

**Annual Editions**

# PSYCHOLOGY



**87/88**



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# PSYCHOLOGY

## 87/88

### Editor

**Michael G. Walraven**  
Jackson Community College

Michael G. Walraven is Dean of Instruction and a professor of psychology at Jackson Community College. He received a B.A. from the University of Maryland in 1966, an M.A. from Western Michigan University in 1968, and a Ph.D. from Michigan State University in 1974. He is affiliated with the American Psychological Association, the Association for Behavior Analysis, and the Biofeedback Society of Michigan.

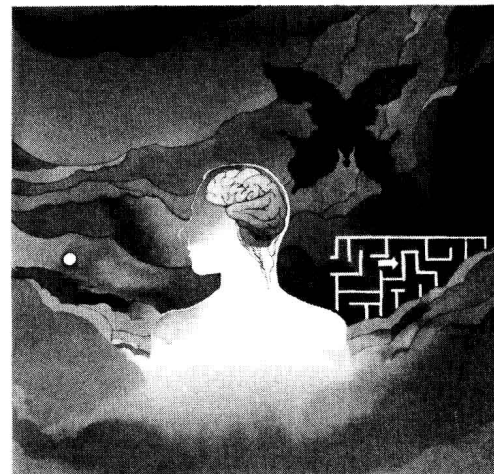
### Editor

**Hiram E. Fitzgerald**  
Michigan State University

Hiram E. Fitzgerald is a professor and associate chairperson in the Department of Psychology at Michigan State University. He received a B.A. in 1962 from Lebanon Valley College, and an M.A. in 1964 and a Ph.D. in 1967 from the University of Denver. In addition to holding memberships in a variety of scientific associations, he is the Executive Director of the International Associations for Infant Mental Health, and editor of the *Infant Mental Health Journal*. He has authored and edited over one hundred and twenty publications.

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**Michael G. Walraven**  
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Members of the Advisory Board are instrumental in the final selection of articles for each edition of Annual Editions. Their review of articles for content, level, currency, and appropriateness provides critical direction to the editor and staff. We think you'll find their careful consideration well reflected in this volume.

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# To The Reader

In publishing ANNUAL EDITIONS we recognize the enormous role played by the magazines, newspapers, and journals of the public press in providing current, first-rate educational information in a broad spectrum of interest areas. Within the articles, the best scientists, practitioners, researchers, and commentators draw issues into new perspective as accepted theories and viewpoints are called into account by new events, recent discoveries change old facts, and fresh debate breaks out over important controversies.

Many of the articles resulting from this enormous editorial effort are appropriate for students, researchers, and professionals seeking accurate, current material to help bridge the gap between principles and theories and the real world. These articles, however, become more useful for study when those of lasting value are carefully collected, organized, indexed, and reproduced in a low-cost format, which provides easy and permanent access when the material is needed. That is the role played by *Annual Editions*. Under the direction of each volume's *Editor*, who is an expert in the subject area, and with the guidance of an *Advisory Board*, we seek each year to provide in each ANNUAL EDITION a current, well-balanced, carefully selected collection of the best of the public press for your study and enjoyment. We think you'll find this volume useful, and we hope you'll take a moment to let us know what you think.

Psychology means many things to many people. Students select a course in psychology because they want answers to a variety of questions. Students want to know how we are motivated, how we think, and how our personalities develop. Students are curious about how we learn, how our memories work, what effects certain experiences have on us, how we change as we grow older, why some of us respond to life events in maladaptive ways, and how those of us who do can be helped. Psychology attempts to answer all of these questions and more.

Psychology approaches these issues in a specific way: the scientific method. Researchers use carefully defined techniques to discover answers to basic questions, in order that their findings may be combined with the findings of other researchers, to eventually paint a complete picture of that most complex of all living organisms: humankind itself. The research results are published in technical journals written for specialists. It is very difficult for the layperson to keep abreast of new findings; indeed, it is even difficult for the professional psychologist to be current in areas other than her or his speciality.

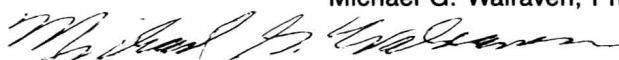
For these reasons, we find more and more accounts and summaries of psychological research in the popular press. Newspapers and magazines are meeting the need of the average adult to discover and understand the complexities of human behavior. But who can spend the time to search out and sort through the large number of articles? And can the average person accurately distinguish those articles which represent solid findings from those which draw inaccurate or overstated conclusions? *Annual Editions: Psychology 87/88* is designed to meet this requirement, by providing an organized selection of accurate, readable, and current articles drawn from a wide range of sources. Most of the articles are written not by psychologists, but by journalists and science writers who recognize the importance of certain areas of research and match their talents to the needs and interests of their readers. A few of the articles are written by psychologists—researchers who are gifted in the ability to describe their work in clear and uncluttered styles, retaining the excitement of original discovery and sharing it with us.

The particular articles selected for this volume were chosen to be representative of current work in psychology, both theoretical and experimental. They were selected because they are accurate in their reporting, and provide examples of the types of psychological research discussed in most introductory psychology courses and textbooks. As in any science, some of the findings discussed in this collection are startling, while others will confirm what was already suspected. Some will invite speculation about social and personal implications; others will demand careful thought about potential misuse or dangerous applications of research findings. You will be expected to make the investment of effort and critical judgment needed to answer such questions and concerns. This is a reflection of the field of psychology itself, and you are invited to join in this exploration.

