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The Role of Comprehension Processes in Communication and Persuasion

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The impact of media communications on attitude formation and change clearly depends on how the messages are comprehended. Although the role of comprehension processes in communication and persuasion has a long history in social psychology (cf. Hovland, Janis, & Kelley, 1953; McGuire, 1964, 1968, 1972; Wyer, 1974), it has received little attention in media research. In this article, we discuss both theory and research that have implications for how the comprehension of communication at early stages of processing can impact attitudinal responses to media communications, including print and broadcast advertising, narrative television programming, newspaper articles, political messages, and donation appeals.

In *The Portrait of the Artist as a Young Man*, James Joyce noted that only a fraction of the meaning an artist intends to convey in a painting is ever transferred to the viewers, and the remainder of the meaning may remain forever undetected. At the same time, the viewer often extracts meaning from the painting that the artist did not intend to transmit. So it is with communication in general, whether interpersonal or mass mediated.

The factors that influence the interpretation of a communication are obviously not restricted to the semantic content of the communicator's verbal utterances. They include facial expressions, tone of voice, bodily movements, and nonverbal behaviors of which the communicator is often unaware. The situational context in which a communication occurs can also have an impact on its interpretation. Characteristics of the recipients themselves (their purposes for using the information, their prior knowledge of the com-

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munication's referents, their attitude toward the position being advocated, and the cognitive strategy they use to extract meaning from the message) can also play a role. These factors can influence the comprehension of both face-to-face conversations and the communications that are transmitted in the media, and this comprehension, in turn, can affect recipients' attitudes toward the messages' referent.

The relation between recipients' interpretation of a message and the attitude they form on the basis of it is undoubtedly bidirectional. Recipients' a priori attitudes toward the position advocated in a message can be a determinant of their cognitive responses to the message (e.g., elaborations of the message content and counterarguments against its validity) as well as a consequence. In this article, however, we focus on the way in which the comprehension of a message influences recipients' perceptions of the message's implications, their cognitive responses to it, and the attitudes that they form on the basis of these perceptions. Moreover, we focus less on the literal meaning of a communication than on the cognitive processes that surround the extraction of this meaning.

The importance of considering these processes in construing the impact of communication was called to social psychologists' attention by McGuire (1964, 1968, 1972), and elaborated by others. Greenwald (1968), for example, demonstrated that message recipients' attitudes are determined less by the implications of the message content that they can recall than by their cognitive responses to the message at the time they encounter it. Greenwald's demonstration stimulated numerous analyses of the cognitive reactions to a message (elaborations, counterarguments, etc.) that mediated its impact (McGuire, 1964; Petty & Cacioppo, 1986; for reviews, see Petty, Priester, & Wegener, 1994; Petty & Wegener, 1998; Wegener & Petty, 2013). However, this research has rarely attended to the comprehension processes that precede these reactions and stimulate their occurrences.

This article reviews these processes. To provide a general framework that is useful in interpreting them, we assume a multiple-stage model of information processing that has its origins in the early research and theorizing by McGuire (1968, 1972) and was more recently elaborated by Wyer and Srull (1989; Wyer, 2004). Specifically, we assume that recipients of a message first construe its literal meaning, based on the configuration of verbal and nonverbal features that compose it. Then, if this interpretation deviates substantially from expectations, they may construe the intended meaning of the communication based on their perception of the purpose for which the communication is being transmitted, their knowledge of the communication's topic, and the situational context in which the communication occurs. The comprehension processes that occur at the first stage can often be performed automatically and independently of the social context in which the message is encountered. The comprehension of information at the second stage, however, requires cognitive deliberation.

The first section of this article focuses on the first stage of comprehension. We devote primary attention to an issue of particular importance in understanding the effects of media communications, namely, the manner in which visual and verbal features of a message combine to influence the comprehension of its implications. We also discuss how these features are encoded into memory (either independently or as a narrative) and their effects on judgments of their referent. Finally, we consider the influence of general dispositions to comprehend information either abstractly or concretely, and to focus on the positive or negative features described in the information.

In the second section of the article, we discuss the second stage of comprehension. Here, we concentrate on the implicit principles that govern the exchange of information in a social context and their effect on the construal of a communication's intended meaning. In doing so, we note implications of the comprehension processes we discuss for the way that media communications are interpreted and how their interpretation influences recipients' attitudes and beliefs. A comprehensive review of all research that might bear on the issues at hand is well beyond the scope of this article. We therefore draw on a subset of this research, largely conducted in our own laboratories, that exemplifies the phenomena we consider.

THE ROLE OF VISUAL IMAGERY IN COMPREHENSION

Communications can be verbal, nonverbal, or both. In each case, they are likely to be comprehended in terms of previously acquired concepts and knowledge. This can occur automatically. For example, a native speaker of English is likely to find it difficult not to understand the statement "the boy kicked the ball." When a stimulus is pictured or directly experienced, a nonverbal representation of it (i.e., a visual image) is likely to be formed and stored in memory. However, a verbal description of the stimulus can also elicit a visual image in the course of comprehending it, and this visual representation may likewise be stored in memory.

The role of visual imagery is of obvious importance in understanding the impact of media communications. Advertisements and other persuasive appeals are likely to contain both pictures and verbal information. How this information is conceptually integrated is surprisingly unclear. (cf. Costley & Brucks, 1992; Edell & Staelin, 1983; Miniard, Bhatla, Lord, Dickson, & Unnava, 1991). The following sections address this possibility.

General Considerations

The role of visual imagery in the comprehension of verbal statements was implicit in a conceptualization of prose comprehension by Kintsch and van

Dijk (1978; see also Johnson-Laird, 1983, 1989), and was elaborated by Wyer and Radvansky (1999; Wyer, 2004). The latter authors assume that information is initially coded into memory in the modality in which it is received; that is, verbal statements are coded in terms of semantic concepts whereas pictures are coded visually. However, if the verbal information about an event or state is situationally or temporally constrained (if it occurs in a specifiable, although not necessarily specified, time and place), recipients typically construct a mental simulation of it, or *situation model* (Radvansky & Zacks, 1991; for a review, see Zwaan & Radvansky, 1998). The representation of “a boy kicked the ball” can have both (a) a verbal component whose features are coded in terms of the semantic concepts that were initially assigned to them and (b) a visual image that denotes the relations among the components. The image component is unlikely to contain all of the features that might be contained in a picture (e.g., the boy’s hair color). At the same time, unspecified features that are necessary for constructing an image of the event (e.g., the type of ball being kicked) might be spontaneously added to the representation that is formed (Loftus & Palmer, 1974; Rumelhart, 1984; Wyer, 2004).

