

JAMES W. KALAT

INTRODUCTION
TO

PSYCHOLOGY

SECOND EDITION



TO PSYCHOLOGY

JAMES W. KALAT

North Carolina State University



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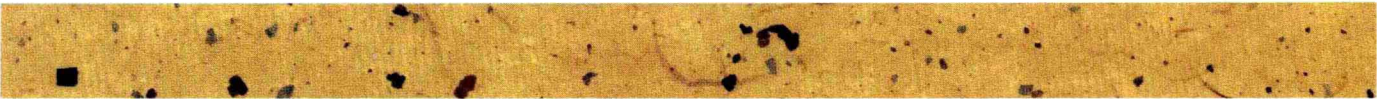
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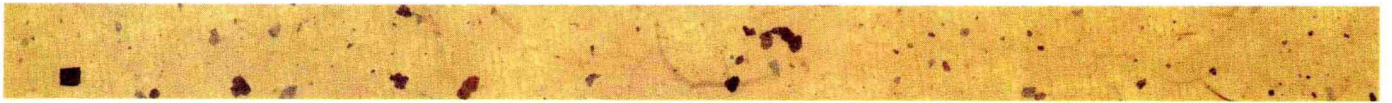
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CIP



To my parents,
Edward and Rachael,
my wife, Ann,
and my children,
David, Sam, and Robin



A NOTE ABOUT THE AUTHOR

James W. Kalat (rhymes with ballot), born in 1946, received an A.B. degree summa cum laude from Duke University in 1968 and a Ph.D. in psychology from the University of Pennsylvania in 1971. He has been a member of the department of psychology at North Carolina State University since 1977 and is a Fellow of the American Association for the Advancement of Science, the American Psychological Society, and the American Psychological Association. Kalat is also the author of *Biological Psychology* (the third edition was published by Wadsworth in 1988).

PREFACE TO THE INSTRUCTOR

A group of young people are deciding what to take with them on a backpacking trip through the mountains. They decide not to take a Swiss army knife: "After all, how often do we use a Swiss army knife?" They also decide against taking a map and compass: "We'll probably never need them." They leave behind a book on how to identify edible mushrooms: "Why should we take that? We hardly ever eat mushrooms." They also decide against taking a snake-bite kit: "Why carry that around? We'll probably never get bitten by a snake." They end up taking only their tent and a portable stereo, which is set to a decibel level that warrants an environmental impact statement.

We would like to say to them, "You're making a terrible mistake! Other people who have made this trip would urge you to take all the things you're leaving behind. It's a difficult trip. You should prepare yourselves for all contingencies."

We educators give this same advice to our students. We want to equip them with a rich supply of information before they set out on their backpacking trip of life. But they protest, "Why should we have to learn calculus, geography, and brain anatomy? We'll never use any of that." And we reply, "You're going to need more information than you realize. Get your equipment in order. Learn everything you can."

I do believe that students should learn calculus, geography, brain anatomy, and a great deal more. Still, more often than we care to admit, students are right. It is as if we were advising them, "On your backpacking trip take this electric waffle iron, this portable generator, this tank of fuel, this jumbo package of waffle mix, and place settings for twelve. Then you'll be able to have waffles any morning you want."

Not that the waffle iron and all the paraphernalia wouldn't be useful. It is simply too bulky. The same is true of education. There is an enormous amount of information that might turn out to be useful some day, but it is just too bulky to tote. The proper goal for educators, especially those who write textbooks, is to take the information we most want students to carry with them and try to make it portable. With this goal in mind, I have tried to include a good supply of potentially useful information in this second edition—more than I included in the first edition. But I have tried to make the information simple and clear and to add interesting examples that will make it easier to remember—easier to carry on the trip.

Moreover, there is an alternative to carrying with you everything you will need: As long as travelers know where to find additional supplies when they need them, they can keep their luggage down to manageable proportions. I have tried to prepare students to find additional supplies in psychology—and how to recognize which are good supplies and which are useless ones. My hope is that the students who use this book will continue to read in psychology for years to come, whether or not they take any further courses in the subject. Toward that end, I have tried to give them the background they will need to understand what they read and to evaluate evidence critically. In Chapter 2, I set forth the methods of investigation that psychologists use and the ways that scientists evaluate theories. With occasional questions titled "Something to Think About" and with an average of one section per chapter titled "What's the Evidence?" I try to motivate students to become actively engaged in evaluating evidence and pursuing questions on their own.

