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### The Psychology Underlying Media-Based Persuasion

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### Abstract and Keywords

Attempts at persuasion are as ubiquitous as the media often used to disseminate them. However, to explore persuasion in the context of media, we must first consider the psychological processes and mechanisms that underlie persuasive effects generally, and then assess how those strategies might apply in both traditional as well as more innovative media. This chapter overviews three dominant frameworks of persuasion (cognitive response models, expectancy value theories, and emotional appeals), along with three more subtle forms of influence (framing, narrative, and product placement) to explore how psychological theory and media effects research intersect to shed light on media-based persuasive influence.

Keywords: cognitive response, emotion, expectancy value theories, framing, media effects, narrative, persuasion, product placement

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### Introduction

Attempts at persuasion are as ubiquitous as the media often used to disseminate them. Given that decades of persuasion research has documented just how challenging it can be to alter the beliefs, attitudes, and especially the behaviors of others, it is unsurprising that media strategies have evolved in response to emerging technologies to help overcome barriers to persuasion, thus yielding the modern persuasive forms of, for example, infomercials, product placement, and viral videos. But ultimately the psychological theories of how people process such messages are relatively indifferent to the messages' particular forms. That is, despite the rapid changes in media forms and modes of transmission, the theories used to understand their effects remain largely unchanged. Thus, to explore persuasion in the context of media, we must first consider the psychological processes and mechanisms that underlie persuasive effects generally, and then assess how those strategies might apply to both traditional as well as more innovative media, with an eye toward useful avenues for theoretical advancement. Given the vastness of the topic of persuasion has been well-addressed in volumes previously (e.g., Eagly & Chaiken, 1993; Dillard & Pfau, 2002; Perloff, 2010), we will not attempt to offer a comprehensive review of the extant psychological research on persuasion here. Rather, we focus on the theoretical frameworks most directly linked to current research in media effects, how these theories have been applied in media contexts, and issues that might prove fruitful for future examination.

Although many definitions of persuasion exist, they tend to share several common elements. Persuasion is typically understood as a process whereby a message sender intends to influence an (uncoerced) message receiver's evaluative judgments regarding a particular object. Given media effects research tends to emphasize the unintended and often negative influence of media content on receivers, we wish to be clear that this chapter focuses (p. 286) exclusively on intentional effects at persuasion rather than the incidental social influence that might occur as a result of mass media exposure.

There are a number of classes of persuasion theories that focus on a range of psychological mechanisms driving

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influence that might be applied to the study of media effects. However, there are three theoretical orientations that have received substantial attention from media effects scholars interested in more direct and obvious attempts at persuasion, such as advertisements or public service announcements: cognitive response models, expectancy-value theories, and emotional appeals. Further, there are three additional frameworks that have been given particular attention in the context of more subtle, although arguably more powerful, forms of media-based persuasive influence: framing, narrative, and product placement. This chapter reviews the literature in each of these areas, with particular attention to how such research might evolve in response to the ever-changing media environment.

## Theory Underlying Mediated Persuasive Appeals

As noted, a plethora of theories and models have been applied in media contexts, but three stand out as guiding the discussion of media influence: cognitive response models, expectancy-value theories, and fear appeals. We address each one in turn.

## Cognitive Response Models of Persuasion

Cognitive response models of persuasion assume that the thoughts people have during message exposure drive their subsequent attitudes. As such, message recipients are viewed as active participants whose cognitive reactions mediate the influence of a persuasive attempt. Most notable among these models is Petty and Cacioppo's (1986) elaboration likelihood model (ELM) of persuasion, which suggests two possible routes to persuasion—central and peripheral. If sufficient processing motivation and ability are present, central processing is expected to occur during which the receiver will give thoughtful consideration to the arguments and information presented. The ratio of favorable to unfavorable cognitive responses generated about the message is then expected to predict persuasive outcome. If either processing motivation or ability is impaired, the receiver is expected to engage in peripheral processing during which simple, though not necessarily relevant, cues present in the persuasive setting will influence attitudinal response.

Petty and Cacioppo (1986) note that because greater message elaboration is expected to generate more thoughts that are then incorporated into cognitive schema, attitude change based on central processing is expected to be more stable, enduring, and predictive of behavior than attitude change based on peripheral processing. The nature and valence of the cognitive responses generated during central processing may be guided by a range of factors, including initial attitude, prior knowledge, personality factors, and mood. Moreover, they acknowledge that biased processing may occur to the extent various factors, particularly initial attitude, influence motivation or ability to process the message, resulting in more or less favorable thoughts about the object than might have been expected otherwise.

The ELM has been tested in numerous lab studies, the results of which tend to support its predictions (Eagly & Chaiken, 1993). However, several important theoretical and empirical criticisms have been launched against it, including the dichotomy between central and peripheral processing, the tautological definition of argument strength, and the inability to specify a priori whether particular message features will be processed centrally or peripherally (Stiff, 1986; Stiff & Boster, 1987; and responses by Petty, Cacioppo, Kasmer, & Haugtvedt, 1987 and Petty, Kasmer, Haugtvedt, & Cacioppo, 1987; also, see Eagly & Chaiken, 1993). The ELM has not been appreciably modified in light of these criticisms; however, the notion of thought confidence influencing outcomes was introduced in the early 2000s, suggesting that confidence in one's thoughts about the message intensifies their effect (i.e., confidence in favorable thoughts enhances persuasion and confidence in unfavorable ones detracts) (Petty, Brinol, & Tormala, 2002). However, this element of the model has seen little additional attention in the extant research since its introduction.

Chaiken's heuristic-systematic model (HSM) of persuasion offers a similar, although more clearly specified dual-processing approach. The HSM suggests that accuracy-motivated people may assess message validity through two types of message processing—heuristic and systematic—which may operate concurrently depending on the receiver's judgmental confidence threshold for a particular issue (Chaiken, 1980, 1987; Chaiken, Liberman, & Eagly, 1989; Eagly & Chaiken, 1993). As cognitive misers, individuals are expected to base decisions on heuristics if they can be sufficiently confident in the accuracy of those decisions. If sufficient confidence cannot be reached

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using simple decision rules, individuals are expected to then also engage in the more effortful systematic processing. Although the (p. 287) HSM's systematic processing and the ELM's central processing are essentially the same, heuristic and peripheral processing differ in that the former is conceptualized as only cognitive and rational, whereas the latter is believed to encompass any cognitive or affective processes other than close message scrutiny. Research testing the unique aspects of the HSM has offered some evidence consistent with the model's propositions, particularly that of concurrent processing and the attenuation of heuristic effects by systematic processing (Eagly & Chaiken, 1993). Further, the model has been elaborated by identifying multiple motives for message processing (i.e., accuracy, defensive, and impression motivations). However, research has not directly targeted the sufficiency threshold construct, thus limiting insights into the factors that might move the threshold higher or lower, which would have implications for the information needs of the audience.