Not all representations of a verbal statement have an image component, of course. If the referents of a statement are not imageable (e.g., “honesty is the best policy”) or are not temporally and situationally localized (e.g., “the boy owns a ball”), the statement is coded semantically and a situation model is not formed of it (Radvansky, Wyer, Curiel, & Lutz, 1997).

At the same time, not all representations of visual information have a verbal component. In fact, the visual image that is formed from a picture may not be coded verbally unless this coding is necessary to attain an objective that requires it. The asymmetric processing of pictures and verbal statements was confirmed by Colcombe and Wyer (2001; see Wyer, 2004); that is, verbal descriptions of situation-specific events were spontaneously coded visually at the time they were comprehended and were, consequently, easy to verify later on the basis of a picture. In contrast, pictures of the same events were initially coded visually but a linguistic coding was not spontaneously performed and so more time was required to verify them on the basis of a verbal statement. These results suggest that information conveyed in pictures may often be easier to comprehend than information that is conveyed semantically. To this extent, pictures may have relatively more persuasive effects on attitudes toward the object being portrayed (Winkielman & Cacioppo, 2001; for a review of the effects of ease of processing, see Schwarz, 2004).

General Effects of Imagery in Comprehension

Although visual images stored in memory cannot be directly observed, there is neurological evidence of their existence (Childers & Jiang, 2008; Kosslyn,

1988; Kosslyn et al., 1999). Less direct evidence of their role in comprehending verbal information is compelling. For example, Bransford, Barclay, and Franks (1972) found that apparently nonsensical statements (e.g., “The haystack was important because the cloth would rip”) were poorly recalled when presented in isolation. Their recall was greatly improved, however, when each sentence was preceded by a single word (“parachute”). The word apparently cued previously acquired knowledge that led a visual image to be formed of a situation to which the sentence applied (e.g., a parachutist landing in the hay rather than in a tree) and this image permitted the statement to be understood and later remembered. In a quite different study (Glenberg, Meyer, & Lindem, 1987), participants read a story about a person who engaged in a series of activities. One version of the story was introduced by the statement, “John put on his sweatshirt and went jogging” and a second version began with “John took off his sweatshirt and went jogging.” The sweatshirt was never again mentioned in the story. Nonetheless, participants in a subsequent recognition memory task were quicker to verify the presence of “sweatshirt” in the story in the first condition than in the second. Apparently, participants in the first condition formed a visual image of John wearing the sweatshirt that persisted throughout the narrative, thereby making it salient at the time of judgment. These and other examples (e.g., Black, Turner, & Bower, 1979; Garnham, 1981) suggest that visual images are formed spontaneously in the course of comprehending verbal event information.

Individual Differences in Image Formation

Individuals differ in the extent to which they spontaneously construct visual images (Childers, Houston, & Heckler, 1985). Jiang and Wyer (2009) showed that participants with a chronic predisposition to construct visual images (visualizers; see Childers et al., 1985) found it more difficult to comprehend verbal statements when the statements elicited images from an unfamiliar visual perspective. In a study with more direct implications for the effects of visual imagery on attitudes (Jiang & Wyer, 2009), participants reported their emotional reactions to statements describing both favorable and unfavorable events. In some cases, the events were described from the perspective of someone outside the location in which the events took place (e.g., “The woman went into the room and sang a beautiful song,” “The terrorist went into the restaurant and shot three people,” etc.). In other cases, they were described from the perspective of someone in the location (“The woman came into . . .,” “The terrorist came into . . .,” etc.). Chronic visualizers reported having more extreme emotional reactions in the second case than in the first, whereas chronic verbalizers responded similarly in both cases.

The Role of Visual Imagery in Comprehending Media Communications

To reiterate, communications often consist of both visual and verbal information. Advertisements, for example, typically provide both verbal descriptions of a product and pictures that show its use in different contexts. In this case, recipients must integrate the implications of the different types of information. Their difficulty of accomplishing this may depend on the processing strategy they employ.

In a study by Jiang, Steinhart, and Wyer (2010; see Wyer, Hung, & Jiang, 2008), for example, participants received verbal descriptions of the features of a computer mouse. Some participants were told that the features described a standard mouse with which they were familiar. Others were told that it pertained to a trackball mouse with which they were unfamiliar. Finally, the verbal descriptions were either accompanied by a picture of the product or not. Participants with a disposition to form visual images were expected to try to construct a visual representation of the product that they could use in mentally organizing the product's features. When the mouse was familiar, a preexisting visual representation could easily be retrieved from memory and used for this purpose. When the mouse was unfamiliar, however, an image of it was difficult to construct and so an evaluation of it was difficult. Results summarized in Table 1 confirm this assumption. In the absence of a picture, visualizers evaluated the trackball mouse less favorably than the standard mouse. However, presenting a picture of the trackball mouse increased their evaluation of it to a level similar to that of the standard mouse. In contrast, verbalizers evaluated the two products similarly when pictures of them were not presented. Whereas a picture of the unfamiliar mouse facilitated visualizers' construction of an image of the target and increased their evaluations of it, verbalizers apparently treated the picture of the trackball mouse as an additional piece of information that they considered somewhat unfavorable. Consequently, presenting a picture decreased their evaluations.

Transitory situational factors that influence the disposition to form visual images can also have similar effects (Jiang et al., 2010; see Wyer et al., 2008). For example, recent experiences that require the use of a visual or verbal

TABLE 1 Mean Product Evaluations as a Function of Product Familiarity, the Presence of a Picture, and Processing Strategy (Based on Data From Jiang et al., 2010)

	No picture		Picture	
	Visual strategy	Verbal strategy	Visual strategy	Verbal strategy
Familiar mouse	5.02	5.00	5.33	5.82
Trackball mouse	3.63	5.02	5.21	4.08

processing strategy can induce a mindset that generalizes to other situations in which the strategy is applicable (Wyer et al., 2008).