Finally, I have tried to nurture in students a love for the subject. Psychology is fun to talk about and fun to think about. I have tried to let students in on that fun.

SPECIAL FEATURES

Organization

The text consists of 16 chapters. Chapters 2–16 are each divided into two to five self-contained sections, each of which has its own introduction and its own summary. Instructors who wish to do so can easily omit certain sections or assign sections in an order of their own choosing. Instructors may

also assign one or more parts of a chapter for each day of class, instead of assigning an entire chapter per week.

Coverage

For this edition, the content has been extensively revised and reorganized. More than half of the references cited in the first edition have been replaced with new ones, indicating the magnitude of the new research base. Most of the figures and illustrations are new as well. Some highlights of this text, particularly relating to how this edition differs from the first edition, are listed below:

- **Chapter 1, What Is Psychology?** is an intentionally brief introduction to what psychologists do. It introduces three of the most fundamental issues in psychology—free will and determinism, the mind-brain relationship, and the nature-nurture issue. The chapter briefly surveys the major subfields of psychology, concentrating on how each area deals with the question of the origin of individual differences. It includes a few highlights of the history of psychology, although it is not a history chapter per se. I believe in a short first chapter, because in my own course (and I presume in most courses), it is necessary to spend part of the first week explaining the organization of the course and waiting for the dust to settle.
- **Chapter 2, Scientific Methods in Psychology**, is, in my opinion, the most important chapter in the book. It deals not only with the procedures for conducting research but also with how scientists evaluate evidence, how they evaluate theories, and, in general, how they think. Chapter 2 includes the basic concepts of statistics in context. (A brief appendix to the chapter shows how to calculate a few representative statistics.) I do not think an instructor should have to choose between discussing statistics in detail and never mentioning them at all. I think all students should learn in general terms what statistical tests are and why it is important to use them.
- **Chapter 3, Biological Psychology**, contains a new section on genetics, evolution, and animal behavior. Several reviewers of the first edition recommended discussing genetics early in the text because it shows up again in many other contexts.
- **Chapter 4, Altered States**, deals mostly with sleep and hypnosis. It also includes a brief section on the effects of drugs. Note, however, that the main discussion of substance abuse is in Chapter 14.
- **Chapter 5, Sensation and Perception**, has about 50% more information than the first edition had. Note, for example, new coverage of dark adaptation, subliminal perception, attentive and preattentive processes, and movement perception.
- **Chapter 6, Development**, now appears earlier in the text. The first edition had one chapter on early development and one chapter on later development. This edition has one long chapter that deals with development by topic. It includes sections on early development, cognitive development, language development, and social development. The section on social development includes gender roles.
- **Chapter 7, Learning**, includes expanded coverage of social learning. (Some instructors may choose to assign this section when they discuss personality in Chapter 13.) This chapter also includes updated material on contemporary interpretations of classical conditioning and new examples of applications of operant conditioning.
- **Chapter 8, Memory**, has been extensively reorganized. It includes new information on amnesia, on the suggestibility of eyewitness accounts, and on self-monitoring of reading comprehension.
- **Chapter 9, Cognition**, is the most extensively revised chapter in the text. It includes new discussions of mental imagery, cognitive maps, categorization, problem solving, expertise and artificial intelligence, and the reasons behind illogical reasoning. Language, covered in the cognition chapter in the first edition, is now discussed in Chapter 6, Development.
- **Chapter 10, Intelligence**, is a new chapter. It includes an examination of some commonly used IQ tests, a discussion of how psychologists standardize and evaluate tests (including the concepts of reliability and validity), and a discussion of some controversial issues concerning intelligence.
- **Chapter 11, Motivation**, begins with general principles of motivation and then proceeds with three examples of motivated behavior: hunger, sex, and achievement. The section on hunger includes eating disorders.
- **Chapter 12, Emotions, Health Psychology, and Stress**, begins with general theories and principles of emotions, including two examples of emotions—anger and happiness. It continues with an expanded treatment of health psychology, followed by a discussion of coping with stress.
- **Chapter 13, Personality**, starts with the historically influential general theories of personality—those of Freud, Jung, Adler, Rogers, and Maslow. It then proceeds with personality traits, using new examples of personality traits: androgyny, locus of control, and self-monitoring.