Given that media effects scholars have generally adopted the view of audiences as active consumers of messages rather than mere passive information recipients, it is understandable why cognitive response models have been readily embraced by media effects scholars. Indeed, the ELM and HSM have been applied in numerous traditional advertising contexts, including those related to health (e.g., Wilson, 2007; Smith, Lindsey, Kopfman, Yoo, & Morrison, 2008), politics (e.g., Holbert, Garrett, & Gleason, 2010), and of course commercial products (e.g., Whittler & Spira, 2002). Generally speaking, such research tends to apply these theories to understand how various features of the audience (e.g., motivation) and features of the messages (e.g., arguments and cues) interact to lead to changes in attitudes, behavioral intentions, and behaviors.

There is a wealth of evidence supporting the tenets of cognitive-response models in advertising contexts. However, perhaps because they were developed with a focus on psychological mechanisms rather than message design, they are not particularly responsive to the complexities with which modern media messages may be presented. For example, whereas the majority of ELM-based studies are based on text-only messages, an overwhelming proportion of mediated persuasive messages contain visuals. According to Petty and Cacioppo's (1986) arguments, the persuasive impact of visuals would depend on whether the receiver is motivated and/or able to process the message. If motivated and able, the visuals will be taken as arguments. Otherwise, they will be used as cues and have ephemeral effects on attitudes. However, given visuals (unlike text) can be processed quickly with minimal cognitive effort, one might have low motivation and ability and yet still be greatly impacted by a particularly gripping image that can be processed nearly automatically and, in turn, result in long-lasting attitude change. Thus, the ELM, in its current form, seems somewhat insensitive to more modern persuasive contexts.

As the design of persuasive media messages evolves, some research will certainly continue to work within the typical framework of dual-processing cognitive response models, examining, for example, how innovative message features, like interactive social agents (e.g., Skalski & Tamborini, 2007) and online reviews (Lin, Lee, & Horng, 2011), influence processing motivation or serve as peripheral cues. However, given the ELM and HSM were developed largely in the context of more text-based, expository messages—a less typical form of media presentation in recent years—some fundamental assumptions about the nature of message processing as captured by these theories, may be challenged by newer media formats. For example, Cho (1999) articulated a modified elaboration likelihood model to address the processing of Web advertising, arguing for the roles of both voluntary and involuntary ad exposure as well as the mediating effects of repeated exposure, attitude toward the site, and attitude toward Web advertising, beyond the roles of processing motivation and ability as articulated by the ELM. San Jose-Cabezudo, Gutierrez-Arranz, and Gutierrez-Cillan (2009) also argue that how Web pages are presented influences the nature of the information processing that ensues.

In sum, cognitive response models have provided a very useful framework for understanding how media messages may lead to persuasive effects, and will surely continue to guide examination of unique media features in the coming years. However, newer media forms may bring to light limits of these theories developed in an era of less complex message design and thus ideally generate theoretical innovations sensitive to these technological changes.

## Expectancy Value Theories

A second class of persuasion theories—expectancy value theories—also focuses on cognition, but these theories assume audiences are rational decision makers who weigh the pros and cons of their options. More specifically, they assume people have expectancies regarding whether an object has a certain attribute, and they ascribe a

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particular value to that attribute. In combining these assessments, one's attitude is formed. Indeed, it was the endeavor to (p. 288) understand the conditions under which stable attitude-behavior relationships could be found that resulted in the development of the most well-known expectancy-value theory—the theory of reasoned action (TRA) (Fishbein & Ajzen, 1975), one of the more influential theories of social influence in the last 50 years.

According to the TRA, the best predictor of volitional behavior is behavioral intention (Fishbein & Ajzen, 1975). Behavioral intentions, in turn, are based on two types of cognitive antecedents: (1) attitudes toward performing a particular behavior, and (2) the subjective norm surrounding that behavior. Attitudes are comprised of groups of salient beliefs regarding behavioral outcomes and evaluations of those outcomes. Comparably, the subjective norm is comprised of perceptions of important others' attitudes regarding one performing the behavior and motivation to comply with their opinions. Under this conceptualization, other variables, like demographics, personality traits, and related attitudes, affect behavior only insofar as they affect the individual's beliefs, evaluations, or motivations to comply. A meta-analysis of TRA-based research supports the model's propositions that attitudes and subjective norms can accurately predict behavioral intentions and, in turn, behaviors (Sheppard, Hartwick, & Warshaw, 1988). In addition, a meta-analysis of 138 attitude-behavior correlations further supports the TRA's position that attitudes can have strong associations with behaviors across a range of topics (Kim & Hunter, 1993).

Despite the wealth of evidence supporting the TRA, its critics argue that its utility and predictive ability are limited by its intended applicability to: (1) volitional behaviors only, (2) stable attitudes and behavioral intentions, and (3) corresponding attitude and behavior measures in terms of target, context, time, and action (see Eagly & Chaiken, 1993 for a critical review). In fact, several individual and situational barriers have been identified as having a significant impact on the translation of attitudes and/or intentions into behaviors, including time, money, the cooperation of other people, and personal self-efficacy (Triandis, 1977; Ajzen, 1985; Ajzen & Madden, 1986; Madden, Ellen, & Ajzen, 1992). Indeed, the theory of planned behavior was developed to help address these limitations (Ajzen, 1985), and recently Fishbein and Ajzen (2010) have elaborated on the critical elements of the reasoned action perspective, including the origins of beliefs, the role of injunctive versus descriptive norms, and the determinants of perceived behavioral control. Still, within its self-identified boundaries, TRA-based research has generated evidence to demonstrate that under the appropriate circumstances, attitudes can reliably predict behavioral intentions and behaviors.

Applied to media-based persuasion, the TRA is most helpful in suggesting what message content, rather than message design features, might best produce persuasive effects. To the extent a behavior is more heavily influenced by attitudes, one might attempt to change already-held outcome-belief expectancies or the valuations ascribed to those outcomes. Or one might look to add new belief clusters to the attitude equation. If the subjective norm is more dominant in predicting behavioral intentions and behaviors, then producing messages that speak to perceptions of what others think, motivation to comply, or adding new important others to the equation may be effective. Moreover, one might also attempt to alter the weighting of the attitude relative to the subjective norm to affect shifts in behavioral intentions and behaviors. Although this framework is extremely useful in guiding conceptually what one might hope to achieve with a persuasive message, the TRA is silent on how one might actually implement those ideas in message design. Further, the TRA is very limited in its consideration of factors beyond "rational" beliefs. Most notably, the role of emotion is not incorporated into the model in any direct or meaningful way. Given emotion (as described in a later section) is a primary motivational force underlying behavior, this is a very notable limitation of the TRA.