Furthermore, note that when chronic differences in the disposition to form visual images are not controlled, the influence of visual imagery on the comprehension of verbal information is quite apparent (Black et al., 1979; Bransford et al., 1972; Glenberg et al., 1987). This finding suggests that chronic visualizers are more common in the general population than chronic verbalizers are, and so the effect of forming visual images is likely to be evident when individual differences are not considered.

Enduring consequences of visual representations. As Jiang and Wyer's (2009) results suggest, visual representations of information can elicit strong emotional reactions (see also Nisbett & Ross, 1980). Moreover, if these representations are stored in memory, they may be easy to retrieve and have greater impact than verbally coded information. In a study by Reyes, Thompson, and Bower (1980), participants read a description of a court case in which a man was accused of drunk driving after leaving a party. A piece of evidence that favored the prosecution indicated that the man had either (a) bumped into a table and knocked over a dish or (b) bumped into a table at the party and spilled a dish of guacamole dip on the host's white shag rug. Correspondingly, a piece of defense evidence indicated that after leaving the party, the man either (a) was able to jump out of the way of a car or (b) was able to jump out of the way of a shiny red Volkswagen. The substantive implications of the evidence were the same in both cases. Thus, when participants judged the defendant's guilt immediately after receiving the information, their judgments were similar regardless of how the evidence was described. After a delay, however, their judgments were determined by which evidence had been conveyed more vividly and, thus, was easier to recall.

In the context of media communication, this finding suggests that the information that elicits visual images of an event or situation in the course of comprehending it can have an increasing effect on attitudes toward the information's referents over time. Moreover, this can occur even though the features that give rise to its vividness are quite irrelevant to its implications for the attitude being formed.

Enduring effects of watching television. A corollary of the assumption that visual images are easier to recall than verbally coded representations is that information that provides visual images is more likely to be retained in memory than is the source of this information. The implications of this assumption for responses to media communications have been demonstrated by Shrum and his colleagues (Busselle & Shrum, 2003; O'Guinn & Shrum, 1997; Shrum & O'Guinn, 1993; Shrum, Wyer, & O'Guinn, 1998); that is, events that appear frequently on television and provide visual images are likely to be more accessible in memory than the situational context in which they were encountered. Thus, if individuals are asked to estimate the incidence of

the events in daily life, they may sample memories of the events they have seen on television without considering their source, leading the events to have a disproportionate influence on judgments. Consequently, individuals' estimates of the frequency of events or situations that are overrepresented on television (e.g., the incidence of violent crimes, doctors, indications of affluence, etc.) increase with the amount of television they watch (a "cultivation" effect; Shrum, 1995).

More direct evidence of this process was demonstrated in two studies that manipulated the salience of memory source characteristics (Shrum et al., 1998). In some conditions, participants first estimated the incidence of crime, materialism, and so on, and then provided estimates of their frequency of television viewing. Under these conditions, in which participants' television viewing habits were not made salient prior to providing their perceptual estimates, the expected cultivation effect was observed. In other conditions, however, participants' television viewing habits were first made salient either by measuring their television viewing frequency prior to their perceptual estimates or by explicitly noting that television viewing might influence judgments. In these conditions, the cultivation effect was eliminated. These results suggest that people generally do not discount television-related information when making societal estimates. They do so only when the source of the information is called to their attention or they are motivated, either situationally or chronically, to provide accurate judgments (Shrum, 2001). Thus, this loss of source information increases cultivation effects.

Effects of exposure to advertisements. In evaluating the effects identified by Shrum et al. (1998), however, an additional consideration arises. That is, the ease with which individual experiences come to mind is also a function of their uniqueness (see Shrum, 1995, for a discussion of this and other characteristics of television programs that influence exemplar accessibility). As Hamilton and Gifford (1976) demonstrated several years ago, individuals overestimate the incidence of events that occur infrequently. This tendency suggests that in addition to the actual frequency of exposure to items of a given type, the uniqueness of these items, and thus the likelihood that visual images are formed of them, can also play a role.

These effects, however, can also depend on individuals' a priori interest in estimating the number of instances that occur. In a study by Briley, Shrum, and Wyer (2007), African-American and European-American participants viewed a number of clothing ads of the sort often encountered online or in magazines. The total number of ads that were presented (20 vs. 40) and the proportion of ads that showed Black versus White models (20 vs. 80) were manipulated. Participants later estimated the numbers of Black and White models that were shown. European Americans, who had no a priori interest in the ads, based their estimates on the ease with which

individual instances of the ads containing Black models came to mind, which was greater when relatively few of these models had been presented. Therefore, they overestimated the number of Black models when the actual number presented was low. As the number of Black models increased, however, the magnitude of their overestimation decreased and their judgments became more accurate. African Americans, however, appeared to have an a priori interest in ensuring that Black models were adequately represented in the population of ads they were shown, and attempted to perform an online count of the number of these models as they were presented. As a result, they estimated the actual number fairly accurately when only a few were presented. However, they underestimated the number when the actual incidence of Black models was greater and harder to count.

In combination, the effects of employing these different computational strategies are ironic. On the one hand, European Americans, who had little personal interest in the number of models they saw, typically employed an availability heuristic (Tversky & Kahneman, 1973) in estimating this number. Consequently, they overestimated the number of Black models when the number was small but became more accurate as the number increased. African Americans, on the other hand, who had an a priori interest in making accurate estimates, were fairly accurate when only a small number were presented, but became less accurate as the actual number increased.

Other considerations. The aforementioned research suggests that visual image-based representations of information have a disproportional influence on processing. These images may not only have direct effects on judgments but also can affect the comprehension of other information that is encountered later. In a study by Wyer et al. (1991), participants first viewed a videotaped nonpolitical speech by a political candidate. Then, either immediately or 24 hours later, they listened to a radio program that reviewed the candidate's positions on a number of political and social issues that conveyed either a conservative or a liberal ideology. Viewing the candidate's speech, which had little substantive content, presumably led participants to form a global impression of him. When they viewed the speech several days before receiving the issue information (which was, thus, not salient at the time participants encountered the candidate's issue stands), participants based their evaluations of the candidate on their agreement with these stands independently of the stands' ideological implications. When the speech was presented a short time before receiving the issue information, however, it induced a disposition to use global criteria in evaluating the candidate's issue positions. Consequently, participants based their evaluations on the similarity of the candidate's ideology to their own, and their agreement with the individual positions espoused by the candidate had little impact.