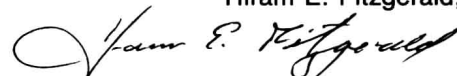
One of the goals of putting together this collection of articles was to make it readable and useful. Look at the organization of this book, and compare it to the organization of your textbook and course syllabus or outline. By examining the topic guide, you can identify those articles most appropriate to any particular unit of study in your course. Your instructor may provide some help in this effort. As you read the articles, try to connect these contents with the principles you are learning about from your text and classroom lectures and discussions. Some of the articles will help you to better understand a specific area of research, while others are designed to help you connect and integrate information from various research efforts. Both of these strategies are important in learning about psychology, or any other science, because it is only through intensive investigation and subsequent integration of the findings of many other scientists that we are able to discover and apply new knowledge.

During the course of your reading, please take time to guide the annual revision of this anthology by filling out the article rating form. With your help, this collection will be even better next year.

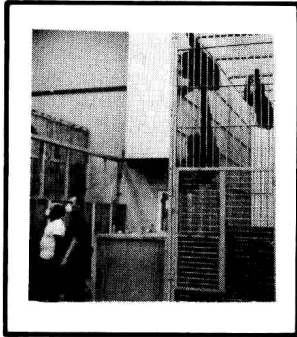
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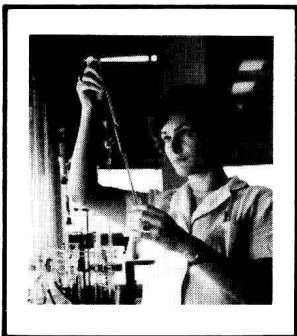
Editors



## Unit 1

### The Science of Psychology

Two articles examine the morality of human and animal experimentation as well as the necessity for research.



## Unit 2

### Biological Bases of Behavior

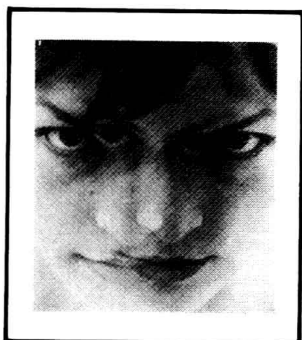
Five selections discuss the biological bases of behavior. Topics examined include brain functions, sex differences of the human brain, the biological clock, and the brain's control over the body.

#### To the Reader Topic Guide Overview

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|   | 6  |
| 1. <b>Animals in Research: The Case for Experimentation</b> , Frederick A. King, <i>Psychology Today</i> , September 1984.<br>Animal-rights activists argue that psychological <i>experimentation</i> with <i>animals</i> is excessively cruel and produces no valuable results. King summarizes <i>research</i> on animal studies demonstrating that both arguments are false. | 10 |
| 2. <b>Research Through Deception</b> , Morton Hunt, <i>The New York Times Magazine</i> , September 12, 1982.<br>In recent years, restrictions on the use of <i>deception</i> have dramatically changed <i>social psychology</i> . A close look at a typical experiment reveals both the positive and negative aspects of these restrictions.                                    | 18 |

#### Overview

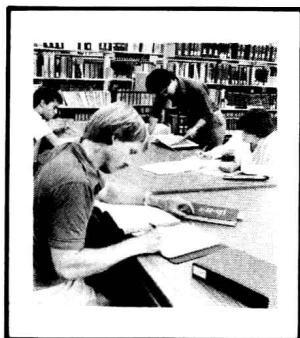
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|---|----|
| 3. <b>Right Brain, Left Brain: Fact and Fiction</b> , Jerre Levy, <i>Psychology Today</i> , May 1985.<br>In recent years, a focus on specialized functions has led to the popular belief that the two <i>cerebral hemispheres</i> act independently. Now a noted researcher clarifies the <i>differentiation</i> of the <i>brain</i> as well as its normal integrated functioning.  | 20 |
| 4. <b>The Social Brain</b> , Michael S. Gazzaniga, <i>Psychology Today</i> , November 1985.<br>Based on the careful study of several split-brain patients who demonstrate <i>language</i> in both hemispheres of the <i>brain</i> , this researcher uncovers a likely interpretation of human <i>beliefs</i> and hypotheses.  | 23 |
| 5. <b>Male Brain, Female Brain: The Hidden Difference</b> , Doreen Kimura, <i>Psychology Today</i> , November 1985.<br>A special <i>dichotic listening</i> technique which permits the discovery of <i>sex differences</i> in the organization and functioning of the human <i>brain</i> is described.  | 29 |
| 6. <b>Is It One Clock, or Several, That Cycle Us Through Life?</b> Susan Cunningham, <i>APA Monitor</i> , September 1985.<br>The article explains why the scientific search for the <i>biological clock</i> which controls body rhythms has focused on the superchiasmatic nuclei which regulate <i>sleeping</i> , waking, heart rate, and the secretion of numerous <i>hormones</i> .  | 35 |
| 7. <b>Mind-Body Connection: How the Mind Talks to the Body</b> , <i>Bostonia</i> , September/October 1984.<br>The brain's control over the body is translated into action at the site of the <i>hypothalamus</i> , which then exercises control over the <i>pituitary gland</i> and other <i>endocrine glands</i> . According to the article, <i>hormones</i> are the basis for many life processes, and have useful roles as drugs and in the regulation of sexual behavior. | 39 |



## Unit 3

### Perceptual Processes

Three articles discuss how facial expressions and dreaming impact on the human perceptual processes.