■ **Chapter 14, Abnormal Behavior**, has been reorganized in a number of ways. It begins with an overview of abnormal psychology based on DSM-III-R. The next three sections discuss in some detail the three most common types of psychological disorders—anxiety and avoidance disorders, substance abuse, and depression. The final section deals with schizophrenia, a less common but undeniably important disorder.

■ **Chapter 15, Therapy**, collects material into one chapter that the first edition presented in two. It deals first with psychotherapy, then with medical therapies, and finally with some controversial social issues, such as the right to refuse treatment and the insanity defense.

■ **Chapter 16, Social Psychology**, was written mostly by Richard Lippa from California State University, Fullerton, the author of a new social psychology textbook published by Wadsworth. This chapter offers much more extensive coverage than the first edition did, and it focuses on social perception and cognition, attitudes, interpersonal attraction, interpersonal influence, and applications of social psychology (and other fields of psychology) to industrial and organizational psychology.

Pedagogy

I think the best pedagogical device is clear, unambiguous writing. I have tried to give enough information on each topic to enable students to understand the topic even if the instructor does not elaborate on it in class. I have included certain special features to help the students who have difficulty understanding key points and certain other features to stimulate the best students:

1. Each chapter opens with an outline and a brief introduction intended to engage students' interest and to illustrate one of the fundamental issues of the chapter.
2. Each major section of the chapter begins with one or more questions and its own introduction. The questions are the ones that motivate research—the fundamental questions that psychologists ask. They are not always answerable, given our current knowledge. Each major section of the text concludes with a numbered list of summary points, with page numbers to refer students to the relevant parts of the text. The summary is followed by one or more suggestions for further reading.
3. Important terms appear in **boldface** where they are defined in the text. All the boldfaced terms are listed along with their definitions at the end of the chapter.

4. A combined Glossary/Subject Index appears at the end of the book. Anyone who wishes to check on a particular term can find the definition and the page reference at the same time.

5. Every so often—an average of eight or nine times per chapter—I present a “Concept Check.” Concept Checks pose questions that a student who has read the section carefully should be able to answer. But they do not ask for simple repetition of some statements. Rather, the student needs to apply the information in some way or to draw a conclusion. The answers to all the Concept Checks are given at the end of the chapter in which they appear.

6. The “Something to Think About” sections invite students to go beyond the text and to consider questions that, in many cases, have no clear right or wrong answers. Some instructors may wish to use these questions as a basis for class discussion. I have sometimes invited students to write up answers to a set of “Something to Think About” questions as an extra-credit project. For whatever it may be worth, my own answers are available in the Instructor's Manual that accompanies this text.

7. Every chapter except Chapter 1 includes a “What's the Evidence?” section. (Chapter 14 includes two such sections.) “What's the Evidence?” sections describe the procedures and results of one or two experiments. In some cases the topic is an important, classic experiment. Other sections present less famous experiments that illustrate methodological points, sometimes even methodological difficulties. (“Evidence” does not always lead to firm conclusions.)

8. A number of supplements accompany the text. Art Kohn of Saint Andrews Presbyterian College has prepared a very thorough and creative Instructor's Manual. Ruth Maki of North Dakota State University has prepared a Study Guide (purchased separately) that provides study aids and practice test items. Roger Harnish of Rochester Institute of Technology has developed computer software to illustrate a number of important concepts. Additional supplements include Test Items (also available on computer disks) and overhead transparencies.

ACKNOWLEDGMENTS

A potential author needs self-confidence bordering on arrogance just to begin the job of writing a textbook. To complete it, the writer needs the humility to accept criticism of his or her favorite ideas and most carefully written prose. A great many people

have provided helpful suggestions that have made this a far better text than it would have been otherwise.