NARRATIVE-BASED REPRESENTATIONS OF VERBAL INFORMATION

When several statements are conveyed pertaining to events that occur in a temporal sequence, the representation that individuals construct of the statements may take the form of a narrative, or *episode model*, and may be stored in memory as a whole. Several theoretical formulations have been proposed to account for the construction of these representations, beginning with the conceptualization by van Dijk and Kintsch (1983; for a summary of more recent formulations, see Radvansky & Zacks, 2011; Zwaan & Radvansky, 1998). For example, the event-indexing model proposed by Zwaan, Langston, and Graesser (1995) postulates several features of events that can lead them to become linked to one another (e.g., time, space, causality, intentionality, and agent). When these features are not provided, separate representations of the events are formed (Radvansky et al., 1997).

The way that items about a person or object are represented can have important effects on their impact. Individuals who receive several pieces of information about a target and wish to construe their implications could use at least two different strategies. On one hand, they might evaluate the implications of each information item independently and then combine these mechanistically (Anderson, 1981; Fishbein, 1963). If the individual information items are temporally and thematically related, however, they might construct a narrative representation (i.e., an episode model) of the sequence as a whole and base their judgments on the implications of this representation independently of the implications of any particular item contained in it.

The effects of using these different comprehension and integration strategies were identified by Pennington and Hastie (1988, 1992) in research on jury decision making. In some (narrative-order) conditions, individuals received evidence about a crime in the order it became relevant in the course of comprehending the sequence of events that occurred (the events leading up to the incident, the crime itself, and its aftermath). In other (witness-order) conditions, they received the same information organized by the witness who provided it. When the prosecution and defense testimonies were each presented in a different order, participants' verdicts favored the side that was presented in a narrative. When they were presented in the same order, participants were equally likely to favor the prosecution and defense but were more confident of their judgment when the testimonies were in narrative order.

The Role of Visual Imagery in Narrative Comprehension

The assumption that individuals form episode models of events that are temporally and thematically related has implications for the impact of pictures and visual images on attitudes. This impact was identified by Adaval

and colleagues (Adaval, Isbell, & Wyer, 2007; Adaval & Wyer, 1998). Participants received a brochure describing the events in the career of a political candidate (Adaval et al., 2007). The information was either favorable or unfavorable. In one condition, the information was conveyed in a narrative that indicated the temporal sequence in which the events occurred. In a second condition, it was presented in an ostensibly unordered list. Finally, the information was either accompanied by a picture of the candidate or not.

The effects of this information on evaluations of the candidate are shown in Table 2. When the information was conveyed in a narrative, participants formed a single episode model of the candidate, and a picture of him provided cognitive glue that increased the coherence of this representation. Consequently, the picture increased the extremity of participants' evaluations of the candidate. When the information was conveyed in a list, however, individuals identified the semantic implications of each event as it was presented and updated their evaluation of the candidate by integrating these implications with those of the events they saw earlier. In this case, a picture of the candidate, which was irrelevant to the semantic comprehension and integration that participants employed, interfered with this semantic integration and decreased the impact of the information rather than increasing it.

The impact of visual imagery in narrative-based processing is of particular interest in understanding the effects of media communications. Research by Green and Brock (2000, 2002) indicates that when individuals become transported into a story they read or encounter in the media, they experience stronger emotional reactions to the situation and the story has greater effect on beliefs and attitudes than it might otherwise. This effect could partly result from the increased influence of visual imagery on the construction of the representations, as well as other processes that may occur during narrative transportation (increased attention, involvement, etc.).

TABLE 2 Mean Impressions of Politician and Feelings Elicited by the Verbal Information as a Function of Information Favorableness, Presentation Format, and the Presence of Pictures (Based on Data From Adaval et al., 2007)

	Favorable information		Unfavorable information	
	Narrative	List	Narrative	List
Impression of politician				
Pictures	2.70	1.70	-2.40	-1.20
No pictures	1.78	2.80	-0.40	-1.20
Relative favorableness of feelings elicited by verbal information ^a				
Pictures	2.70	2.80	-5.20	-1.70
No pictures	2.11	3.40	-0.60	-3.40

^aScores are the difference between estimates of positive feelings elicited by the information and negative feelings elicited by it.

Enduring Effects of Narrative-Based Television Programs

The effects of entertainment (narrative) television consumption on attitudes and values are also consistent with this conclusion. In a series of studies, Shrum and his colleagues (for reviews, see Shrum, 2009; Shrum & Lee, 2012) showed that frequent viewing of television programming (particularly narrative programming) leads viewers to adopt the overarching message that is embedded in the programs. For example, a common theme that runs through much American narrative television programming pertains to materialism and its supposed virtues (e.g., money and possessions bring happiness, are indicators of success, etc.). Consistent with the proposition that viewers cultivate the dominant narrative messages of television programs, heavy viewers of television programming reported more accessible materialistic attitudes (Shrum, 1999) and espoused more materialistic values than light viewers did (Shrum, Burroughs, & Rindfleisch, 2005).

These effects were also confirmed in an experiment that manipulated the materialistic messages that viewers watched (Shrum, Lee, Burroughs, & Rindfleisch, 2011, Study 1). As part of a study ostensibly on advertising effectiveness in a realistic viewing context, participants watched a 19-minute segment of a movie that was purportedly to be shown on television, followed by 2 minutes of the ads they were supposed to evaluate (decoys for the cover story). Participants in one (high-materialism) condition watched a clip of the movie *Wall Street*, a movie that reinforces the link between possessions and happiness and success. Participants in a second, low-materialism condition watched a clip of *Gorillas in the Mist*, a film with an underlying theme of altruism and self-sacrifice. After viewing the program, participants indicated their level of materialism and the extent to which they were transported during viewing.

The relative effects of the television message and narrative transportation are shown in Figure 1. The manipulation of the materialism message had the expected effect. *Wall Street* viewers expressed more support for materialistic values than did *Gorillas in the Mist* viewers. However, this was true only for those who reported having been transported into the narrative during their viewing experience. In this case, relatively higher levels of narrative transportation were required for the message contained in the short narrative clip to have a persuasive impact.

