communication. (pp. 233–241): they provide methodologies for determining whether the texts produced (i) were well-received by the target population (given criteria derived from theories of successful communication and persuasion), and (ii) whether the texts were effective in meeting their health and behavioral objectives (given the health problem and its determinants, and the goals of the intervention in changing these determinants). With regard to the latter, references are provided to a number of instruments to measure changes in the major psychosocial variables that underlie behavior change.

Given this focus on the design and evaluation of health messages/texts, it is remarkable, however, how the authors simply pass over the large amount of theory development and theory-driven empirical research that underlies the design and evaluation of the heuristics they propose, and how little of the advances that have been made in the field of Document Design since 1994 are incorporated into this book (cf. the fact that Slater 1994 is cited as authority for their checklist). For example, current research on text-mediated methods and strategies for effective persuasion, and some advances in what the authors cite as issues for further research (cf. Chapter 14), such as gender, culture, literacy level, and learning style, have all been subjects of recent research that directly relate to the design of tailoring messages, but to which no reference is made.

The same applies to the use of interactive Internet sites and tailored e-mail as delivery modes for tailored health messages. The authors discuss these as future prospects, while these technologies are already in use. The existence of these alternative delivery modes inevitably also raises the question of the costs of alternatives — a question that the authors postpone to the last page and, unfortunately, leave unanswered!

The development of the assessment modules are just as crucial to the design of tailored messages as are the design of the feedback modules. As the authors state (p. 89),

assessment modules are essentially assessment questionnaires which have to capture variation among all individuals on the key behavioral determinants. To do so successfully, they have to meet a host of other requirements. For someone with little experience of questionnaire design, however, Chapter 6 will be of little help. Such a reader will be well advised to refer to the authors' references to other sources on questionnaire design in general, but also to the scattered references throughout various other chapters of this book on assessing individual variations with regard to specific determinants of specific health behaviors (e.g., beliefs about severity, susceptibility, response efficacy, self-efficacy).

Advances in computer technologies and theory-driven research in the field of document design hold promise for great improvement in the delivery of tailored health messages in various kinds of delivery modes. Despite my critical comments, this publication is a very important one in which a number of the complexities of this new and exciting field of health communication are introduced.

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In this second edition of *Persuasion: theory & research*, Daniel O'Keefe gives a state-of-the-art overview of theories and research in the field of persuasion. The author has succeeded in providing an introductory text for university students that discusses classic and more current theoretical perspectives that have been or will be prominent for the study of persuasive effects (Chapters 2–6). In the second part of the book (Chapters 7–10), various factors that influence these effects

are reviewed. This part will be especially appreciated by more experienced readers, who will recognize that it is, as O'Keefe says, "difficult to keep up with current research across a number of topics" (p. xiv). Therefore, the author is to be congratulated for his integration of current research into existing studies. This second edition has not only been thoroughly updated (and includes, for example, dissonance theory, the Elaboration Likelihood Model, and resistance to persuasion); there are also other modifications. Whereas certain parts from the first edition have been omitted, other parts, such as the theory of planned behavior and a discussion on the functional approach on attitudes, are included and nicely integrated. The book is, like the first edition, written in an admirably clear and sober style. O'Keefe's personal suggestions and ideas are developed in a well-structured and well-argued way.

Before the author starts his overview of theories in the field of persuasion, he first introduces, naturally, the concept of persuasion. This chapter (1) is typical for the rest of the book, as it is characterized by O'Keefe's critical and balanced treatment. He prefers not to give a hard-edged definition of persuasion, but approaches persuasion on the basis of six paradigms. In this way, O'Keefe comes to the following characterization of persuasion: a "successful intentional effort at influencing another's mental state through communication in a circumstance in which the persuadee has some measure of freedom" (p. 5). That mental state is generally considered to be an attitude. As the attitude is central to the concept of persuasion, the author discusses the most common attitude measurement techniques, and the relation between attitudes and behavior.

