

Cognition

By describing experiments that control, manipulate, and measure mental processes, this book shows how we can answer key questions about the mind, such as: “Can we focus attention on more than one thing?” and “Is language unique to humans?”

Written in a down-to-earth narrative prose that avoids jargon, addresses the reader directly, and draws on the authors’ unique style (“suppose Willingham split his pants at a junior high dance . . .”), this text takes complex experiments in cognitive psychology and describes them for undergraduate students. Willingham has a record of excellence in translating cognitive psychology research for K-12 teachers with his bestselling *Why Don’t Students Like School?* and other popular books. *Cognition* applies a clear and approachable prose style toward building foundational knowledge in cognitive psychology.

Daniel T. Willingham is Professor of Psychology at the University of Virginia. His research focuses on the application of cognitive principles to K-16 education and his work has appeared in sixteen languages.

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Cognition

The Thinking Animal

Fourth Edition

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Preface

Many instructors believe that cognitive psychology does not have the intrinsic interest of some other areas in the field. Textbook authors try to overcome this problem by including “real world” examples and many demonstrations, usually found in little boxes that appear every few pages. We believe that the basic research into how we think is interesting in itself, and we’ve done three things in this book to communicate this interest to the reader:

- We begin with the basic questions that motivate cognitive psychologists, phrased in a plain and straightforward way. For example: In what way is attention a limited resource? Is language special? Each chapter in this book is organized around two or three such questions that are easy to appreciate, and the importance of which are explained in detail.
- We use a narrative structure. There are links within and across chapter sections, so that it is clear why you are reading something. The models of memory presented in Chapter 8 explain memory performance on many laboratory tests, but don’t allow for complicated relationships among ideas. The concept of a structured mental representation, which does help to relate different ideas, is introduced in Chapter 9. Then, research on structured mental representations is expanded upon in Chapters 10 and 11 with linguistic representations, then elaborated again in Chapter 12 with visual images.
- We write in an approachable style that is not overly academic. When we discuss whether brain localization informs cognitive function, we ask “where is the damage?” and “where is the activation?” We address whether neuroscience alone will describe how we think with “do we really need cognitive psychology?”

Pedagogical Features

Readability is fine, but the goal of a textbook is, after all, that students learn the material. Different students like and use different pedagogical features, so we’ve included a few different ones to help them learn.

- Brief previews of each section pose the broad questions and provide the broad answers contained in the section.
- Key terms are identified by bold-face type, and are defined immediately thereafter. They are also collected in a glossary.
- Each section closes with two types of review questions: the first to get the reader to pause for a moment and make sure they understood the major points by summarizing what they have just read.
- The second type of review questions require the student to apply what he or she has just learned to new situations, or to go beyond the material in some way.

x Preface

We believe this text will make students enthusiastic about this field, and will make them curious to learn more than they can find within the covers of this book. In short, we hope that this book will serve as a starting point from which students will want to learn still more about the field.

Changes to This Edition

The most important change to the current edition has been the addition of a coauthor. Cedar Riener is an Associate Professor of Psychology at Randolph-Macon College, bringing experience in sensation and perception and also in teaching cognitive psychology in a small liberal arts college setting. Riener and Willingham had collaborated happily and fruitfully on previous writing projects, and this book continued in that tradition.

The field has undergone much change since the last edition, and nearly every page has undergone some updating.

In addition, a few large structural changes have been implemented, for clarity, to better reflect the current state of the field, and to move more organically from low-level to high-level cognition. For example, the third edition had a single chapter covering the structure of long-term memory and its contents; each topic now has its own chapter. We believe these changes allow us to convey more coherence and narrative flow.