In considering the effects of narrative transportation that result from viewing entertainment television, two points are worth noting. First, the messages conveyed in most television programs are not explicit. Therefore, viewers are unlikely to think about them consciously while viewing the programs, as this would diminish their enjoyment of the program. As a consequence of their lack of awareness of the intent of the information they are processing, however, they are unlikely to mount any defense against the potential effects that the information might have.

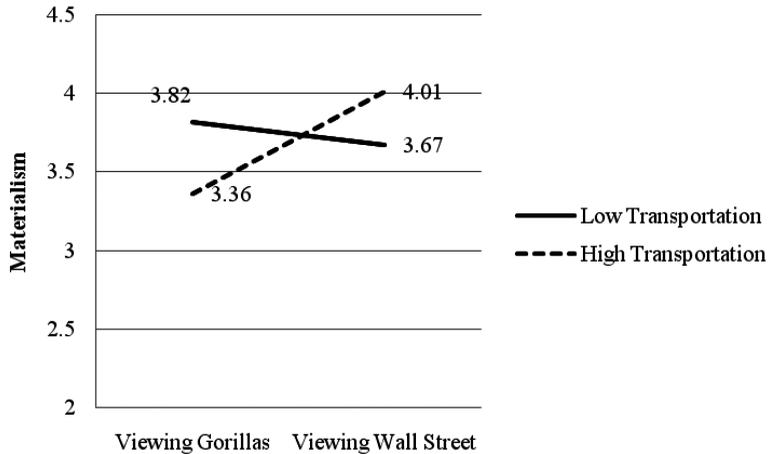


FIGURE 1 Simple slope analysis of interaction between viewing condition and level of transportation for materialism (based on data from Shrum et al., 2011, Study 1). Numbers represent conditional values for transportation at 1 SD above and below the mean. The slope for high transportation is significant but the slope for low transportation is not.

Second, persuasion presumably occurs online while the message is being viewed (Shrum, 1995, 2009). Thus, as viewers attempt to comprehend and interpret the narrative, they may take the perspective of the characters and, consequently, may become more materialistic in their worldview. Upon reflection, viewers might sometimes recognize that these materialistic values are not valid and are contrary to their true beliefs, and might attempt to recalibrate to their previous worldview. However, those corrections may not always be sufficient. To this extent, a steady diet of programming with a materialistic theme can slowly but permanently shift their worldviews. Thus, the television programs become persuasive communications (Shrum, 2012). Note that the description of this process describes the long-term process of cultivation (Gerbner, Gross, Morgan, & Signorielli, 1994), albeit in social cognition terms.

Although narrative transportation research is primarily concerned with the effects of the narrative message itself, there may be other effects as well. For example, because becoming transported into a narrative is more involving, a disruption of processing in this condition is likely to be upsetting and to have adverse effects. In a series of studies by Wang and Calder (2006), participants read a magazine story in which an ad for Wendy's appeared either midway through the story or not until the end. If participants were not particularly involved in the story (as evident from their self-reports), the evaluations of the advertised product did not depend on the position of the ad. If they had become transported into the story, however, they evaluated the product less favorably than nontransported participants when the ad interrupted the story, but more favorably when it occurred at the end.

Narrative Communications in Advertising

In advertising, a typical narrative consists of (a) a problem that consumers might encounter (hair loss), (b) a description of a product (hair restorative cream), and (c) the consequences of using it (hair growth). Moreover, these components can be represented visually or verbally, and the choice of modalities has implications for comprehension and persuasion. A study by Hung and Wyer (2008) tested these implications. Predictions were based on evidence that persons are willing to expend only a limited amount of cognitive effort in construing an ad's implications (Anand & Sternthal, 1989). Thus, when one component of the ad was conveyed visually and the other was conveyed verbally, participants interpreted the ambiguous verbal description in a way that was consistent with the pictured component. However, this process required cognitive effort, decreasing participants' motivation to question the validity of the ad's implications. Thus, the ad had a positive impact on product attitudes relative to conditions in which both components were verbal. When both components were pictured, however, the implications of the information were clear and required little effort to identify. Participants were therefore more willing to expend the effort required to question the validity of the ad and so the ad's impact decreased relative to conditions in which only one component was pictured.

However, when both verbal and visual information about a referent must be integrated to form a narrative-based representation of it, a disposition to form visual images can also interfere with this integration. For example, participants in a study by Jiang et al. (2010) received a brochure describing features of both the interior of a hotel and its exterior. This information, which consisted of both verbal descriptions and pictures, was the same in all conditions. In some cases, however, the verbal descriptions of the hotel's feature were preceded by a picture of the same general location and so an image that contained the implications of both types of information was easily constructed. In other conditions, a picture of a different location preceded the verbal descriptions, and so an integrated visual image could not be formed. Visualizers evaluated the hotel more favorably in the first condition than in the second. In contrast, verbalizers made similar evaluations regardless of the compatibility of the pictures and the verbal descriptions.

Further Considerations: The Impact of Mindsets on the Processing of Communications

Jiang et al.'s (2010) research indicates that inducing individuals to use visual or verbal processing in one situation can induce a disposition to apply the same processing strategy in a later situation to which it is relevant. This effect exemplifies the influence of a behavioral mindset (Wyer & Xu, 2010). That is, goal-directed behavior in one situation activates concepts associated with

the performance of this behavior, and these concepts, once activated, may influence the strategy that people employ in processing information in a later, unrelated situation.

Elaboration and counterarguing mindsets. Mindsets can operate both at an early comprehension stage of processing and later, when the implications of the information for judgment are construed. Xu and Wyer (2012) provide an example of particular relevance to media communication. Participants in one set of studies were asked to list the thoughts they had in response to a set of propositions with which they either agreed on a priori grounds (e.g., “Reading is good for the mind”) or disagreed a priori (“Reading is bad for the mind”). Although the thoughts they generated had similar implications in both conditions, they constituted positive elaborations of the proposition in the first condition and counterarguments in the second. Thus, the activity induced an elaboration and counterarguing mindset, respectively, that influenced the strategy that participants employed in evaluating an advertisement that they encountered later. Specifically, they elaborated the implications of the ad in the first condition and counterargued them in the second, and, thus, they reported relatively more favorable evaluations of the advertised product in the first case.