Chapters 2 and 3 deal with theoretical perspectives on the concept of attitudes. In Chapter 2, the author discusses the functional approach to attitudes. This approach focuses on the functions that attitudes can serve. After a description of this theory and its most recent developments, O'Keefe gives his personal commentary. It is useful to distinguish between the functions of having an attitude, of expressing an attitude, and of the attitude object itself. These are often confused, for instance, an attitude function with an attitude object function. Researchers may ask what respondents want from the attitude function, but in reality they are asking what people want from an object. People may have different wants, but no different attitude functions; they have one single function: object appraisal. With this in mind, the author comes back to the strategy of matching persuasive appeals to the functional basis of an attitude (symbolic or instrumental). In fact, there seem to be two elementary ideas in existing research concerning attitude functions and persuasive appeals. The first idea is that what is wanted varies: different people can have different wants (values), different types of objects are wanted for various reasons (air conditioners or greeting cards), and the situation can influence the salience of different wants. The second idea is that messages will be more persuasive when they engage what people want than when they do not. These ideas open the door to future research. In particular, research could focus on typologies of wants (values) in order to analyze the ways in which wants can vary.

In contrast to this functional approach to attitudes, the belief-based approach to attitudes that is discussed in Chapter 3 is content-free. Central in this belief-based approach to the analysis of attitude is the concept that an attitude towards an object consists of the likelihood that an object has a certain attribute (belief strength), and of the evaluation of those beliefs (belief evaluation). An important question is to know whether there are also noncognitive (non-belief-based) elements that contribute to the attitude. Studies have in fact confirmed that noncognitive elements may be important. First, under some circumstances, the attitude toward the advertisement of an object can influence the receiver's attitude toward the object. Second, recent studies have also pointed out that affective, feeling-related elements can contribute to the prediction of an attitude. It is therefore impor-

tant to understand that attitudes can be assessed by the evaluation of cognitive and affective beliefs.

In Chapter 4, O'Keefe discusses the cognitive dissonance theory that has produced some interesting findings bearing on the persuasion process, although it is not a systematic theory of persuasion. Cognitive dissonance has been studied in decision-making or in the information selection process (people prefer to be exposed to information that is consonant with their current beliefs), but also in research applications that are closer to a persuasive context. The first one is induced compliance, the direction in which a lot of the dissonance research has been done. In this circumstance, a person is induced to act in a way that is discrepant from his own beliefs and attitudes. A customer, for instance, is offered a price reduction to purchase a product that he normally wouldn't buy. However, the greater the reduction, the less chance for a favorable attitude change toward the product. Cognitive dissonance theories make possible greater insight into the complexities of price setting in marketing and attitude formation. The other application is hypocrisy induction, which calls attention to the inconsistency of a person's attitude and actions. The dissonance that is created can be reduced through behavioral change. An example is a student who has favorable attitudes toward condom use, but never uses a condom. Hypocrisy induction can be a successful strategy, but can also turn against the persuader. Future research is therefore needed to explore the underlying induction mechanisms.

Two models that provide an account of the determinants of behavioral intention are the theory of reasoned action (TRA) and the theory of planned behavior (TPB). These models are nicely presented and discussed in Chapter 5. In the TRA, behavioral intention is predicted by the attitude and the subjective norm. The TRA is a successful model to which various additional components have been added, especially perceived behavioral control. In the TPB, perceived behavioral control (PBC) is added to the TRA as a third predictor. Although this addition improves predictability of behavioral intention, O'Keefe has two comments on the TPB. The first is about the curious status of the third predictor, PBC. In fact, a high PBC alone does not lead to a high intention. Moreover, PBC can even be negatively correlated to intention. This makes the author suggest that PBC may be more a moderator: a necessary but not sufficient condition for intention. The second comment is about possible additions to the TPB. Anticipated effect (emotions related to the behavior, like regret or guilt), self-identity, and moral norms have had some research attention. Although each new addition may offer a potential strategy for a persuader, the author believes that an addition has to be relevant across different types of behavior in order to contribute to a generally useful model.

