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978-0-521-68702-7 - Cyberpsychology: An Introduction to Human-Computer Interaction
Kent L. Norman
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Cyberpsychology: An Introduction to Human–Computer Interaction

Cyberpsychology is about humans and computers and the psychology of how they interact. Computers permeate nearly every human activity in the modern world and affect human behavior from the most basic sensory-motor interactions to the most complex cognitive and social processes. This book begins with a brief history of psychology and computers and a comparison of the human nervous system and the circuitry of a computer. A number of theories and models of human–computer interaction are presented, as well as research methods and techniques for usability testing. Following the typical contents of an introduction to psychology, the book then discusses sensation and perception, learning and memory, thinking and problem solving, language processing, individual differences, motivation and emotion, social relations, and abnormal behavior as they impact the human–computer interface. Finally, specific issues of artificial intelligence, assistive technologies, video games, and electronic education are presented. Cyberpsychology is the new psychology.

Kent L. Norman received his doctorate from the University of Iowa in experimental psychology and is an associate professor in the Department of Psychology at the University of Maryland. He is the director of the Laboratory for Automation Psychology and Decision Processes and is a founding member of the Human–Computer Interaction Laboratory in the University of Maryland Institute for Advanced Computer Studies. His research is on judgment and decision making and problem solving, particularly as they pertain to human–computer interaction and cognitive issues in interface design. Dr. Norman is the author of *The Psychology of Menu Selection: Designing Cognitive Control at the Human/Computer Interface* (1991), and he is the developer of HyperCourseware, a Web-based prototype for electronic educational environments reported on in his online text, *Teaching in the Switched On Classroom: An Introduction to Electronic Education and HyperCourseware* (2007; http://lap.umd.edu/soc). He is the coauthor of *QUIS: The Questionnaire for User Interaction Satisfaction*, which is licensed by the university to corporate and government usability labs, and he is currently doing research on "computer rage." Dr. Norman is the author or coauthor of more than eighty journal articles and book chapters.

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This book is dedicated to past, present, and future generations who have and will have to suffer through the psychological ravages of the computer revolution. To the survivors! To us!

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More information

Contents

Preface *page* ix

Part I: Fundamentals

One 3
Introduction: Importance, Implications, and Historical Perspectives

Two 35
Fundamentals: Biological and Technological Bases

Three 61
Theoretical Approaches: Models and Metaphors

Four 91
Research: Modes and Methods

Part II: Systems

Five 117
Sensory-Motor Interfaces: Input and Output

Six 150
Learning and Memory, Transfer and Interference

Seven 174
Cognitive Psychology: Thinking and Problem Solving

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Cambridge University Press
978-0-521-68702-7 - Cyberpsychology: An Introduction to Human-Computer Interaction
Kent L. Norman
Frontmatter
More information

Eight 200
Language and Programming

Part III: Relationships

Nine 223
Individual Differences: People, Performance, and Personality

Ten 252
Motivation and Emotion at the Human–Computer Interface

Eleven 275
Interpersonal Relations

Twelve 306
Abnormal Behavior and Cybertherapies

Part IV: Applications

Thirteen 339
Automation and Artificial Intelligence

Fourteen 360
Assistive and Augmentive Technologies

Fifteen 382
Media: Games, Entertainment, and Education

Sixteen 409
The Future: The Ultimate Human–Computer Interface

Index 427

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Preface

This book has been more than 20 years in the making. In 1984, I taught my first college course titled "Psychology in the Age of Computers." Over the years, I have collected material and references, added to my notes for the course, conducted empirical research, and thought a lot about the topics and issues. Since the introduction of the first personal computer in the 1970s, computer technology has developed into such a rich and pervasive presence that it affects nearly everyone in the world. "Cyberpsychology" has become the portmanteau that now encompasses where we are in psychology and technology. Consequently, the time has come for a general textbook on cyberpsychology.

This book is meant to be an "introduction." First, it encourages the reader to come to the topic with a fresh and ready mind. There are no prerequisites. Second, as an introduction, it emphasizes breadth rather than depth. It attempts to cover a variety of topics in the psychology of human–computer interaction rather than exhaustively delve into one topic. Finally, as an introductory textbook, it attempts to be engaging, to provide a good first impression of cyberpsychology, and to prompt the reader to follow up on the invitation to spend more time with the topics and ideas presented therein.

The title includes the word "psychology." This is done to emphasize the fact that this book is more about people than about machines. The organization and the perspective of the book come from psychology, not from computer science. Although the book is expected to be used in disciplines other than psychology, the point is that it is centered around human issues first and issues in technology second.

Finally, "human–computer interaction" is a rich term that has developed meaning over several decades. It is important to note that in using this term, although the terms "human" and "computer" appear side by side, the human takes precedence over the computer rather than being on the same plane. This perspective is emphasized throughout the book.

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Readers will have to relax their psychological need for closure in this book. Technology is changing too fast and, with it, our theories and research change. Writing this book has been like painting a vertical stripe on a moving train. Each topic is a point of departure or a list of search terms for readers who want to know more, and the Web has become the vehicle for this search.

There are many people to thank and acknowledge for this book. First and foremost, I have to acknowledge the scholars, leaders, and entrepreneurs in technology who created the computer revolution and led to my involvement in the Human–Computer Interaction Laboratory at the University of Maryland, especially my good friends Ben Shneiderman in computer science and Nancy Anderson in psychology.

I want to thank the students, both undergraduate and graduate, who participated in my classes on cyberpsychology over the years for their suggestions and contributions, especially my current graduate students Susan Campbell, Walky Rivadeneira, and Ben Smith.

I express great appreciation to Karen Norman, my wife, for the drawings of the "dead psychologists" and a few computer scientists; to Katryn Norman, my eldest daughter, for her help with the figures; and to my other children, Kirk, Karitsa, and Kaleb, for their helpful comments, observations, and encouragement. Above all, honor and glory and praise to our God, the creator of all.

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