As media message platforms shift such that persuasive messages may be easily avoided (e.g., fast forwarding through commercials or blocking pop-up ads on web sites) or alternatively hard to avoid (e.g., embedded in web sites of interest), it has become increasingly important to take into consideration how belief-based information is presented to capture attention. Yet, it is this very presentation that may shift audiences away from more rational and deliberative decision making (see discussions of emotion and framing that follow). Although Fishbein and Ajzen (2010) would likely argue that such message features (e.g., emotional presentations) act merely as background variables influencing behaviors only indirectly through the beliefs formed, the action tendencies associated with emotions generated from media presentations may actually serve to intensify the likelihood of action *without* full mediation through beliefs. Thus, important directions for future research will be to consider not just how various message features may influence the construction (p. 289) of attitudes and subjective norms via information salience, but also how the process of influence through to behavior is influenced by the psychological state the

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audience may be in because of those attention-getting contextual features.

## Emotion and Persuasion

A third dominant framework for media-based persuasion research focuses on affective states. Most of the research here has centered around fear arousal and its effects on both message processing and persuasion-related outcomes (e.g., attitudes, behavioral intentions, and behaviors), although the persuasive influence of other emotional states is receiving increasing attention.

## Fear Appeal Research

The fear appeal literature has cycled through several theoretical perspectives over the past 50 years (see Nabi, 2007 for more detailed discussion), including: (1) the drive model, which conceptualized fear as resembling a drive state, motivating people to adopt recommendations expected to alleviate the unpleasant state (e.g., Hovland, Janis, & Kelley, 1953); (2) the parallel processing model (PPM) (Leventhal, 1970), which separated the motivational from the cognitive aspects involved in processing fear appeals, suggesting that those who respond to fear appeals by focusing on the threat (cognition) would engage in adaptive responses, whereas those responding with fear (emotion) would engage in maladaptive responses; (3) the expectancy value–based protection motivation theory (Rogers, 1975, 1983), which ultimately focused on four categories of thought generated in response to fear appeals—judgments of threat severity, threat susceptibility, and response and self-efficacy—and how they might combine to predict message acceptance; and (4) the extended parallel process model (EPPM) (Witte, 1992), which integrated the PPM and PMT, predicting that if perceived efficacy outweighs perceived threat, danger control and adaptive change will ensue. If, however, perceived threat outweighs perceived efficacy, then fear control and maladaptive behaviors are expected.

Although meta-analyses of fear research essentially suggest that the cognitions identified in the PMT, and later the EPPM, are important to fear appeal effectiveness, no model of fear appeals has been endorsed as accurately capturing the process of fear's effects on decision making and action (see Mongeau, 1998; Witte & Allen, 2000). Regardless, evidence does support a positive linear relationship between fear and attitude, behavioral intention, and behavior change. Thus, to the extent message features evoke perceptions of susceptibility and severity, as well as response and self-efficacy, fear may moderate persuasive outcome, although there are still important questions about the interrelationships among these constructs that remain unanswered. Further, questions about whether severity and susceptibility information should always be included in fear appeals or whether “implicit” fear appeals might be more effective have also been raised (Nabi, Roskos-Ewoldsen, & Dillman Carpentier, 2007). Thus, there is still much work to be done in linking the theory of fear appeals to appropriate message design.

## Beyond Fear Appeals

There is growing interest, as well, in understanding the effects of emotions other than fear in the processing of persuasive messages (see Nabi, 2007 for a more extensive discussion), and emerging models attempt to examine those processes. For example, the cognitive functional model (CFM) (Nabi, 1999) attempts to explain how message-relevant negative emotions (e.g., fear, anger, sadness, guilt, disgust) affect the direction and stability of persuasive outcome based on three constructs—emotion-driven motivated attention, motivated processing, and expectation of message reassurance. An initial test of the model (Nabi, 2002) offered support for some, although not all, of the model's propositions, but as it awaits future tests, the CFM offers insight into the process through which a range of discrete emotions, not just fear, influences message processing, and outcomes.

In a similar vein, Nabi (2003, 2007) posits an emotions-as-frames model to explain the effects of more general media exposure on attitudinal and behavioral outcomes. In this model, emotions are conceptualized as frames, or perspectives, through which incoming stimuli are interpreted. The model first notes the message features likely to evoke various discrete emotions. These emotional experiences, moderated by individual differences (e.g., schema development, coping style), are predicted to influence both information accessibility and information seeking that ultimately generate emotion-consistent decisions and action. Nabi argues that through this perspective we may develop a better understanding of the central role emotions may play in understanding how frames in a range of media messages, including those designed to persuade, might impact attitudes and behaviors.

Notably missing from this discussion thus far, however, is research on the persuasive effect of positive (p. 290)

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emotional states. There has been a fair amount of attention to humor; however, reviews of the humor literature have concluded that though humor may enhance message attention and source liking, it is generally no more persuasive than nonhumorous messages (see Weinberger & Gulas, 1992 for a more nuanced discussion). With the increasing popularity of political satire programs, such as the *Daily Show* and the *Colbert Report*, there has been an upswing in interest in examining the process through which humor may have persuasive influence. For example, Nabi, Moyer-Gusé, and Byrne (2007) argue that humor may not have immediate persuasive effect because although audiences attend closely to the message, they discount it as a joke that is not intended to persuade, thus minimizing the message content's effects on their attitudes. However, they also posit that this type of processing may lead to a " sleeper effect " such that the persuasive effect of humor may emerge after some time has passed (see also Young, 2008). Clearly, future research would benefit from closer examination of the persuasive effect of positive emotions like hope and pride and the processes through which such effects might emerge.

Beyond the types of emotions investigated, future research would also benefit from greater attention to issues such as the role of emotion in overcoming barriers posed by selective attention. In the cluttered media environment, garnering attention to one's persuasive message is increasingly challenging and yet a necessary (although not sufficient) step in the persuasion process. Emotional appeals may be particularly well-suited to this task. Of course, once attention is gained, it is critical that the rest of the message be structured appropriately for the target audience. Risk of boomerang effects due to psychological reactance (message resistance stemming from perceiving an unjust restriction on one's freedom to choose) (Brehm, 1966), denial, problem minimization, and the like persist. Understanding the delicate balance between gaining attention and harnessing it to intended effect has been an elusive challenge in the area of emotional appeals and persuasion, and future research would be well served by tackling this difficult message design issue.