Elaboration and counterarguing mindsets can be activated spontaneously. In a study conducted during the 2008 presidential election campaign (Xu & Wyer, 2012, Experiment 4), participants who had been identified as either Republicans or Democrats heard a speech on the economy by either Obama or McCain. Next, they heard a speech by the chief executive officer of Toyota supporting the company and its products. Participants spontaneously elaborated the speech by the candidate they favored but counterargued the speech by the candidate they opposed, and these dispositions generalized to their processing of the speech by the Toyota executive. Consequently, they evaluated Toyota more favorably in the first condition than in the second, even though the speeches by Obama or McCain had no evaluative implications for Toyota.

Abstract versus concrete processing mindsets. Individuals who receive information about a stimulus object or event may encode it either in terms of global concepts that have implications for its overall desirability or in terms of more concrete concepts that pertain to its individual features. These different processing strategies, which are similar to those described by Fiske and Pavelchak (1986) as schematic or piecemeal, respectively, can be activated either by a recent experience that has required them or, in some cases, by characteristics of the judgment situation itself. In the first regard, Förster and Dannenberg (2010) summarize a number of studies in which participants were exposed to stimuli consisting of a large letter composed of smaller ones (e.g., a large “F” made up of smaller “o”s; see Navon, 1977) with instructions to identify either the large letter or the small ones. Performing this task activated a general disposition either to process information

globally or to focus on details, and these dispositions affected judgments of unrelated stimuli in different sense modalities (tactile, olfactory, etc.; see Förster, 2011), perceptions of psychological distance (Liberman & Förster, 2009), and assimilation and contrast (Förster, Liberman, & Kuschel, 2008).

Chronic dispositions to employ a global or detailed processing strategy can sometimes be traced to individuals' cultural background. For example, East Asians are disposed to process information holistically and to consider individual items in relation to one another, whereas Westerners are inclined to construe each item of information independently (Chiu & Hong, 2007; Nisbett, 2003). However, the disposition to construe information in terms of either abstract or concrete features can also be influenced by the judgment situation itself. As Trope and Liberman (2010) show, stimulus events are typically encoded in terms of global concepts if they are physically, temporally, or socially distant, but are construed in more concrete, situation-specific terms if the events are psychologically close. For example, suppose an advertisement contains information about both the intrinsic desirability of an option and the feasibility of engaging in it. The former features are more likely to have the predominant influence when individuals contemplate a future decision, whereas the latter features have the predominant influence when a decision is imminent. The extent to which these dispositions, if activated in one situation, generalize to the processing of later communications has not been examined to our knowledge. However, given the abundant evidence that global and detailed processing strategies generalize over situations (Förster & Dannenberg, 2010), this generalization seems likely to occur.

Promotion versus prevention mindsets. Situational and individual differences exist in the disposition to focus on positive features of information about a stimulus object or event or on its negative features. These dispositions are reflected in Higgins' (1997, 1998) conception of promotion and prevention focus. Individuals who anticipate a particular course of action may be motivated either to maximize the positive consequence of a decision to engage in it (a promotion focus) or to minimize its negative consequences (a prevention focus). These dispositions can influence the aspects of a decision-relevant communication to which they attend. Thus, if a communication describes both positive and negative features of an object or event, these dispositions are likely to influence the subset of features that individuals consider and use as a basis for their evaluations of the referent (Cesario, Grant, & Higgins, 2004; Lee & Aaker, 2004).

Promotion and prevention focus, like the other dispositions we have described in this section, can be either chronic or situationally induced. East Asians, for example, are more likely to have a prevention focus than Westerners are (Briley, Morris, & Simonson, 2000). However, the disposition can also be situationally induced by leading persons to consider themselves as individuals or as part of a group (Aaker & Lee, 2001; Briley & Wyer, 2002),

calling individuals' attention to a discrepancy between their self-perceptions and either their ideal self or how they believe others would like them to be (Higgins, 1997), or framing possible behavioral outcomes in terms of gains (vs. nongains) or losses (vs. nonlosses; Higgins, Idson, Freitas, Spiegel, & Molden, 2003). The effects of these dispositions on reactions to different features of a complex communication have not been widely investigated. However, their impact on decisions in choice situations (Briley et al., 2000; Briley & Wyer, 2002) suggests that these effects would occur.

PRAGMATIC INFORMATION PROCESSING

The comprehension processes just discussed pertain largely to the extraction of a communication's literal meaning. When information is communicated in a social context, however, effective communication requires that the recipient understand what the communicator intends to convey. In many instances, the literal and intended meaning of a message is not the same. The factors that determine people's sensitivity to this difference have been studied extensively in psycholinguistics and cognitive psychology. Some of this research has concerned the identification of indirect speech acts (Searle, 1995). When an individual asks someone "Can you tell me the time?," for example, how do people know that the questioner is interested in knowing the time rather than whether the person can read a clock?

Several factors that underlie the recognition of a discrepancy between the intended and literal meaning of a communication were suggested by Grice (1975; see also Green, 1989; Sperber & Wilson, 1986). He noted that effective communications between participants in an informal conversation are governed by a number of implicit rules that are applied by both a communicator in generating a message and by the recipient in construing its implications. For example, communications should convey information that the recipient does not already have. Moreover, they should convey the truth as the communicator sees it, and should be relevant to the topic under discussion. The recipient of a communication normally assumes that the communicator has applied these principles in generating his or her message. Therefore, when a statement's literal meaning violates one of the principles, the recipient is likely to infer that this meaning is not the meaning that the communicator intends to convey and to reinterpret it in a way that is consistent with the principle in question. For example, if a person praises the weather on a cloudy, sub-zero day in December, the statement is likely to be seen as ironic.