I could not have started this book, much less completed it, without the constant support of my wife, Ann, my editor, Ken King, and my department head, Paul Thayer. To each of them: Thanks. You're the greatest.

Everett Sims, my writing consultant for both the first and second editions, has laboriously worked through at least two drafts of each chapter and has helped me to phrase each sentence as clearly as possible. Mary Arbogast, senior development editor, provided detailed and highly helpful suggestions on the organization and coverage of topics in each chapter. Maggie Murray, development manager, provided similar comments for Chapter 11. And Pat Tompkins carefully and thoroughly copy-edited the final draft. If you like the way the book is written, each of these people deserves a good share of the credit.

Very special thanks to Richard Lippa of California State University, Fullerton, the primary author of Chapter 16, *Social Psychology*. In the summer of 1989 it became clear that I would not have time to bring the social psychology chapter up to the desired level. Lippa, who had just finished writing a social psychology textbook for Wadsworth, agreed to write a draft of what eventually became the first four sections of Chapter 16. I thank him deeply for making this a much better and more complete chapter than I could have written.

If you quickly thumb through this book you will begin to realize that coming up with all the illustrations and captions is an enormous task, almost like writing a separate text. I contributed a first suggestion for some of the figures, wrote a few captions and edited others, but other people did nearly all the work and should get the credit, including: Audré Newman and Martha Wiseman, art development; Andromeda Oxford Ltd. and Stephen Forsling, photo research; Donna Kalal, art supervision; and Pat Tompkins, captions. To each of these people, my sincere thanks.

I have had the great fortune to work with Sandra Craig, who has supervised the production of this book. A more dedicated worker would be hard to imagine. She and MaryEllen Podgorski, the book's designer, have been at work from early in the morning until late in the evening and on weekends, trying to get this book produced on time and trying to make it as good as possible. I deeply appreciate all they have done.

Still more people have my gratitude: Stacey Pollard, who has supervised the supplements; Robin

Levy, who has directed the marketing campaign; and Art Kohn, Ruth Maki, and Roger Harnish, who have written the best supplements I have ever seen for a psychology text.

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PREFACE TO THE STUDENT

Welcome to introductory psychology! I hope you will enjoy reading this text as much as I enjoyed writing it. When you finish, I hope you will write your comments on the last page of the text, tear the page out, and mail it to the publisher, who will pass it along to me. If you include your return address, I will send a reply.

The first time I taught introductory psychology, several students complained that the book we were using was interesting to read but impossible to study. What they meant was that they had trouble finding and remembering the main points. I have tried to make this book easy to study in many ways. I have tried to make sure my discussion of each point is as clear as possible. I have tried to select material that will be as interesting as possible to you.

In addition, I have included some special features to aid your study. Each chapter begins with an outline and a brief introduction to the topic. Every chapter except Chapter 1 is divided into two or more major sections. Each of those sections begins with one or more questions—the fundamental questions that psychologists are trying to answer, the questions that motivate research. In some cases you will be able to answer the question after you read the section; in other cases you will not, because psychologists themselves are not sure about the answers. At the end of each major section you will find a summary of some important points, with page references. If you find one of the summary points unfamiliar, you should reread the appropriate section.

Throughout the text you will find certain words highlighted in **boldface**. These are important terms whose meaning you should understand. All the boldface terms in the text are listed with their definitions at the end of the chapter. They also appear

in the Glossary/Subject Index at the end of the book. You might want to find the Glossary/Subject Index right now and familiarize yourself with it. Note that when you look up a term you find both its definition and page references to find it in the text. The Glossary/Subject Index also includes terms you might want to look up (such as *age differences*) that do not require definition.

At various points in the text you will find a question under the heading “Concept Check.” These questions enable you to test your understanding. They do not ask you simply to recall what you have read but to use or apply the information in some way. Try to answer each of these questions, rereading the previous material if necessary. Then turn to the last page of the chapter to check your answers. If you cannot answer a Concept Check correctly, you probably have not been reading carefully enough, and you might want to reread the section in which the Concept Check occurs.