Further, understanding in greater detail how the specifics of message content may relate to an audience's emotional state is a surprisingly understudied issue. For example, the assumption in fear appeal research is that people are scared by threats to their physical body, most especially thoughts of death. Yet fears of disability (e.g., paralysis, blindness) or disfigurement may prove equally, and sometimes more, frightening than death. Further, not all fears are rooted in physical well-being. Evidence suggests that younger audiences' assessments of their likelihood of experiencing a range of health problems are characterized by the optimism bias, and compared with adults, teenagers minimize the perceived risk associated with the occasional involvement in health-threatening acts (Cohn, Macfarlane, Yañez, & Imai, 1995). However, given that teenagers and young adults are still forming their identities, threats to social acceptance may be far more salient and thus more frightening to such audiences than threats to physical well-being. Thus, *social harm-based* fear appeals may be more effective for young audiences than *physical harm-based* fear appeals. Future research would be well served by considering not simply a greater range of emotional responses, but also the matching of message content and features to the intended emotional arousal for particular target audiences and by continuing to explore the impact of discrete emotional arousal states on information processing and decision making.

## Subtler Forms of Persuasion

In addition to the three dominant frameworks of persuasion that have been examined in media contexts, there are three other, subtler forms of persuasion that warrant close attention: framing, narrative, and product placement.

### Framing

Framing theories generally posit that the way in which information is presented, or the perspective taken in a message, influences a range of audience responses. As Entman (1993) states, a message frame will "promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation...." (p. 52). As a result of the framing process, receivers notice, process, think about, and store information in a manner consistent with a particular message frame (Fiske & Taylor, 1991), which in turn may influence the information people use to form opinions (Price & Tewksbury, 1997). In essence, a frame is a perspective infused into a message that promotes the salience of selected pieces of information over others. When adopted by receivers, frames may influence individuals' views of problems and their necessary solutions.

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Several prominent studies provide evidence supporting this claim in a variety of contexts, including how language choice influences risky decision-making (Kahneman & Tversky, 1984), how television news framing affects attributions of responsibility for both (p. 291) the causes of and the treatments for social problems (Iyengar, 1991), how political journalistic news norms help to define the ideas people express when talking about politics (Gamson, 1992), and how news coverage of political campaigns influences how the public thinks about political processes (Cappella & Jamieson, 1997). In sum, these research programs indicate that the way in which information is presented can influence how people understand, evaluate, and act on a problem or issue.

Regarding the cognitive processes through which framing effects occur, it is generally suggested that such effects are the result of information accessibility biases. According to Iyengar (1991), when fed a steady diet of one type of frame over another, individuals tend to recall and use the information consistent with the predominant frame when making a decision. Price and Tewksbury (1997) argue that such accessibility of applicable information from memory influences decision making in both the short and long term if those thoughts continue to be made accessible to the individual by repetitious exposure to certain frames over others. Cappella and Jamieson (1997) also argue that news frames stimulate access to certain information, beliefs, and/or inferences, making them increasingly accessible with repeated exposure. However, they further suggest that decision making is influenced by both memory-based and online processing rather than relying solely on memory-based influences.

There is great diversity in the rich extant framing literature in terms of conceptualization, operationalization, and context application, and the many calls for strong theory development to help make sense of this increasingly disparate area of influence have been generally unsuccessful. Still, there are helpful ways to view the framing literature that give it some clearer structure. In considering the various ways in which framing has been studied, Shah, McLeod, Gottlieb, and Lee (2009) identify two key dimensions—precision versus realism, and context-specific frames versus context-transcendent frames. Precision involves holding information content constant while manipulating only the way in which that information is presented, whereas realism allows for natural variation in messages (including their content) to allow for greater external validity. This is a critical distinction because framing effects based on precision can be argued to be solely a function of the *presentation* of the information, whereas framing based on realism, although perhaps more externally valid, conflates influence based on both content and style.

Regarding Shah et al.'s second dimension, context-specific research focuses on the frames that may exist within a certain topic that do not translate to other contexts or when applied to another context do not mean the same thing (e.g., an economic frame in health care is not the same as an economic frame in a political campaign), whereas context-transcendent views suggest that there are more generic forms of presentation that cut across contexts (strategy versus issue frames in politics or gain versus loss frames in health). These dimensions certainly highlight critical ways in which framing studies may vary, although the field still awaits more detailed theorizing building on these variations.

Given all media messages (and indeed all messages generally) involve selection and salience by virtue of their mere construction, framing is an inherent part of all persuasive messages. The question most central to this chapter, then, is what forms of media message construction result in what patterns of influence. As we look to the communication literature, framing is a central feature of research in both political and health communication. The political communication research tends to focus more on unintentional effects of the news media's presentation of issues, whereas health communication research considers more directly intentional efforts to influence audiences' attitudes and behaviors, so it is on the latter area that we will focus.

The bulk of research on framing, persuasion, and health is rooted primarily in prospect theory. Prospect theory is a particular brand of framing theory developed to explain choices involving risk in which people often prefer options incompatible with the most rational choice (Kahneman & Tversky, 1979, 1984; Tversky & Kahneman, 1981). More specifically, messages inviting risky decision making may present issues in terms of one of two basic frames: losses (e.g., disadvantages or detriments related to *not* engaging in an advocated behavior) or gains (e.g., benefits or advantages related to complying with an advocated behavior). In processing the framed options, message receivers subjectively evaluate them, assessing value based on whether they are expected to improve or impair the current situation. Importantly, this subjective perception is often at odds with the objective likelihood of experiencing an outcome.

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Consequently, according to Tversky and Kahneman (1981), there are predictable shifts of preference depending on whether a problem is framed in terms of gains or losses. In general, people are more risk averse when faced with gain-framed messages. (p. 292) That is, if a person sees the current situation as good or certain, she or he will hesitate to engage in a behavior perceived as potentially interfering with the current status of certainty. Conversely, people are predictably more risk-seeking when exposed to loss framed messages. That is, if a person perceives the present situation as costly, she or he will feel there is little to lose by engaging in a behavior that involves some risk.