## Unit 4

### Learning and Memory

Four selections examine how operant conditioning, positive reinforcement, declarative memory, and procedural memory interact during the learning process.

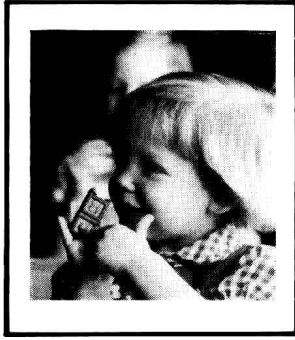
#### Overview

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|---|----------|
| <b>8. Face to Face, It's the Expression That Bears the Message</b> , Jeanne McDermott, <i>Smithsonian</i> , March 1986.   | 44<br>46 |
| Scientist Paul Ekman has demonstrated that <i>facial expressions</i> are the same the world over. Recent studies show that the ability to identify <i>emotions</i> from faces, and to imitate facial expressions, begins early in <i>infancy</i> .  |          |
| <b>9. Images of the Night</b> , Edwin Kiester, Jr., <i>Science</i> 80, May/June 1980.   | 54       |
| Kiester reviews current knowledge about <i>dreaming</i> , including the neurological mechanisms linked to dream and non-dream states of sleep. The newly formulated Hobson-McCarley hypothesis challenges traditional interpretations of the meaning of dream content.  |          |
| <b>10. The Dream Machine</b> , Theodore Melnechuk, <i>Psychology Today</i> , November 1983.   | 59       |
| Dreams have always intrigued humans. Freud considered dreams to have latent or hidden meanings that provided what he called the "royal road to the unconscious." This article presents a new theory by Crick and Mitchison that suggests that <i>dreaming</i> may be the brain's mechanism for getting rid of old and useless <i>memories</i> . |          |

#### Overview

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| <b>11. How to Discover What You Have to Say—A Talk to Students</b> , B.F. Skinner, <i>The Behavior Analyst</i> , Spring 1981.  | 66<br>68 |
| In pragmatic fashion, Skinner details the application of principles of <i>operant conditioning</i> to the verbal behavior of students. The balance of <i>positive reinforcement</i> and aversive procedures leads to three rules for improving verbal skills.  |          |
| <b>12. Eyewitnesses: Essential But Unreliable</b> , Elizabeth F. Loftus, <i>Psychology Today</i> , February 1984.  | 74       |
| Our legal system has long held <i>eyewitness</i> testimony in highest regard. In this article, one of the foremost experts on memory processes uses several real cases of false imprisonment to show how human <i>memory</i> can easily be influenced, resulting in distortions of which the person is not aware.  |          |
| <b>13. Our Dual Memory</b> , Joseph Alper, <i>Science</i> 86, July/August 1986.  | 78       |
| This report reveals that declarative <i>memory</i> (facts) and procedural memory (skills) are apparently learned by different processes and stored differently in the brain. The <i>hippocampus</i> and <i>amygdala</i> are involved in declarative memory, as is the enzyme <i>calpain</i> . Procedural memory is stored in the <i>cerebellum</i> , using some form of <i>protein synthesis</i> . |          |
| <b>14. The Mystery of Mastery</b> , Robert J. Trotter, <i>Psychology Today</i> , July 1986.  | 83       |
| Researchers have found that <i>expertise</i> depends heavily on acquired knowledge, and is usually very specific. The course from <i>novice</i> to <i>expert</i> may be divided into five stages, and almost always involves a series of demanding teachers and supportive family.   |          |





## Unit 5

### Cognitive Processes

Three articles examine how social skills, common sense, intelligence, plus the loss of language affect the human cognitive processes.



## Unit 6

### Motivation and Emotion

Five articles discuss how stress, mental states, motivation, and emotion impact on the mental and physical health of the individual.

#### Overview

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|--|------------|
| <b>15. Intelligence: New Ways to Measure the Wisdom of Man,</b>  | <b>88</b>  |
| Kevin McKean, <i>Current</i> , January 1986.   | <b>90</b>  |
| In contrast to traditional views of <i>intelligence</i> proposed by Binet and Wechsler, new theories and models are being developed by Sternberg, Gardner, and others. According to the author, these new theories are more humanistic, accept <i>cultural variation</i> , and include components measuring <i>social skills</i> and <i>common sense</i> . |            |
| <b>16. Three Heads Are Better Than One,</b> Robert J. Trotter, <i>Psychology Today</i> , August 1986.  | <b>99</b>  |
| The author profiles the work of Robert Sternberg, who has developed a <i>triarchic</i> theory of intelligence. Sternberg asserts that intelligence has <i>componential</i> , <i>experiential</i> , and <i>contextual</i> elements.   |            |
| <b>17. The Loss of Language,</b> Howard Gardner, <i>Human Nature</i> , March 1978.   | <b>105</b> |
| People who can speak and listen rarely appreciate the tremendous problems caused by <i>aphasia</i> , the loss of these abilities. Gardner describes the causes, characteristics, and consequences of several <i>language</i> disorders associated with <i>brain injury</i> .   |            |