You will also find an occasional section marked “Something to Think About.” These sections pose questions that require you to go beyond what is discussed in the text. In some cases there is no single right answer; there may be a number of reasonable ways to approach the question. I hope you will think about these questions, perhaps talk about them with fellow students, and maybe ask your instructor what he or she thinks.

I would like to deal with a few of the questions that students sometimes raise about their textbooks:

Do you have any useful suggestions on study habits? Whenever students ask me why they did so badly on the last test, I ask, “When did you read the assignment?” They often answer, “Well, I didn’t exactly read *all* of the assignment,” or “I read it the night before the test.” To do your best, read each assignment *before the lecture*. Within 24 hours after the lecture, read over your lecture notes. Then, before you take the test, reread both the textbook assignment and your lecture notes. If you do not have time to reread everything, at least skim the text and reread the sections on which you need to refresh your memory.

As you read this book, try to think actively about what you are reading. One way to improve your studying is to read by the SPAR method: Survey, Process meaningfully, Ask questions, Review. The steps are as follows:

Survey: When you start a chapter, first look over the chapter outline to get a preview of the chapter's contents. When you start a major section of a chapter, turn to the end of the section and read the summary. When you begin to read the chapter you know what to expect and you can focus on the main points.

Process meaningfully: Read the chapter carefully. Stop to think from time to time. Tell your roommate some of the interesting things you learn. Think about how you might apply a certain concept in a real-life situation. Pause when you come to the Concept Checks and try to answer them.

Ask questions: When you finish the chapter, try to anticipate some of the questions you might be asked later. You can take questions from the Study Guide or you can compose your own questions. Write out your questions and think about them, but do not write your answers yet.

Review: Pause for a while—at least several hours, or, better yet, a day or two. If you first read a chapter before class, come back to the chapter the evening after class. Now write out the answers to the questions you wrote earlier. Check your answers against the text or against the answers given in the Study Guide. Reinforcing your memory a day or two after first reading the chapter will help you retain the material longer and with deeper understanding.

Is it worthwhile to buy and use the Study Guide? The Study Guide is designed to help students who have trouble studying, remembering the material, or answering multiple-choice questions. It is most likely to be helpful to freshmen, to students who have been away from college for a few years, and to students who have had trouble with similar courses in the past. It provides examples of multiple-choice questions, giving not only the correct answers but also explanations of why they are correct.

In the Study Guide for this text, written by Ruth Maki of North Dakota State University, you can work through each chapter in one or two hours. If you are willing to devote that much time to it, I believe the Study Guide will help you.

Does it help to underline or highlight key sentences while reading? Maybe, but don't overdo it. I have seen books in which a student underlined or highlighted more than half the sentences. What good that does, I have no idea.

What do those parentheses mean, as in "(Maki & Berry, 1984)"? Am I supposed to remember the names and dates? Psychologists generally cite references not by footnotes but in parentheses. "(Maki & Berry,

1984)" refers to a publication written by Maki and Berry and published in 1984. All the references cited are listed in alphabetical order according to the author's name in the References section at the back of the book.

No one expects you to memorize the names and dates in parentheses. They are there to enable you to look up the source of a statement in case you want more information. Some names *are* worth remembering, however. For instance, you will read about the research and theories of some famous psychologists, such as B. F. Skinner, Jean Piaget, and Sigmund Freud. You will certainly be expected to remember those names and a few others. But names that are important to remember are emphasized, not buried in parentheses.

Can you give me any help on how to read and understand graphs? The graphs in this book are easy to understand. Just take a minute or so to study them carefully. You will find four kinds: pie graphs, bar graphs, line graphs, and scatter plots. Let's look at each kind.

Pie graphs show how a whole is divided into parts. Figure 1 shows that more than one third of all psychologists take a starting job with a college or some other educational institution. Another one fifth to one fourth of psychologists work in independent practice. The total circle represents 100% of all psychologists.

Bar graphs show the frequency of events that fall into one category or another. Figure 2 shows that about one third of all adults in the United States suffer from some type of psychological disorder. The length of the bar represents the frequency of each disorder. A fairly large number of people have a problem of alcohol or drug abuse, phobia, or affective disorders; a relatively small number have schizophrenia or panic disorder.