Prospect theory asserts that generally speaking, loss frames are more effective at influencing behavior (Kahneman & Tversky, 1979). However, Rothman and Salovey (1997) note that when assessing the impact of frame type in the context of health messages, the type of behavior (e.g., prevention or detection) is relevant. More specifically, they argue that health prevention behaviors (e.g., exercise, teeth brushing, sunscreen use) are generally viewed as less risky compared with detection behaviors (e.g., cholesterol screening, dental visit, dermatological skin check) because by nature they provide more certain and desirable outcomes, helping to maintain current health and inhibit unwanted health problems. Thus, Rothman and Salovey argue that gain frames, which also focus on a behavior's health benefits, can be more effective than loss frames in the prevention behavior context, as evidenced by research promoting regular exercise (Robberson & Rogers, 1988), intentions and behaviors to wear sunscreen (Rothman, Salovey, Antone, Keough, & Martin, 1993; Block & Keller, 1995; Detweiler, Bedell, Salovey, Pronin, & Rothman, 1999), and obtaining a plaque-fighting mouthwash (Rothman, Martino, Bedell, Detweiler, & Salovey, 1999).

Conversely, because of the potential to be informed of an undesirable health state, detection behaviors are often considered risky and anxiety-evoking (Rothman & Salovey, 1997). Because loss frames generally lead to greater adherence in risky situations, loss-framed messages are thought to be more effective in promoting detection behaviors (Rothman et al., 1993; Banks et al., 1995), such as breast self-examinations (Meyerowitz & Chaiken, 1987); getting a mammogram (Banks et al., 1995); and dental exams (Rothman et al., 1999; see Rothman & Updegraff, 2011, for a current overview).

Although the relative advantages of the prevention-gain frame/detection-loss frame pairings are generally supported across individual studies, it is important to acknowledge critical potential moderators of these relationships. First, the predicted interaction is contingent on the targeted behaviors being perceived as relatively safe (prevention) versus relatively risky (detection). It is of course possible that objectively defined prevention or detection behaviors may be viewed as risky or safe, respectively, by specific audiences, thus disrupting the expected pattern of findings (Rothman & Updegraff, 2011). Second, a recent meta-analysis has called the strength of the detection-loss frame effect into question (O'Keefe & Jensen, 2009), suggesting the nature of the detection behavior itself (e.g., its ability to be cognitively or affectively engaging) may impact whether a particular frame offers persuasive advantage (see also Rothman & Updegraff, 2011). Third, personality traits or dispositions of the message receiver (e.g., promotion or prevention focus, approach or avoidance tendencies, regulatory focus) may influence the likelihood of framing effectiveness. For example, promotion-focused people, who are oriented toward growth and accomplishment (i.e., "wants"), may respond more favorably to gain-framed messages, whereas prevention-focused people, who are concerned with safety and security goals (i.e., "oughts"), may respond more favorably to a loss-framed message (Rothman, Wlaschin, Bartels, Latimer, & Salovey, 2008; Rothman & Updegraff, 2011). Further, additional audience factors, such as issue involvement, may influence frame effectiveness. Indeed, evidence suggests that issue involvement may lead to stronger framing effects (Maheswaran & Meyers-Levy, 1990; Rothman et al., 1993) perhaps because of closer information processing (Rothman & Salovey, 1997).

From a persuasion perspective, it is clear that the intentional framing of messages may have advantages to influencing attitudes, behavioral intentions, and behaviors regarding targeted health behaviors, and that a match between the audience's construal of the behavior and the message frame is critical to maximizing persuasive advantage. Understanding in more depth the factors relevant to such matching is obviously critical to harnessing framing for maximum benefit. Also greatly needed is a deeper understanding of the psychological process through which framing effects emerge (Rothman & Updegraff, 2011). Particularly overlooked, in our view, has been the role of emotion in these processes (Nabi, 2007). Apart from some general associations drawn between loss-framed messages/detection behaviors, gain-framed messages/prevention behaviors, and negative and positive feelings, respectively, there is little discussion of the role of emotion in framing effects. Deeper exploration into the ways in which specific emotions evoked within these contexts impact audience processing and decision making could be



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enlightening.

(p. 293) Also, with due respect to the extensive research on gain and loss frames in health messages, there are other forms of health message presentation that may be worth pursuing to better understand how message framing may influence health decision making. For example, as noted earlier, Nabi (2007) presents an emotions-as-frames model in which she argues that emotions themselves serve as frames to influence information accessibility and information seeking such that emotion-consistent behaviors result. Tests of these assumptions would help shed light on how different emotion frames, apart from or perhaps in conjunction with gain and loss frames, may influence health decision-making. Another context-transcendent frame set that might warrant greater attention is personal responsibility versus societal or environmental influence, in which the former frame may lead to more individual action, whereas the latter may lead to changes in public policy. Exploring the alternative ways in which health information may be presented, other than via gain versus loss, may allow for richer and more extensive applications of intentional message framing.

Finally we wish to make two additional observations. First, framing and health research tends to focus on how information is presented in text rather than how information might be presented visually or interactively. Research linking more innovative modes of information presentation to the framing literature may prove insightful. Second, there is little if any research or discussion on potential boomerang effects in the context of framing and health messages. Given the importance of understanding not simply when messages work, but also when they backfire, this line of inquiry, too, would be of great benefit, especially in light of the repeated exposure that is the goal of health campaigns.

## Narrative Persuasion

Narrative persuasion offers a second common form of “subtle” influence. Although many definitions have been used, a *narrative* can be defined as a story with, “...an identifiable beginning, middle, and end that provides information about scene, characters, and conflict; raises unanswered questions or unresolved conflict; and provides resolution” (Hinyard & Kreuter, 2007, p. 778). A narrative structure can offer some advantages over more overt persuasive appeals for several reasons. First, narratives are able to attract attention in a competitive media environment. Indeed, scholars have noted the unique potential for entertainment media to reach audiences compared to traditional persuasive messages or news media (Montgomery, 1990; Jin, 2006). Because entertainment narratives are appealing and engrossing, individuals are more likely to direct their attention to them, and by default, to the embedded educational message (Bandura, 2004). Second, stories featuring well-liked or attractive characters are well-suited for modeling behavior (e.g., Bandura, 1986). Third, narrative persuasion offers the unique potential to persuade without arousing traditional forms of resistance (e.g., reactance and counterarguing).

A growing body of research has examined how narrative media messages can influence viewers’ attitudes and behaviors across a variety of health or social issues. We begin our discussion first by elaborating on the primary context of the study of persuasion and narrative—entertainment-education—before discussing the theoretical foundations of the persuasive influence of narrative.

## Entertainment-Education

One common application of narrative persuasion has been entertainment-education (EE). Generally speaking, EE refers to media programs that “entertain and educate, in order to increase audience members’ knowledge about an educational issue, create favorable attitudes, and change overt behavior” (Singhal & Rogers, 1999, p. 9). Beginning with early programs developed in Mexico in the 1980s (Sabido, 1981), EE efforts have targeted a range of behaviors and topics, such as AIDS prevention, gender equity, condom use, sex education, and literacy (Sood, Menard, & Witte, 2004).

