

WARNINGS AND RISK COMMUNICATION



Edited by
Michael S. Wogalter
David M. DeJoy
Kenneth R. Laughery

WARNINGS AND RISK COMMUNICATION

In the last two decades, there has been heightened interest from industry, government and consumers regarding the effectiveness of warnings, and this interest has corresponded with an upsurge of research on the topic. This book provides a comprehensive review and analysis of major issues in the theory, research, and applications of warnings and risk communication. Its contributors include leading US and international experts.

Warnings and Risk Communication begins with a section containing an overview chapter introducing the area and telling some of its history. This is followed by a chapter describing a communication-human information processing (C-HIP) model that serves as a theoretical framework and an organizational basis for the research literature presented in subsequent chapters. The second section describes methods for investigating warning effectiveness issues. Techniques on how to conduct research measuring the effects of warning at intermediate processing stages (such as attention and comprehension) and on behavioral intentions and compliance are detailed. The third section consists of seven chapters based on the stages of the C-HIP model, with each chapter reviewing the associated warning research and theory. The fourth section provides practical guidance for developing effective warnings. Standards, regulations, and guidelines are discussed, and procedures for developing and testing warnings are presented. In the fifth section, the book concludes with two chapters addressing forensics issues. Legal concerns in warning design and failure to warn are examined, and the role of the warnings expert witness in litigation is described.

Warnings and Risk Communication is an authoritative sourcebook on the theory, research and applications in the field. It provides a resource for professionals and academics in diverse domains that range from human factors/ergonomics, engineering psychology, marketing, and design, to industry, government, and litigation. Improving occupational and consumer safety is the book's foremost goal.

Edited by Michael S. Wogalter, North Carolina State University; David M. DeJoy, University of Georgia; Kenneth R. Laughery, Rice University.

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Editor Biographies



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Michael S. Wogalter is an associate professor in the Department of Psychology at North Carolina State University (Raleigh). He received a B.A. from the University of Virginia, an M.A. from the University of South Florida, and a Ph.D. from Rice University. He has held faculty appointments at the University of Richmond and Rensselaer Polytechnic Institute. Most of his research focuses on the factors that influence the effectiveness of warnings and people's hazard and risk perceptions. He also has interests in human-technology interaction and information displays. He is a Fellow of the Human Factors and Ergonomics Society and has been HFES Secretary-Treasurer and a member of the Executive Council. He has also held the offices of Chair and Technical Program Chair of the HFES Safety Technical and Forensic Professional Groups, and the General Sessions Chair and Special Sessions Chair of the Technical Program Committee. He is a member of a number of other professional associations including the American Psychological Association, American Psychological Society, Psychonomic Society, and Sigma Xi. He is on the editorial boards of *Human Factors*, *Ergonomics*, *Occupational Ergonomics*, *Psychology & Marketing*, and *Theoretical Issues in Ergonomic Science*.

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Kenneth R. Laughery is the Herbert S. Autrey Professor of Psychology at Rice University. He has a B.S. in metallurgical engineering and an M.S. and Ph.D. in psychology, all

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Foreword



It seems that warning and risk communications are everywhere. Just within my nice, safe (or so I thought) office, my little bottle of correction fluid warns me that I could kill myself if I deliberately concentrate and inhale the stuff. A desk lamp warns me that I could start another Chicago fire if I use a bulb bigger than 75 watts. My label maker warns me not to pull on the labels to get them out or I can kiss the little puppy goodbye. The cell phone charger dares me to remove the base plate knowing that there are 'hazardous voltages present.' A quick perusal of my weekly news magazines tells me that there are new doubts (risks?) about an old heart monitoring procedure; a certain mutual fund went up 28% last year, but 'past performance does not guarantee future results' (is there a risk?); and a certain drug reduces deaths from heart disease by 42%, but there is a 1% chance (risk?) it will cause liver dysfunction.

Questions regarding how best to communicate warnings and risk information, whether such communications are likely to be effective, and what factors influence the communication process are of importance to a wide range of players in society today. Often these players have different perspectives, values, and vested interests. Manufacturers, consumers, consumer advocacy groups, government organizations, plaintiff attorneys, defense attorneys, and behavior scientists are just some players involved. Also, decisions regarding how, when, and where to warn about a hazard may be based on little or no scientific information. Frequently, politics, expediency, self-interest, and litigation influence such decisions. Probably we shall never eliminate the influence of such factors, but the challenge is to incorporate the best scientific information into the process to ensure the most effective results.

Although there have been books and standards addressing how to design warnings, there has really not been a comprehensive, well organized book summarizing the empirical scientific literature on warnings and risk communication. The area of warnings and risk communication is not a narrow field, but rather encompasses the entire field of experimental psychology, including perception, information processing, decision making, attention, memory, motivation, and personality. Synthesizing this vast field to extract the salient theories and principles as they apply to warnings and risk perception is quite a task, perhaps rather a lot to expect in a single book. This book, however, attempts that feat. The strengths of the book include: a distinguished group of authors, an organizing theoretical model, a review and critique of research methodologies, and a preference for behavioral studies over subjective evaluations as the basis for conclusions.

This book is not a design guide or a 'how to' book. This is a book for those who want to know the whys, whats, and wherefores of warning and risk communication. It is an excellent source of ideas for researchers, or for a graduate student thesis or dissertation. It is a comprehensive source of information for attorneys and expert witnesses who need to explain the effectiveness or lack of effectiveness of a warning, or who wish to analyze the factors in a situation that affect whether a warning will be noticed, received, understood, and heeded. However, in fairness to all, the reader should note:

WARNING
**This Book May Be
 Hazardous to Your
 Ignorance**

MARK S. SANDERS
Northridge, California

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