	449
	Somatotherapy	450
	<i>Treating Obsessive–Compulsive Neurosis</i>	455
	Psychotherapy	457
	Behavior Therapy	464
	Summary	470
	Glossary	471
	Recommended Readings	473
PART SIX	Psychology and the Social Environment	475
Chapter 16	Social Perspectives on Behavior	477
	Social Facilitation	478
	Social Motives	484
	Attribution Theory	489
	<i>Loneliness: A State of Mind</i>	492
	The Nature of Attitudes	495
	Summary	502
	Glossary	503
	Recommended Readings	504
Chapter 17	Environmental Psychology	506
	Perception and the Environment	507
	Utilization of Space	512
	Noise Pollution	520
	Environmental Design	521
	<i>Dormitory Living: An Environment Laboratory</i>	526
	Summary	531
	Glossary	532
	Recommended Readings	533
Chapter 18	Psychology and the Legal System	534
	Determinism and Free Will	535
	<i>The Insanity Plea</i>	538
	The Jury	542
	<i>A Conjectural Dialog</i>	549
	Summary	555
	Glossary	556
	Recommended Readings	556

Appendix	Statistics in Psychological Research	557
Glossary		571
References		584
Name Index		607
Subject Index		612

PART ONE

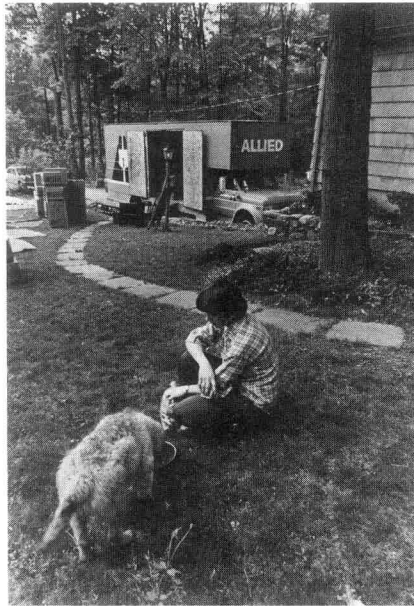


**Introduction
and
General Background**

Psychology: Past, Present, and Future

The development and flourishing of psychology since its recognition as a true science in the early years of this century prove that there can be no return to the unexamined life. None of us can deny that we are strongly interested in the nature of human behavior. This understanding—of why humans behave as they do—is not close at hand, and the constantly changing body of psychological research reflects this fact.

Psychology has been shaped into a greatly diversified field by the ideas of literally thousands of original and creative thinkers and researchers. The outline of the Master Plan of the *Annual Review of Psychology* (see Table 1.1) reflects this diversity. This review examines the many areas of psychology, from personality, develop-



ment, and abnormal behavior to the newer, less developed fields of consumer psychology and environmental psychology. The American Psychological Association has no fewer than 36 separate divisions, such as “developmental,” “social,” and “experimental,” by which

it tries to organize the interests of its members. In some cases, these divisions have their own separate associations, which contain further subdivisions.

Obviously, there is no way anyone can learn about the activities of all these psychologists in a single course. I hope, however, that this textbook will give you an understanding of this dynamic, broad, and constantly changing discipline and its wide implications for the modern world and for your own life.

Table 1.1 *Master Plan*

Development	Social Psychology
Cognitive	Attitudes and opinions
Personality and social	Personal interaction
Early experience	Mass communication
Motivation	Study of small groups
Biological approaches	Mass phenomena
Social approaches	Psychology and culture
Learning	Industrial-Organizational Psychology
Verbal learning and memory	Personnel attitudes, morale, and motivation
Neurophysiology of learning	Organizational development
Animal learning	Personnel selection, classification, and job placement
Models of learning	Human performance
Cognitive Processes	Personnel development and training
Psycholinguistics	Consumer psychology
Thinking and concept formation	Measurement and Statistics
Computer simulation	Statistics and data analysis
Behavioral decision theory	Scaling
Education and Counseling	Test theory
Student counseling	Abnormal and Clinical Psychology
Human abilities (individual differences)	Approaches to abnormal behavior
Instructional psychology	Statistical, epidemiological, diagnostic approaches
Comparative Psychology and Ethology	Social and cultural influences in psychopathology
Receptor Processes	Neurological and physiological bases of psychopathology
Audition	Assessment of abnormal behavior
Auditory psychophysics	Intervention in abnormal behavior
Auditory physiology	Individual methods
Vision	Group methods
Color	Social and community intervention methods
Spatial vision	Prevention of mental disorders
Visual sensitivity	Genetics of Behavior
Chemical senses	Psychology in X Country
Somesthetic senses	Ungrouped
Vestibular sensitivity	Aesthetics
Perception	Attention
Personality	Environmental
Theory and techniques of assessment	Gerontology (maturity and aging)
Life history research	Humanistic psychology
Physiological Psychology	Hypnosis
Brain functions	Program evaluation
Electrophysiology and behavior	
Biochemistry and behavior	
Sleep and dreams	

Source: Mark R. Rosenweig and Lyman W. Porter, eds. *Annual Review of Psychology* (Palo Alto, Calif.: *Annual Reviews*, 1976), vol. 27.