Generally speaking, evidence suggests that under the right circumstances, EE can be an effective form of persuasion (for review, see Singhal & Rogers, 2004). For example, one of the most successful documented EE efforts is “Soul City,” an entertainment media campaign in South Africa that, among other elements, features a prime time television drama series that addresses various health-related topics each year, including HIV prevention and control (Singhal & Rogers, 2001). Using pre- and posttest panel surveys, evaluations have shown that

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broadcasting of this program associated with increases in knowledge of HIV transmission and prevention, positive attitudes toward condom use, and increases in prevention behaviors (Singhal & Rogers, 2001; Soul City Institute, 2005).

Although International EE interventions are typically developed with specific health or prosocial goals in mind, in the United States, educational storylines are typically embedded into otherwise purely (p. 294) entertainment programming (Singhal & Rogers, 1999; Greenberg, Salmon, Patel, Beck, & Cole, 2004). Sometimes these storylines appear through the work of advocacy groups (Greenberg et al., 2004), whereas in other cases they are developed solely by television writers (Singhal & Rogers, 2004). Research generally supports the effectiveness of this sort of EE program on audience awareness and knowledge of various health issues, such as condom efficacy (based on an episode of the situation comedy *Friends*) (Collins, Elliott, Berry, Kanouse, & Hunter, 2003), emergency contraception and human papillomavirus (based on a storyline from the prime time drama *ER*) (Brodie et al., 2001), and HIV and cancer plotlines in various entertainment television programs (Beck, 2004; Hether, Huang, Beck, Murphy, & Valente, 2008; Wilkin et al., 2007). There is also evidence that EE efforts can influence viewer attitudes toward stigmatized groups, such as individuals with HIV (O'Leary, Kennedy, Pappas-DeLuca, Nkete, Beck, & Galavotti, 2007; Lapinski & Nwulu, 2008) or mental illness (Ritterfeld & Jin, 2006). Moreover, EE may influence viewers' behavioral intentions. Specifically, viewers of television dramas featuring organ donation storylines were more likely to decide to donate if the drama explicitly encouraged it, particularly if viewers were emotionally involved in the narrative (Morgan, Movius, & Cody, 2009).

Exposure to an EE program can also prompt viewers to both seek out additional information about a topic, such as HIV (Kennedy, O'Leary, Beck, Pollard, & Simpson, 2004) or breast cancer screening (Wilkin et al., 2007), and inspire conversations about the topics embedded in the narrative (Valente, Kim, Lettenmaier, Glass, & Dibba, 1994; Papa et al., 2000; Sood, Shefner-Rogers, & Sengupta, 2006; Pappas-DeLuca et al., 2008). For example, a recent experiment showed that characters who model difficult conversations about safer sex can boost viewers' self-efficacy and encourage them to engage in similar conversations in their own lives (Moyer-Gusé, Chung, & Jain, 2011). Thus, extant research supports the influence of EE efforts on a range of persuasion-related variables, including knowledge, attitudes, behavioral intentions, information seeking, and conversation.

The narrative influence strategy typically used in EE programs is not without limitations. For example, because the underlying persuasive content in a narrative is less overt, viewers are free to actively construct its meaning. As a result, EE narratives can lead to misinterpretation among some viewers (Singhal & Rogers, 2001). Although evidence for EE effectiveness abounds, some studies have found that these narrative-based messages are effective at influencing only a subset of viewers and may lead to boomerang effects among others (e.g., Vidmar & Rokeach, 1974; Wilson et al., 1992; Moyer-Gusé & Nabi, 2011). Such findings highlight the need for greater understanding of the mechanisms by which narrative influence occurs.

## Theoretical Foundations of Narrative Persuasion

One frequently cited explanation for the success of EE efforts is social cognitive theory (SCT) (Bandura, 1986). Social cognitive theory revolves primarily around the functions and processes of observational learning (Bandura, 1986, 2002b). That is, by observing others' behaviors, including those of media figures, one may develop rules to guide one's own subsequent actions. More specifically, Bandura (1986, 2002b) argues that observational learning is guided by four processes, which are moderated by observers' cognitive development and skills. First, *attention* to certain models and their behavior is affected by source and contextual features, like attractiveness, relevance, functional need, and affective valence. Second, *retention* processes focus on the ability to symbolically represent the behavior observed and its consequences, along with any rehearsal of that sequence. *Production* focuses on translating the symbolic representations into action, reproducing the behavior in seemingly appropriate contexts and correcting for any errors based on the feedback received. Finally, *motivational* processes influence which symbolically represented behaviors are enacted based on the nature or valence (positive or negative) of the reinforcement. Such reinforcement may come from the feedback generated by one's own behavior, the observed feedback given to others, or internal incentives (e.g., self-standards). As observational learning occurs via symbolic representations, the effects are believed to be potentially long-lasting.

Because of humans' capacity to think symbolically, mediated narratives are especially useful vehicles to achieve observational learning and increase self-efficacy to perform given behaviors (Bandura, 2001). Drawing from the

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above theoretical explication, SCT suggests that, in essence, for mediated content to positively affect audience members' behaviors, the audience must pay attention to attractive or similar models performing relevant behaviors. Models engaging in positive behaviors should be positively reinforced, whereas those engaging in (p. 295) negative behaviors should be negatively reinforced (Austin & Meili, 1994; Bandura, 2001). Thus, a character who is rewarded for his or her behavior serves to positively motivate and reinforce that behavior in the mind of the viewer, whereas behaviors for which characters are punished are negatively reinforced (Bandura, 2004). Bandura further argues that identification with a character (the process of temporarily taking on the role of that character) and perceived similarity may enhance this effect.

Beyond the potential for modeling, more recent theorizing in narrative persuasion has pointed to the ways in which narratives may reduce message resistance. First came the notion of *transportation*, or absorption into a story such that one loses track of the real world and experiences the unfolding events in the story (Gerrig, 1993; Green & Brock, 2000). Transportation is argued to minimize resistance to persuasion as the audience's focus on the plot reduces their motivation and/or ability to counterargue the message position. Building from this notion, Slater and Rouner (2002) proposed the extended elaboration likelihood model (E-ELM), which, although based on the ELM (described in a preceding section), was developed specifically to address how individuals process narrative messages. The E-ELM posits that, compared with more overt persuasive appeals, narrative messages foster greater absorption and identification with characters, both of which suppress counterarguing with the underlying persuasive subtext. This enhanced state of engagement is dependent upon the appeal of the storyline, the quality of production, and the "unobtrusiveness of persuasive subtext" (Slater & Rouner, 2002, p. 178). In this way, using a narrative structure may lead to effective persuasion by reducing viewers' motivation to generate counterarguments while viewing.