#### Overview

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|---|------------|
| <b>18. Abraham Maslow and the New Self,</b> George Leonard, <i>Esquire</i> , December 1983.   | <b>112</b> |
| Rejecting traditional psychoanalysis, Maslow provided a new perspective on human <i>motivation</i> , and gave people a new view of themselves as well.  | <b>114</b> |
| <b>19. Emotions: How They Affect Your Body,</b> Gina Maranto, <i>Current</i> , February 1985.   | <b>121</b> |
| While it has long been believed that <i>stress</i> can weaken defenses and exacerbate <i>disease</i> , recent experiments now support such hypotheses. Small intermittent stressors can serve to <i>innoculate</i> people against the negative effects of stress. The assessment of stress must involve perceptions, outcomes, predictability, and control. |            |
| <b>20. Thinking Well: The Chemical Links Between Emotions and Health,</b> Nicholas R. Hall and Allan L. Goldstein, <i>The Sciences</i> , March/April 1986.  | <b>124</b> |
| Connections between <i>mental states</i> and the body's susceptibility to <i>disease</i> have been posited for centuries. Now research shows two clear links, one anatomical and one hormonal, between mental states and the <i>immune system</i> .   |            |
| <b>21. Dangerous Thoughts,</b> Bernard Dixon, <i>Science</i> 86, April 1986.  | <b>128</b> |
| For years, specialists scoffed at the idea of a link between the mind and body in terms of susceptibility to <i>disease</i> . Today, however, scientists are proving that elation, depression, contentment, or stress can affect the course of an illness, from the common cold to cancer.  |            |
| <b>22. Mind Cures,</b> Steven E. Locke and Douglas Colligan, <i>Omni</i> , March 1986.  | <b>132</b> |
| <i>Psychoneuroimmunology</i> is a new specialty focusing on the relationship between <i>emotions</i> and <i>disease</i> . Reports indicate that the attitude and beliefs of the physician may be as important as those of the patient.  |            |

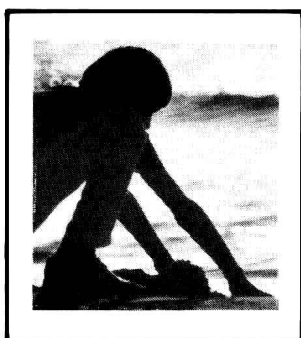




# Unit 7

## Development

Four articles consider the importance of self-esteem, punishment, discipline, and physiological aging during the normal human development process.



# Unit 8

## Personality Processes

Five selections discuss a few of the processes by which personalities are developed. The topics include sex differences, loneliness, stress, cynicism, and change.

### Overview

23. **Your Child's Self-Esteem**, Paul Chance, *Parents*, January 1982. 136  
138

*Self-esteem* and high *intellectual* performance later in life may result from early experiences of being loved and being able to exert control over the environment.

24. **Punishment Versus Discipline**, Bruno Bettelheim, *The Atlantic*, November 1985. 144

While *punishment* may teach avoidance of the behavior which precipitated the punishment, it also evokes anger and aggression.

*Discipline*, on the other hand, involves good models who merit love and *admiration*. Bettelheim argues that responsible, upright, and self-disciplined parents tend to have well-behaved children.

25. **Life Spans**, Mary Batten, *Science Digest*, February 1984. 150

*Aging* follows a predictable course, with several major features in each decade of *adulthood*. Control of these changes involves the *thymus* gland, which also deteriorates. However, there are many steps one can take to prolong health and life itself.

26. **Researchers Study Near-Death**, Jan Ziegler, *New Haven Register*, October 6, 1985. 158

Survivors of *near-death* experiences report similar sensations and experiences. They subsequently lose the fear of death, and become less materialistic and more spiritually oriented. These experiences are not the result of religious programming or lack of oxygen, but may represent a psychological *defense* against *death*.

### Overview

27. **Males and Females and What You May Not Know About Them**, *Changing Times*, September 1981. 162

In body, behavior, and, perhaps, the organization of the brain, males and females differ. To what extent are these *sex differences* due to *genetic* determinants, and to what extent are they the result of environmental factors?

28. **Loneliness**, Jeff Meer, *Psychology Today*, July 1985. 166

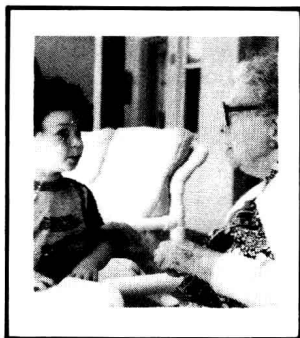
*Loneliness* may result from any loss and may be situational, transient, or chronic. While loneliness has been suspected to be involved in *heart* problems, it may be reduced through any of a number of therapeutic techniques.

29. **How Much Stress Can You Survive?** Suzanne Ouellette Kobasa, *American Health*, September 1984. 171

Fatalistic views of *stress* have drawn direct links between levels of stress (defined as environmental events) and illness. Kobasa reports research which shows that certain *personality* characteristics buffer the damaging effects of stress.