Other principles identified by Grice (1975) can come into play as well. For example, communication should be polite and thus should not unduly offend the recipient. Moreover, it should be modest, and not extol one's own virtues at others' expense. When the literal meaning of a statement appears to violate these norms, recipients may be stimulated to think about

them more carefully, leading the statement to be better remembered than other communications (Wyer, Budesheim, Lambert, & Swan, 1994). The implications of a modesty or politeness principle can sometimes conflict with the principle that communication should be truthful. A person who believes that a colleague's new hairstyle is hideous is unlikely to convey this opinion in so many words, but rather, will express the opinion in a way that the other finds minimally upsetting. Similarly, an individual who strongly disagrees with another's opinion is likely to express this disagreement in a way that will not alienate the listener.

General Considerations

Although most communications are intended to convey new and interesting information, this is not always the case. Encyclopedias and almanacs, for example, are intended to preserve archival knowledge and are expected to be truthful without necessarily being informative. Moreover, other communications are not intended to be taken literally, but rather, to be ironic. The question is how recipients distinguish the relative importance of these goals and how their perception of the communicator's objectives influences their interpretation of the message.

In conceptualizing the processes that underlie the identification of a communicator's intention, Wyer and Radvansky (1999; Wyer, 2004) assumed that when individuals receive a communication, they form a mental representation of the situation or state of affairs it describes, based on processes similar to those discussed earlier in this article. Once this representation is formed, it spontaneously cues the retrieval of previously formed representations in memory that pertain to the same referent. If one of these latter representations is identical in meaning to the communication-based representation, the communication is spontaneously interpreted as uninformative. If the meaning of a retrieved representation is incompatible with that of the communication-based representation, the communication is inferred to be untrue. If neither of these conditions exists, the communication's literal meaning is accepted.

These considerations are most applicable when informativeness and truthfulness are likely to be the communicator's primary objectives. As we noted earlier, however, this is not true of many media communications. Some communications, for example, are intended only to amuse. Others may be intended to persuade the recipient to adopt a particular point of view or to engage in a particular behavior. In these cases, other communication principles come into play. We next consider the role of communication principles in the elicitation of humor of the sort that occurs in both informal conversations and more generally, and then address communications conveyed in the media and the role that normative communication principles play in reactions to these messages.

Humor Elicitation

The role of communication principles in humor elicitation was conceptualized by Wyer and Collins (1992; see also Apter, 1982). According to this conceptualization, the amusement elicited by a communication is a result of processing at two stages: the initial comprehension of the communication's intended meaning and the elaboration of its implications once the message has been comprehended. Humor is elicited at the first stage by the recognition of an incompatibility between the literal meaning assigned to one component of the message and the meaning assigned to another, thus, stimulating a reinterpretation of one of the components in a way that makes the communication meaningful. A further condition for humor to be elicited is that the reinterpretation of the situation diminishes the importance of the situation being depicted (Apter, 1982). For example, consider the following:

A blind man walks into a department store, picks up his dog by the tail and begins swinging it over his head. A salesman rushes up and asks, "Can I help you, sir?" "No," says the man, "I'm just looking around."

Humor is elicited as a result of recognition that "just looking around" pertains to the dog and not to the blind man and that this reinterpretation trivializes the bizarre situation described.

As Apter (1982) points out, the diminishment assumption is critical in distinguishing humor from other reactions. For example, a waiter who purports to be ultra-sophisticated may elicit amusement if he falls into the country club swimming pool while delivering a drink to a guest, as this event diminishes the interpretation initially given to his demeanor. However, an elderly man with a cane who falls into the pool is likely to elicit sympathy instead.

Wyer and Collins (1992) postulate that the amusement elicited by a communication is a nonmonotonic function of the difficulty of identifying its humor-eliciting reinterpretation: Less humor is elicited if the reinterpretation is either very easy or very difficult to identify than if it is moderately difficult. The identification of a communication's humor-eliciting features is partly a function of recipients' prior knowledge of the topic and the accessibility of this knowledge in memory. Consequently, the humor elicited by a communication is partly a function of recent experiences that affect the likelihood that interpretation-relevant knowledge comes to mind.

Finally, once the humor-eliciting reinterpretation of a communication is identified, whether the amusement it elicits persists depends upon whether recipients elaborate its humorous or non-humorous features. Thus, a sexist or racist joke might spontaneously elicit amusement when its humor-eliciting reinterpretation is identified, and this may be true regardless of the social or political attitudes of the recipient. However, this spontaneous amusement

may increase or diminish, depending on the type of elaboration that occurs subsequently.

Humor can also be elicited by the recognition that a statement's literal meaning violates a conversational norm, leading to a diminishing reinterpretation of its intended meaning. For example, the assertion by a liberal Democrat that George W. Bush was the greatest president since Lincoln is likely to elicit amusement in another liberal Democrat who perceives the statement to violate the truthfulness principle and that its intended meaning diminishes the importance of the statement. However, it would not elicit amusement in a conservative Republican who perceives the statement to be true.

Note that the processes that lead to the maximization of humor are similar to those that have been identified for the effects of communication complexity on persuasion. For example, ad copy tends to be more persuasive if it is moderately easy to comprehend than if it is either too complex or too simple, at least under conditions of high involvement (Lowrey, 1998, 2006). Presumably, readers respond more favorably to copy that fits with their own cognitive skills (too simple may sound childish; too complex may obscure the message). However, the optimum level of complexity can vary with individual differences (e.g., cognitive sophistication) and situational factors (e.g., distraction, involvement) along a *complexity continuum* (see Lowrey, 2008, for a review). The antecedents of humor may depend on similar factors.

Norm Violations in Media Communications

The impact of communication principles on recipients' responses to media communications is illustrated by their effects on reactions to the information conveyed in both newspapers and commercial advertisements. Although the informativeness principle plays a role in both cases, the effects of the principle differ.

Responses to newspaper communications. The primary purpose of newspapers is to convey new and interesting information. Although recipients might believe that the particular information conveyed in a newspaper is selectively biased, they typically assume that factual statements conveyed in a news story are both accurate and informative. Therefore, when newspaper readers encounter an assertion that appears to deviate from these normative expectations, they are likely to question the basis for the assertion and to reconstrue its implications in a way that is consistent with the norm that appears to be violated.