Line graphs show how one variable is related to another variable. In Figure 3 you see that newborn infants spend about 16 hours a day asleep. As they grow older, the amount of time they spend in two types of sleep gradually decreases.

Scatter plots are similar to line graphs, with this difference: A line graph shows averages, whereas a scatter plot shows individual data points. By looking at a scatter plot, we can see how much variation occurs among individuals.

To prepare a scatter plot, we make two observations about each individual. In Figure 4 each student is represented by one point. If you take that point and scan down to the x-axis, you find that student's SAT score. If you then scan across to the y-axis, you find that student's grade average for the

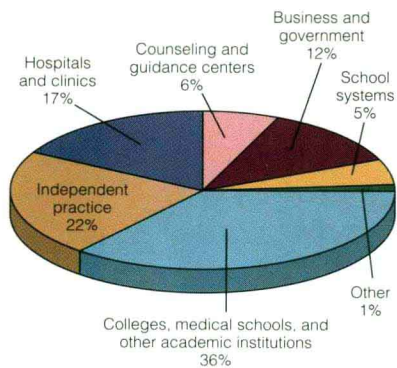


FIGURE 1

Pie graph.

freshman year. A scatter plot shows the relationship between two variables, but it also shows whether the variables are closely related or only loosely related.

We may have to take multiple-choice tests on this material. How can I do better on those tests?

1. Read all of the choices carefully. Do not choose an answer just because it looks correct; first make sure that the other answers are wrong. Sometimes you will find a second answer that also sounds correct; decide which of the two is better.
2. If you don't know the correct answer, make an educated guess. Start by eliminating any answer that you know cannot be right. Generally, an answer that includes words such as *always* and *never* is wrong. (Psychologists are seldom sure that something is always right or always wrong.) Also eliminate any answer that includes terms that are unfamiliar to you. (Correct choices use only terms that should be familiar to a reasonably conscientious student; incorrect choices may include obscure terms or even outright nonsense.)
3. After you finish a test, go back and check your answers and rethink them. Many students insist that it is a mistake to change an answer because they think their first impulse is usually right. J. J. Johnston (1975) tested this belief by looking through the answer sheets of a number of classes that had taken a multiple-choice test. He found that of all the students who changed one or more answers, 71 students improved their scores by doing so and only 31 lowered their scores. Similar results have been reported in a number of other studies. This does not mean that you should make changes just for the sake of making changes. But if you recon-

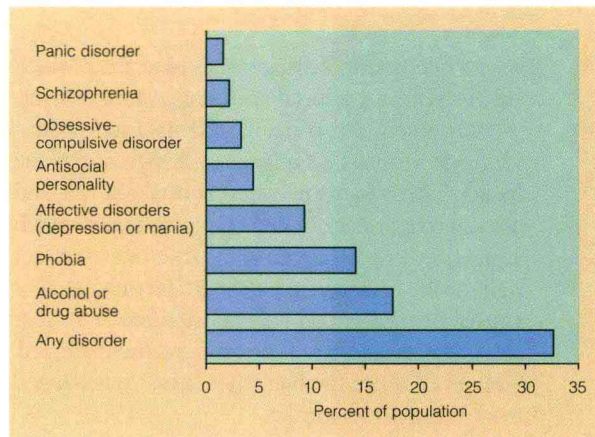


FIGURE 2

Bar graph.

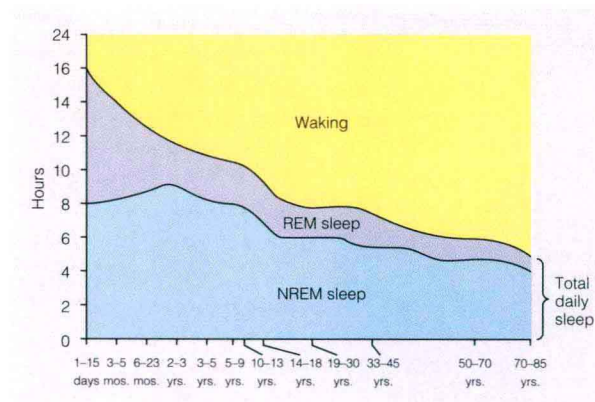


FIGURE 3

Line graph.