There is certainly evidence that transportation into mediated entertainment messages relates to story-consistent attitudes (e.g., Kennedy, Turf, Wilson-Genderson, Wells, Huang, & Beck, 2011; Murphy, Frank, Moran, & Patnoe-Woodley, 2011). And although some research supports the notion that the transportation-persuasion link is a function of reduced counterargument in the context of written narratives (Green & Brock, 2000), little is known about the relationship between absorption and counterarguing in the context of audiovisual media (Hinyard & Kreuter, 2007). Indeed, evidence on this point is mixed. Slater, Rouner, and Long (2006) found that watching a television drama about controversial issues (e.g., gay marriage, the death penalty) led to greater support for related public policies with very minimal counterarguing, whereas Moyer-Gusé and Nabi (2010) found transportation *positively* related to participants' self-reported counterarguing of a television drama regarding teen pregnancy. Thus, the effect of transportation on counterarguing is still somewhat of an open question.

Most recently, building on the strengths of both SCT and E-ELM, the entertainment overcoming resistance model (EORM) (Moyer-Gusé, 2008) focuses on how different features of media narratives (e.g., identification, parasocial interaction, perceived persuasive intent) can overcome a range of sources of persuasive resistance. For example, the EORM contends that narrative messages may reduce psychological reactance by diminishing viewers' perception that the message intends to persuade. Similarly, including characters with whom viewers have a parasocial relationship may make the underlying persuasive content feel less authoritative, thus also reducing reactance. Further, the EORM posits that a narrative message can increase perceptions of vulnerability to some threats via identification with characters, and thus motivate positive attitude and behavior change. Indeed, Moyer-Gusé and Nabi (2010) found evidence offering support for each of these claims, although the perceived vulnerability-identification association emerged only after some time had passed, which is consistent with other research on entertainment media and sleeper effects (e.g., Appel & Richter, 2007; Nabi, Moyer-Gusé, & Byrne, 2007; Moyer-Gusé et al., 2011). Further, evidence suggests that identification with main characters—another form of absorption into the narrative—reduced counterarguing with the underlying message (Moyer-Gusé & Nabi, 2010; Moyer-Gusé, Chung, & Jain, 2011). In sum, a few studies have tested portions of the EORM, finding support for several predictions of the model. By linking these message-based processes to various forms of resistance to persuasion, the EORM offers insight for message designers to reduce a range of barriers to persuasive success.

In sum, considering the unique ways in which narrative media messages can overcome various forms of resistance to persuasion appears to be a useful way to understand EE effects and perhaps persuasion effects more generally. Future research should continue to explore the mechanisms of narrative persuasion effectiveness. Specifically, given that most EE research has focused on dramatic narratives, the persuasive effects of other genres, such as comedy or mystery programming, should be considered. (p. 296) Entertainment-education research could also

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benefit from a focus on identifying the right balance of entertainment and education content to maximize the effectiveness of EE messages. As noted, one limitation of EE is the potential for misinterpretation, in part stemming from the underlying persuasive message being too subtle or open to interpretation. One way this has been addressed in practice is by including an epilogue to underscore the intended message. However, little is known about how this strategy may alter EE effects. Indeed, several of the propositions of the EORM as well as the EELM depend on persuasive intent remaining in the background. Future research should examine the message features necessary to ensure that the underlying persuasive message is clear without coming across as didactic or interfering with the narrative experience.

## Product Placement

Finally, we wish to address one more instance of a subtle form of persuasion in the media: product placement. Although definitions vary across the literature, product placement generally refers to the purposeful inclusion of a brand within some entertainment media content (Karrh, 1998; van Reijmersdal, Neijens, & Smit, 2009). Typically, this placement is bought or bartered by an advertiser to gain attention for a brand or to affect brand selection, and can be classified along three dimensions: visual, auditory, and plot connection (Russell, 1998). The visual dimension refers to the visual appearance of the brand on the screen (e.g., the number of times the product is shown, the relative size of the product on the screen, the positioning in the foreground or background). The auditory dimension addresses whether the brand is mentioned in dialog (e.g., how frequently the brand is named, emphasis placed on the brand itself, which character refers to the product). The third dimension, plot connection, involves how well-integrated the brand is into the message's storyline.

Although product placement has become increasingly popular as an advertising tactic, the research on its effectiveness is still rather diffuse and disconnected (e.g., Karrh, 1998; Balasubramanian, Karrh, & Patwardhan, 2006; van Reijmersdal et al., 2009). This discussion highlights the major trends in product placement research, focusing specifically on the dependent measures used to assess effectiveness, their interrelationships, and the psychological mechanisms used to explain them.

Early product placement research focused primarily on explicit memory of the placed brand as a measure of effectiveness (perhaps because of the centrality of ad recall in the advertising literature.) Explicit memory refers to what a viewer can consciously recall seeing (Law & Braun-LaTour, 2004), and research suggests that explicit memory is enhanced by the prominence of the product placement within the entertainment message (Gupta & Lord, 1998; Law & Braun, 2000; Yang & Roskos-Ewoldsen, 2007). For example, placements that are well integrated into the plot are more prominent and therefore more likely to be remembered than those that are tangential (Yang & Roskos-Ewoldsen, 2007). Similarly, placements are more memorable when a brand is depicted visually and verbally as opposed to just one or the other (Law & Braun, 2000). In these ways, more prominent placements are more likely to be explicitly remembered by audience members.

Although prominent placements are more likely to be recalled, importantly, this does not necessarily enhance brand choice. For example, Yang and Roskos-Ewoldsen (2007) in examining three levels of prominence (background, used by main character, connected to plot) found that although the more prominent placements were more readily recognized afterward, they had no effect on brand choice. In fact, explicit recall for the placement can actually lead to more negative attitudes toward the brand. Similarly, Law and Braun (2000) found that product placements that were depicted visually but not mentioned (i.e., less explicit), had a greater effect on brand choice than those that were depicted audiovisually or those that were mentioned verbally (i.e., more explicit), even though the visual-only placements were least likely to be explicitly recalled. That is, the least memorable placement was the one that most influenced brand preference.