30. **An Untrusting Heart**, Redford B. Williams, Jr., *The Sciences*, September/October 1984. 177

Tracing the course of development of the concept of the *Type A personality*, Williams further analyzes the three major characteristics. His research shows that *cynicism* is at the core of the *personality*.



# Unit 9

## Social Processes

Six selections discuss how the individual's social development is effected by genes, hormonal levels, stereotypes, prejudice, and self-confidence.

- 31. Stressed for Success**, Steven E. Locke and Douglas Coligan, *New Age Journal*, March 1986. **182**

Some people are adversely affected by *stress*, while others thrive. Those who do well feel stimulated by change (challenge), are very involved in what they are doing (commitment), and do not feel powerless in a situation (control). The authors note specific skills and techniques by which we can learn to handle stress more positively.

### Overview

- 32. Are Criminals Made or Born?** Richard J. Herrnstein and James Q. Wilson, *The New York Times Magazine*, August 4, 1985. **186**  
**188**

Since *criminal* behavior has long been associated with young males, it has been theorized to have a *genetic* component. Recent *twin studies* support the notion.

- 33. Aggression: The Violence Within**, Maya Pines, *Science Digest*, July 1985. **192**

Extreme physical *aggression* tends to run in families and appears to be partly learned from generation to generation. Aggressive children often grow up to commit *criminal* acts. Brain researchers have now correlated low levels of *serotonin* and 5-HIAA with high levels of aggression.

- 34. Violence and Aggression**, David Pearl, *Society*, September 1984. **196**

This article documents the impact of *television*, particularly scenes of *violence*, on the development of *aggression* in viewers. Children appear more susceptible to such observational learning than adults, but all are affected.

- 35. Self-Fulfilling Stereotypes**, Mark Snyder, *Psychology Today*, July 1982. **202**

*Stereotypes* are not static beliefs, but are reinforced by the behavior of both *prejudiced* people and their targets. In some cases, social interactions may reinforce stereotypes which are originally unfounded.

- 36. When Bystanders Just Stand By**, R. Lance Shotland, *Psychology Today*, June 1985. **206**

Bystanders who witness a crime being committed will be less likely to intervene if others are present. Nor will a bystander likely intervene if the assailant and victim appear to be married to each other. Social or legislative changes are needed to promote *helping*.

- 37. Influencing Others: Skills Are Identified**, Daniel Goleman, *The New York Times*, February 18, 1986. **211**

*Leadership* requires several competencies: an ability to see clearly the other person's *feelings* without your own getting in the way, an ability to monitor your own feelings moment-to-moment, a social *self-confidence*, and a need for *power*. Studies show the beginnings of these talents even in very young children.

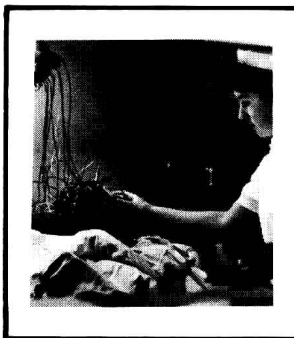


# Unit 10

## Psychological Disorders

Five articles examine several psychological disorders.

Topics include Alzheimer's disease, genetically transmitted problems, and the impact of anxiety on a person's well-being.



# Unit 11

## Psychological Treatments

Six selections discuss a few psychological treatments, including drugs and psychotherapy to alleviate depression, cognitive behavior therapy, biofeedback, and autogenic training.

### Overview

38. **The Clouded Mind**, Michael Shodell, *Science* 84, October 1984. 214

*Alzheimer's* disease has puzzled researchers for decades. New evidence traces the disease to the disappearance of a key *brain* enzyme, and to the resultant reduction in the *neurotransmitter* acetylcholine.

39. **Genes, Personality, and Alcoholism**, Constance Holden, *Psychology Today*, January 1985. 220

By working with evoked potential, researchers have found a specific, genetically-determined deficit in a brain wave related to *attention* and *learning* in both alcoholics and their non-drinking offspring. This research strongly supports the notion that the risk of *alcoholism* is *genetically* transmitted.

40. **New Insights into Alcoholism**, *Time*, April 25, 1985. 224

One American family in three is affected by *alcoholism*. Recent research suggests that alcoholics can best help themselves by admitting their *helplessness*. As a culture, we must stress the responsible use of alcohol.

41. **The Psychopathology of Everyday Slips**, James Reason, *The Sciences*, September/October 1984. 226

We all experience times when our *behavior* does not match our *intentions*. The author reports on research which shows that these slips do not reveal our *unconscious* impulses, but reflect well-practiced *habits* which are not appropriate under the present circumstances.

42. **Anxiety and Panic: Their Cause and Treatment**, Scott M. Fishman and David V. Sheehan, *Psychology Today*, April 1985. 230

*Anxiety*, particularly in the form of *panic attacks*, can easily disrupt life. In some cases, faulty *chemoreceptors* can trigger panic without reason. In other cases, faulty *learning* can be reversed through *behavior therapy*.

### Overview

43. **Depression: Dispelling Despair**, Anne H. Rosenfeld, *Psychology Today*, June 1985. 236

*Depression* may result from *genetic* predisposition, early or repeated traumas, losses, or overwhelming demands. Both *drugs* and *psychotherapy* help to alleviate this broad spectrum of *mood* disorders.