Chapter 6 treats the Elaboration Likelihood Model, which distinguishes two routes to persuasion, a central and a peripheral route. In brief, under conditions of high elaboration (the central route), argument strength influences the persuasive outcome; under conditions of low elaboration (the peripheral route), the persuasive outcome is affected by heuristics as source credibility or liking. O'Keefe's comments center on two topics: argument strength and the unimodel of persuasion. As to argument strength, it is not yet known what really makes strong arguments persuasive, because argument strength is empirically defined by reference to respondents' reactions in pretests. O'Keefe also discusses the unimodel of persuasion that has recently been presented, which assumes that there are not two routes, but one single process of reasoning to conclusions (heuristics or arguments). There is some uncertainty about how the Elaboration Likelihood Model and the unimodel exactly differ, and about how they may offer different empirical predictions, but the arrival of the unimodel will certainly inspire future research on these persuasion models.

Before the author discusses the factors that influence the persuasive outcome, he draws attention to problems that generally arise in studies on persuasive effects (Chapter 7). One problem is the difficulty of making reliable generalizations about the effects of a certain factor. O'Keefe gives a useful meta-analysis, which enables him to summarize a series of different studies. In the last three chapters, O'Keefe summarizes and structures studies on source, message, receiver, and context factors. Chapter 8 deals with source factors, such as credibility and liking (that directly influence the persuasive outcome), and similarity and attractiveness (that often have an indirect influence). As these source characteristics have various relationships with each other, the general picture is quite complex. Message factors (Chapter 9) are centered on three broad categories: message structure (order of arguments, standpoint explicitness, etc.), message content (such as one-sidedness versus two-sidedness, fear appeals, and anecdotal versus statistical evidence), and sequential request strategies (the foot-in-the-door and the door-in-the-face strategies). The last chapter (10) deals with receiver and context factors. There are three main topics: natural receiver characteristics, induced receiver factors, and contextual factors. In general, no hard conclusions can be made: some factors are still an open issue (sex differences), sometimes there is no good evidence (general persuadability), and some factors have received only little attention (such as the influence of medium).

In sum, *Persuasion* will be very useful both to persuasion, communication, and psychology students and to more experienced readers. Books like these can never provide the full picture, but O'Keefe has succeeded in presenting persuasion theories and research results in a clear and convincing way. The presentation of the various theories in the first chapters is always followed by relevant commentaries, concrete cases that exemplify the theories, and practical consequences for persuasive strategies. The review of studies on different factors combines classic and current research results in a well-structured way with indications where future research would be welcomed.

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The Language of Graphics: A Framework for the Analysis of Syntax and Meaning in Maps, Charts and Diagrams. Yuri Engelhardt. Amsterdam: University of Amsterdam, Institute for Logic, Language and Computation (www.illc.uva.nl), 2002. 197 pp., 60 b/w figures. ISBN 90–5776–089–4.

Although we live in the era of the visual, applicable theories of the static image (as distinct from philosophical treatises) are still rare. In his PhD dissertation *The Language of Graphics*, Yuri Engelhardt explores an important part of the territory. He wisely narrows down the field: "We will first try to understand static versions of graphic representations, before we will try to understand dynamic and interactive versions" (p. 10). His definition of a graphic representation as "a visible artifact on a more or less flat surface that was created in order to express information" (p. 2) further limits the corpus. First, the insistence on the "crafted" nature of the representations investigated is significant because it allows for greater control by the image-maker over what is represented than in the case of photographs (although Engelhardt's definition does not, strictly speaking, rule out this latter category). Second, the focus on communicative representations is helpful. The fact that any aesthetic dimension the images may possess is always subservient to their informative goal sets them off from other categories of images — especially artistic ones, where the priorities may be reversed. Together, maximum