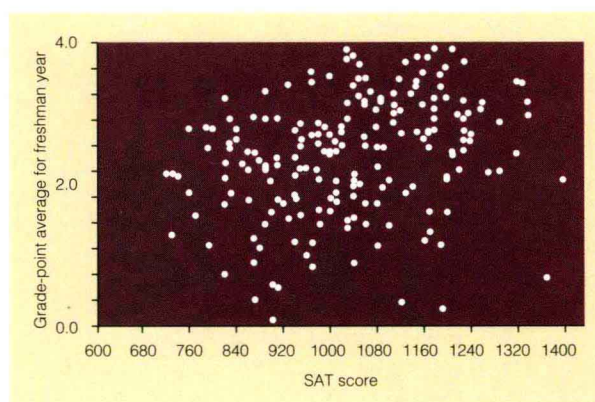


FIGURE 4

Scatter plot.

sider a question and change your mind about which answer is best, go ahead and change your answer.

Why, then, do so many students (and professors) believe that it is a mistake to change an answer? Imagine what happens when you take a test and get your paper back. When you look it over, which items do you pay attention to—the ones you got right or the ones you got wrong? The ones you got wrong, of course. You may notice three items that you originally answered correctly and then changed. You never notice the five other items you changed from incorrect to correct.

All right, so much for advice. Now let's talk about psychology.

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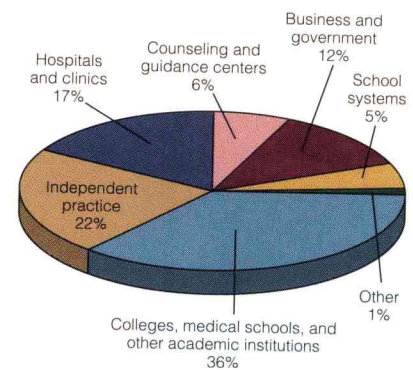
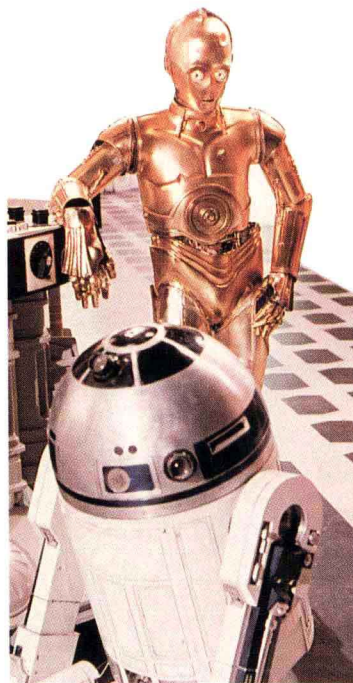
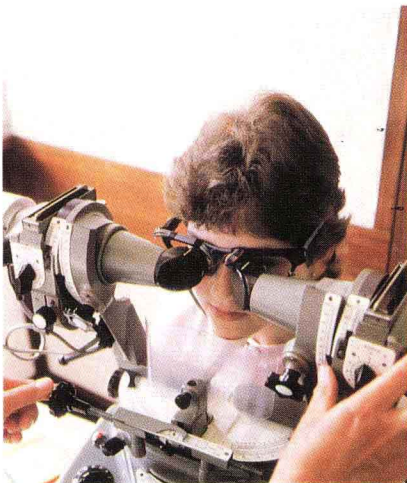
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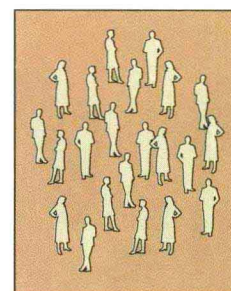
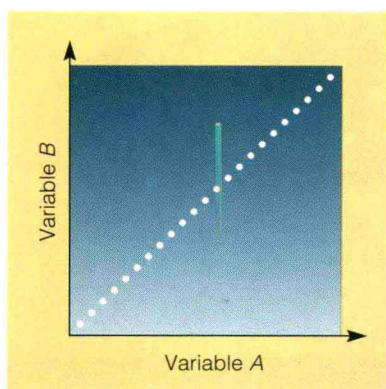
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