44. **The Good News About Depression**, Laurence Cherry, *New York*, June 2, 1986. 242

Just as there are many types of *depression*, so are there many available treatments. This article describes the range of symptoms, causes, and treatments, from *light* to *antidepressive* drugs to *electroconvulsive therapy*.



<b>45. NIMH Data Points Way to Effective Treatment, Jeffrey Mervis, <i>APA Monitor</i>, July 1986.</b>	<b>251</b>
In a carefully designed and conducted study, clients with <i>depression</i> were randomly assigned to conditions in which they received <i>cognitive behavior therapy</i> , <i>interpersonal therapy</i> , <i>imipramine</i> , or a <i>placebo</i> . While the placebo failed to help severely depressed individuals, success with each of the other methods depended on several characteristics of the client.	
<b>46. RX: Biofeedback, Neal E. Miller, <i>Psychology Today</i>, February 1985.</b>	<b>253</b>
<i>Biofeedback</i> is now used successfully to help people learn responses for everything from the control of <i>blood pressure</i> to the straightening of the spine after <i>scoliosis</i> or <i>kyphosis</i> . Accordingly, biofeedback is acknowledged as an important aspect of <i>behavioral medicine</i> .	
<b>47. Mind over Pain, Perry London and David Engstrom, <i>American Health</i>, September/October 1982.</b>	<b>257</b>
The power of <i>suggestion</i> is an important tool in the hands of a therapist. <i>Imaging</i> , <i>relaxation</i> , and <i>autogenic training</i> have helped many patients to escape the torture of chronic <i>pain</i> .	
<b>48. The Answer Is Prevention, George W. Albee, <i>Psychology Today</i>, February 1985.</b>	<b>261</b>
A recent report by the National Institute of Mental Health (NIMH) indicates that nineteen percent of all Americans need some type of psychological help. Albee insists that <i>prevention</i> should become a major focus of social life, aimed at helping people learn to feel secure and powerful.	
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# PSYCHOLOGY

## 87/88

### Editor

**Michael G. Walraven**  
Jackson Community College

Michael G. Walraven is Dean of Instruction and a professor of psychology at Jackson Community College. He received a B.A. from the University of Maryland in 1966, an M.A. from Western Michigan University in 1968, and a Ph.D. from Michigan State University in 1974. He is affiliated with the American Psychological Association, the Association for Behavior Analysis, and the Biofeedback Society of Michigan.

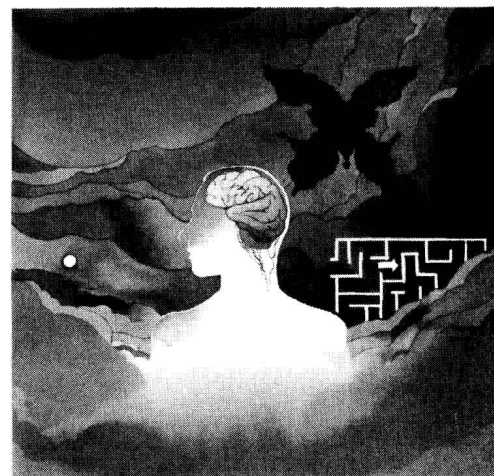
### Editor

**Hiram E. Fitzgerald**  
Michigan State University

Hiram E. Fitzgerald is a professor and associate chairperson in the Department of Psychology at Michigan State University. He received a B.A. in 1962 from Lebanon Valley College, and an M.A. in 1964 and a Ph.D. in 1967 from the University of Denver. In addition to holding memberships in a variety of scientific associations, he is the Executive Director of the International Associations for Infant Mental Health, and editor of the *Infant Mental Health Journal*. He has authored and edited over one hundred and twenty publications.

Cover illustration by Mike Eagle

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# Topic Guide

This topic guide suggests how the selections in this book relate to the topics of traditional concern to psychology students and professionals. It is very useful in locating articles which relate to each other for reading and research. The guide is arranged alphabetically according to topic. Articles may, of course, treat topics that do not appear in the topic guide. In turn, entries in the topic guide do not necessarily constitute a comprehensive listing of all the contents of each selection.