Similar results have been found regarding connection to plot and placement within highly liked programs. Russell (2002) found that when a placement seemed out of place (such as a verbal reference to a product that is not well integrated into the plot), it was more likely to be recalled but less likely to enhance persuasion, perhaps because such placements are perceived by the audience as unnatural. Relatedly, Cowley and Barron (2008) found that viewers high, but not low, in program liking experienced less supportive attitudes in response to product placement within that program, arguably because fans are likely to pay more careful attention to the show, making them better able to explicitly recall the placement and be more conscious of the persuasive intent.

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(p. 297) Taken together, these results show that more memorable placements do not necessarily translate into greater persuasion and indeed may interfere with persuasive effect. This apparent disjuncture may be explained based on the constructs of awareness of persuasive intent and cognitive resistance. More specifically, a prominent placement is more likely to activate viewers' cognitive defenses against persuasive messages. When a viewer notices a placement and elaborates on its persuasive intent, it may induce greater irritation and/or counterarguing, thus leading to greater resistance (e.g., Friestad & Wright, 1994). More prominent placements, because they are more likely to be noticed, can lead to this sort of elaboration and counterarguing. In other words, it is because the audience notices the placement that they are able to resist its influence. Conversely, if the audience is exposed to the product placement in more subtle ways (e.g., visual depiction only, brief screen time/mention, smooth integration into the plot), the product has been primed and thus made cognitively accessible to the viewer, but because of the limited awareness of the source of its activation, the viewer is less motivated and/or able to control its influence on their choices. Thus, by increasing the cognitive accessibility of a brand, more subtle product placements may increase the likelihood that it will be chosen. Indeed, research supports this notion that exposure to a placement increases brand accessibility (e.g., Yang, Roskos-Ewoldsen, Dinu, & Arpan, 2006; Yang & Roskos-Ewoldsen, 2007).

In essence, more prominent product placements increase the likelihood that an audience member will be aware of the persuasive intent and thus be more motivated and/or able to resist in terms of product choice. Conversely, less prominent placements, although less likely to be recalled, can lead to greater product selection because of cognitive priming and accessibility. Future research would certainly benefit from comparing the relative effectiveness of product placement relative to traditional advertising forms. In addition, understanding more clearly the conditions under which product placement influences attitudes and behaviors would be useful. Further, it would be helpful to consider more directly the way in which media features and processes influence product placement effectiveness. For example, does transportation encourage or impede a product's perceived prominence within a story and thus, in turn, influence the persuasive impact of the product placement? Additionally, some research has shown that when brands are used by liked characters, they are evaluated more favorably (d'Astous, & Chartier, 2000; Yang & Roskos-Ewoldsen, 2007). Given what is known about social cognitive theory, might liked characters' use of products increase audience liking for those products such that product prominence in the message might turn out to be a productive, rather than counterproductive, factor? Similarly, does liking a movie translate into liking products placed within them in ways that undermine the resistance associated with awareness of product placement? In sum, considering more directly the media effects variables relevant to the entertainment context together with the psychological process associated with product placement should allow both lines of research to move forward in meaningful ways.

## Conclusion

Clearly a wide range of psychological perspectives have been applied to the context of media-based persuasion. Some of these perspectives (e.g., cognitive response models, expectancy value models, fear appeals) capture quite well the influence process associated with overt persuasive attempts in a very wide range of contexts, whereas others (e.g., framing, narrative, product placement) help capture the subtleties associated with persuasive messages conveyed in more specific media forms or contexts. And combined, both sets of literature make it quite clear that understanding what is necessary for successful persuasion requires understanding (and avoiding) the conditions of resistance to persuasion. Thus, future research will benefit from attention to the structure and design of messages that foster attention without simultaneously triggering psychological resistance. Closer consideration of issues related to emotional arousal, visual communication, transportation, and identification across these various contexts, we believe, will be critical to understanding this delicate balance. Especially given the extraordinary technological developments that are now influencing the creation, conveyance, and receipt of mediated persuasive messages, it is essential that scholars consider more fully the ways in which message construction interacts with psychological orientation to impact information processing and decision making. The marriage of psychological theory and media effects has been a fruitful one to this point, and their continued interrelationship will be critical to understanding more fully persuasion processes in the new media age.

## Questions for Future Research

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How will the assumptions of the ELM and other cognitive response models hold up in light (p. 298) of new forms of persuasive message design and delivery?

How does the construction of media-based persuasive messages designed to capture attention influence expectancy value-based calculations?

Under what conditions are positive emotional appeals effective and how do they compare with the effectiveness of negative emotional appeals?

What factors moderate the effectiveness of gain versus loss frames?

What entertainment message features link to what psychological states such that resistance to persuasion is minimized?

How does product placement effectiveness compare with the effectiveness of traditional forms of advertising?

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### Social Influence in Virtual Environments

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### Abstract and Keywords

Four topics relevant to the operation of social influence in virtual media-based environments—particularly digital ones—are discussed: concepts, theory, the nature of social interaction, and new forms of social influence. The summary speculates on the future of virtual technology for scientific inquiry and applications regarding social influence processes.

Keywords: agency, communicative realism, consciousness, context, grounded versus virtual reality, immersion, response systems, self-relevance, virtual social influence

### Introduction

In *Principles of Topological Psychology*, Kurt Lewin (1936) emphasized that understanding human social behavior necessitates weighty consideration of the environment in which it occurs. Gordon Allport's (1954) enduring definition of social psychology as the study of how the thoughts, feelings, and behaviors of individuals are influenced by the “actual, imagined, or implied presence of others” opened scholars’ minds to the fact that social influence processes are not limited to the actual physical presence of others, but may instead be implicit or even fictional. Although neither of these scholars likely foresaw modern digital virtual media technology as the important arena for social interaction that it has become, both scholars specified essential requirements for understanding social influence within them. Regardless of their natures, physical or not, both person and environment must be taken into account.

In this chapter, four topics relevant to the operation of social influence in virtual media-based environments—particularly digital ones—are discussed: concepts, theory, the nature of social interaction, and new forms of social influence. The summary speculates on the future of virtual technology for scientific inquiry and applications regarding social influence processes.

### Concepts

Today, the modifier *virtual* conjures visions of digital technology applied to whatever concept it modifies—specific worlds or environments, animated representations of artificial or human intelligence such as agents (i.e., digital algorithms generally represented as humans) and avatars, defined contexts such as games or social networks, and so on. However, the meaning of “virtual X”—that which is not real but displays the essential qualities of its modificand—is not limited to any particular technology. In fact, “virtual X” need not require any technology at all. That humans have virtual experiences endogenously via dreams and daydreams is indisputable. Most dream researchers report that people dream four to six times per night on average. Klinger (2009) has reported that individuals’ minds wander an average of 2,000 times per day, occupying approximately 30% of their waking hours.