TOPIC AREA	TREATED AS AN ISSUE IN:	TOPIC AREA	TREATED AS AN ISSUE IN:
<b>Adulthood</b>	25. Life Spans	<b>Criminal Behavior</b>	32. Are Criminals Made or Born? 33. Aggression
<b>Aggression</b>	33. Aggression 34. Violence and Aggression	<b>Cultural Variation</b>	15. Intelligence
<b>Aging</b>	25. Life Spans	<b>Cynicism</b>	30. An Untrusting Heart
<b>Alcoholism</b>	39. Genes, Personality, and Alcoholism 40. New Insights into Alcoholism	<b>Death</b>	26. Researchers Study Near-Death
<b>Alzheimer's Disease</b>	38. The Clouded Mind	<b>Deception</b>	2. Research Through Deception
<b>Amygdala</b>	13. Our Dual Memory	<b>Defense</b>	26. Researchers Study Near-Death
<b>Animals</b>	1. Animals in Research	<b>Depression</b>	43. Depression 44. The Good News About Depression 45. NIMH Data Points Way to Effective Treatment
<b>Antidepressive</b>	44. The Good News About Depression	<b>Diagnosis</b>	48. The Answer Is Prevention
<b>Anxiety</b>	21. Dangerous Thoughts 42. Anxiety and Panic	<b>Dichotic Listening</b>	5. Male Brain, Female Brain
<b>Aphasia</b>	17. The Loss of Language	<b>Differentiation</b>	3. Right Brain, Left Brain
<b>Attention</b>	39. Genes, Personality and Alcoholism	<b>Discipline</b>	24. Punishment Versus Discipline
<b>Autogenic Training</b>	47. Mind over Pain	<b>Disease</b>	19. Emotions 20. Thinking Well 21. Dangerous Thoughts 22. Mind Cures
<b>Behavior Therapy</b>	42. Anxiety and Panic	<b>Dreaming</b>	9. Images of the Night 10. The Dream Machine
<b>Behavioral Medicine</b>	46. Rx: Biofeedback	<b>Drugs</b>	43. Depression
<b>Beliefs</b>	4. The Social Brain	<b>Electroconvulsive Therapy</b>	44. The Good News About Depression
<b>Biofeedback</b>	46. Rx: Biofeedback	<b>Emotion</b>	8. Face to Face 21. Dangerous Thoughts 22. Mind Cures
<b>Biological Clock</b>	6. Is It One Clock, or Several?	<b>Endocrine</b>	7. Mind-Body Connection
<b>Blood Pressure</b>	46. Rx: Biofeedback	<b>Endorphins</b>	21. Dangerous Thoughts
<b>Brain</b>	3. Right Brain, Left Brain 4. The Social Brain 5. Male Brain, Female Brain 38. The Clouded Mind	<b>Experiential</b>	16. Three Heads Are Better Than One
<b>Brain Injury</b>	17. The Loss of Language	<b>Experimentation</b>	1. Animals in Research
<b>Bystanders</b>	36. When Bystanders Just Stand By	<b>Expertise</b>	14. The Mystery of Mastery
<b>Calpains</b>	13. Our Dual Memory	<b>Eyewitness</b>	12. Eyewitnesses
<b>Cancer</b>	20. Thinking Well	<b>Facial Expressions</b>	8. Face to Face
<b>Cerebellum</b>	13. Our Dual Memory	<b>Feelings</b>	37. Influencing Others
<b>Cerebral Hemispheres</b>	3. Right Brain, Left Brain	<b>Genetics</b>	27. Males and Females and What You May Not Know About Them 32. Are Criminals Made or Born? 39. Genes, Personality, and Alcoholism 43. Depression
<b>Chemoreceptors</b>	42. Anxiety and Panic	<b>Habits</b>	41. The Psychopathology of Everyday Slips
<b>Circadian Rhythms</b>	6. Is It One Clock, or Several?	<b>Heart</b>	28. Loneliness
<b>Cognitive Behavior Therapy</b>	45. NIMH Data Points Way to Effective Treatment		
<b>Common Cold</b>	21. Dangerous Thoughts		
<b>Common Sense</b>	15. Intelligence		
<b>Componential Memory</b>	16. Three Heads Are Better Than One		
<b>Contextual Memory</b>	16. Three Heads Are Better Than One		



TOPIC AREA	TREATED AS AN ISSUE IN:	TOPIC AREA	TREATED AS AN ISSUE IN:
<b>Helping</b>	36. When Bystanders Just Stand By	<b>Pituitary Gland</b>	7. Mind-Body Connection
<b>Helplessness</b>	40. New Insights into Alcoholism	<b>Placebo</b>	45. NIMH Data Points Way to Effective Treatment
<b>Hemispheres</b>	3. Right Brain, Left Brain	<b>Positive Reinforcement</b>	11. How to Discover What You Have to Say
<b>Hippocampus</b>	13. Our Dual Memory	<b>Power</b>	37. Influencing Others
<b>Hormones</b>	6. Is It One Clock, or Several? 7. Mind-Body Connection	<b>Prejudice</b>	35. Self-Fulfilling Stereotypes
<b>Hypothalamus</b>	7. Mind-Body Connection	<b>Prevention</b>	48. The Answer Is Prevention
<b>Imipramine</b>	45. NIMH Data Points Way to Effective Treatment	<b>Protein Synthesis</b>	13. Our Dual Memory
<b>Immune System</b>	20. Thinking Well	<b>Psychotherapy</b>	43. Depression
<b>Infants</b>	8. Face to Face	<b>Psychoneuro-immunology</b>	22. Mind Cures
<b>Innoculate</b>	19. Emotions	<b>Punishment</b>	24. Punishment Versus Discipline
<b>Intelligence</b>	15. Intelligence 23. Your Child's Self-Esteem	<b>Relaxation</b>	47. Mind over Pain
<b>Intentions</b>	41. The Psychopathology of Everyday Slips	<b>Research</b>	1. Animals in Research
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<b>Leadership</b>	37. Influencing Others	<b>Science</b>	2. Research Through Deception
<b>Learning</b>	39. Genes, Personality, and Alcoholism 42. Anxiety and Panic	<b>Self-Esteem</b>	23. Your Child's Self-Esteem
<b>Life Span Development</b>	25. Life Spans	<b>Self-Confidence</b>	37. Influencing Others
<b>Light</b>	44. The Good News About Depression	<b>Sleeping</b>	6. Is It One Clock, or Several?
<b>Loneliness</b>	28. Loneliness	<b>Social Psychology</b>	2. Research Through Deception
<b>Memory</b>	10. The Dream Machine 12. Eyewitnesses 13. Our Dual Memory	<b>Social Skills</b>	15. Intelligence
<b>Mental States</b>	20. Thinking Well	<b>Split-Brain</b>	4. The Social Brain
<b>Motivation</b>	18. Abraham Maslow and the New Self	<b>Stereotypes</b>	35. Self-Fulfilling Stereotypes
<b>Near-Death</b>	26. Researchers Study Near-Death	<b>Stress</b>	19. Emotions 29. How Much Stress Can You Survive? 31. Stressed for Success
<b>Neuropeptides</b>	21. Dangerous Thoughts	<b>Suggestion</b>	47. Mind over Pain
<b>Neurotransmitters</b>	38. The Clouded Mind	<b>Television</b>	34. Violence and Aggression
<b>Novice</b>	14. The Mystery of Mastery	<b>Thymus</b>	25. Life Spans
<b>Operant Conditioning</b>	11. How to Discover What You Have to Say	<b>Triarchic</b>	16. Three Heads Are Better Than One
<b>Pain</b>	47. Mind over Pain	<b>Twin Study</b>	32. Are Criminals Made or Born?
<b>Panic Attacks</b>	42. Anxiety and Panic	<b>Type A Personality</b>	30. An Untrusting Heart
<b>Personality</b>	29. How Much Stress Can You Survive? 30. An Untrusting Heart	<b>Unconscious</b>	41. The Psychopathology of Everyday Slips
		<b>Violence</b>	34. Violence and Aggression

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# The Science of Psychology

Psychology has been defined as the science of mental activity and behavior. This definition itself reflects the two parent disciplines from which psychology emerged: philosophy and biology. Historically, philosophy is the elder parent, but current students of psychology are often surprised to find the pervasive influence of biology and other natural sciences. Indeed, modern psychology traces its heritage as a science to the opening of the first psychological laboratory in Germany, in 1879. Compared to fields such as mathematics, physics, or biology, psychology is still very much an infant science.

Within modern psychology, we find specialties which are particularly biological, such as neuroscience, sensation and perception, behavior genetics, emotions, and consciousness. We also find some specialties which are particularly philosophical in perspective, such as the study of theories of personality, or of development. Most of the specialties we will encounter will be uniquely psychological in focus: learning, memory, language, individual differences, and psychotherapy. These specialties share an emphasis on behavior, particularly the behavior of humans.

It is important to recognize that psychologists work in a great variety of specialties and settings. What they all share, however, is a commitment to pursue knowledge in accordance with scientific methodology. Psychologists are often seen as skeptics: they do not readily accept as valid the assumptions or interpretations of others. Psychologists are fond of testing their hunches by actually gathering data to see whether their assumptions and hypotheses are valid.

Any person committed to scientific methodology in the pursuit of knowledge is essentially agreeing to abide by a set of rules which are designed to ensure that findings from one research effort can be replicated by other scientists. The principles of science include the requirement that assumptions be made explicit. These operational definitions enhance communication among scientists and, at the same time, keep research on a realistic plane. The experimental method is perhaps the epitome of science. In this procedure, subjects are randomly assigned to conditions, and extraneous variables, which might otherwise influence the data, are controlled. Using this set of procedures, the scientific investigator can be certain that the conclusions drawn from the data are justified, and can be reported with confidence. Because of the need to simplify conditions in the laboratory, and the importance of control over as many variables as possible, psychologists

often conduct research using animals as subjects. In other cases, where human research participants are employed, it is sometimes necessary to control what the participants think or know to be the nature of the research. On occasion this requires deception, and the psychologist must be prepared to both document the need for such deception and assume responsibility for any adverse personal outcomes suffered by the research subjects as a result of having been deceived. As you can readily see, conducting psychological research is a complex business indeed.

This first section includes two articles which focus on two major issues currently under debate. The first article, "Animals in Research: The Case for Experimentation," deals with the recent controversy raised by animal-rights activists, who claim that most psychological experiments with animals are cruel and unnecessary. This article documents the nature of research with animals, and presents the experimenters' side of the story.

In "Research Through Deception" we encounter the intricate problems faced by current researchers in the field of social psychology who are trying to balance the desire for discovery of principles of human conduct against the ethical considerations of informed consent and protection of research participants from unreasonable risks. Taken together, these articles provide a balanced overview of the kinds of issues which scientific psychologists are currently facing.

Many students respond to articles such as these by concluding that psychologists enjoy arguments. We must all recognize that in intellectual conflict are the seeds of new hypotheses and the curiosity to stimulate the research to test them. Learning more about behavior is the goal all psychologists share, and you are invited to share that goal as you plunge into this collection of contemporary readings.

## Looking Ahead: Challenge Questions

How can we define what constitutes cruelty to animals? Is it reasonable to use animals from public pounds in research? What types of regulations are necessary in order to protect animals from inhumane conditions? Under what circumstances should research which involves pain for animals be condoned?

What safeguards are necessary to protect human research subjects? To what extent can subjects waive their rights to such protections? How can we be certain that a potential research subject is sufficiently informed when giving consent to participate?