For example, an assertion that several U.S. senators are undercover agents for Al Qaeda would be regarded as both new information and might increase recipients' belief that the statement is correct. However, the statement that "No U.S. senators are currently undercover agents for Al Qaeda." would seem to go without saying and thus to be uninformative. In order to

reconstrue the statement's implications in a manner that is consistent with the informativeness principle, recipients are likely to speculate that in fact there might be reason to believe that some U.S. senators are Al Qaeda operatives, thus making the denial informative. Consequently, recipients may increase their belief that some senators are Al Qaeda agents or, if not, that they have had sufficient contact with the terrorist agency to arouse suspicion.

Research by Gruenfeld (Gruenfeld & Wyer, 1992; see also Wyer & Gruenfeld, 1995) confirmed this possibility. Participants read a number of statements that ostensibly were taken from either newspaper headlines or an encyclopedia. Some statements asserted the validity of target propositions that participants believed a priori to be untrue. Others denied the validity of these propositions (thus, being ostensibly uninformative). After judging the importance of the information conveyed by each statement, participants reported their personal belief in the target proposition to which it pertained, and this belief was compared with the belief reported by control participants who had not read the statements in the questionnaire.

Participants' beliefs in the target propositions in each condition (relative to control participants' beliefs) are summarized in Table 3. Participants who received statements from an encyclopedia reported stronger beliefs in the target propositions if the statements asserted the propositions' validity than if they denied the propositions' validity. When the statements ostensibly came from a newspaper, however, participants increased their beliefs in the target propositions, and this increase was similar in magnitude regardless of whether the statement they had read denied or asserted the propositions' validity. In this case, participants who read an uninformative denial apparently speculated that the proposition might be true, making the denial informative. Consequently, this speculation led them to increase their belief in the proposition's validity rather than decreasing it.

TABLE 3 Effects of Assertions on Beliefs in Target Propositions and Related Propositions (Adapted From Gruenfeld & Wyer, 1992)

	Assertion type	
	Affirmation	Denial
Effect on beliefs in target proposition		
Newspaper source	1.16*	1.06*
Encyclopedia source	1.81*	0.48
Effect on beliefs in related propositions		
Newspaper source	1.15*	1.20*
Encyclopedia source	1.62*	0.91*

Note. Cell entries refer to differences between beliefs reported after exposure to an assertion and context-free beliefs reported in the absence of the assertion. Differences denoted by asterisks are significantly greater than 0.

* $p < .05$.

Although Gruenfeld and Wyer's research (Gruenfeld & Wyer, 1992; Wyer & Gruenfeld, 1995) was conducted in the laboratory, anecdotal examples of similar effects in daily life are consistent with its implications. During the 1960's presidential campaign, for example, the frequent assertion that "Religion is not an issue in this election" by campaigners for the Catholic candidate John F. Kennedy led many voters to believe that the opposition did consider religion to be an issue. More generally, candidates who assert that "I do not for one minute believe that my opponent is a racist" are likely to increase listeners' belief that the opponent has racist attitudes. (For a further examination of innuendo effects on beliefs and attitudes, see Wegner, Wenzlaff, Kerker, & Beattie, 1981.)

However, the processes just described are likely to occur only if the target proposition might possibly be true. In some cases, a statement's validity is not subject to question. The validity of the assertion that "the U.S. has never had a woman president" is not open to question. In this case, individuals who encounter the assertion and question the reason for making it may interpret the statement as an indirect expression of attitude (e.g., "The U.S. has never had a woman president and this is a good/bad thing"), and this attitude might influence their own opinion. Gruenfeld and Wyer (1992) found evidence of these reactions as well.

Informativeness and persuasiveness in advertising. Perhaps the most common examples of the role of communication norms in the media occur in the domain of advertising. Ads are obviously intended to persuade the recipient that the advertised product is desirable and worth purchasing, which could of course be done by providing new information about the product's attributes that distinguishes the product from competitors. In some cases, however, the content of advertisements can purport to be informative when they are not. For example, they may describe features that are common to all products as if they are unique. This tendency is embodied in the advertising concept of the preemptive claim. The concept and practice, attributed to Claude Hopkins, is one in which a seemingly impressive claim is made that is presumably unique (e.g., Hopkins' claim for Schlitz beer that their bottles were steam-cleaned, when in fact competitors' products had the same quality; Fox, 1984).

In other cases, an ad might provide descriptions of attributes that recipients do not understand. In such cases, recipients might often attribute their lack of understanding to their lack of knowledge about the type of product in question and therefore assume that the descriptions would be informative to persons who know more about the product than they do. To this extent, the descriptions might have a positive impact on their product evaluations. For example, suppose an advertisement asserts that "Brand X contains shegidera extract." Recipients of the message may have no idea what shegidera extract is. Nevertheless, they may infer that the attribute is desirable and, moreover, that other products do not have it. Ironically, if the advertisement asserted

that “Brand X contains no shegidera extract,” recipients would presumably infer that the attribute is undesirable but that other products do have it.

However, these effects require qualification. If people consider themselves to be knowledgeable about the type of product being described, they may believe that attribute descriptions they cannot personally understand are likely to be puffery and would not be understood by anyone. In this case, the description could boomerang. In a study by Xu and Wyer (2010), participants read an advertisement for either beer (a product about which men but not women were knowledgeable) or cleansing gel (a product about which women but not men were knowledgeable). In some conditions, the ad contained attribute descriptions that appeared to be important but were actually meaningless (e.g., “flaked barley,” “yucca shedigera extract,” etc.). Finally, participants were told that the ad had either appeared in a professional magazine that was typically read only by experts in the product domain to which the ad pertained or, alternatively, had appeared in a popular magazine that was read by the general public.

When the ad appeared in a professional magazine, recipients apparently inferred that attribute descriptions would be informative to the readers to whom the ad was targeted even if they could not personally understand them. Consequently, the meaningless attribute descriptions had a positive effect on participants’ product evaluations in this condition. When the ad appeared in a popular magazine, the puffery also had a positive influence on participants who considered themselves to be unknowledgeable about the type of product being advertised. However, when participants considered themselves to be as or more knowledgeable about products than others on whom the ad was targeted, they apparently assumed that attribute descriptions they could not understand would not be understood by anyone and were intended only to persuade and not to inform. Thus, these participants experienced reactance and were negatively influenced by the puffery. In other words, the meaningless attributes had a negative impact on men’s evaluations of the beer but a positive influence on their evaluations of the cleansing gel. However, the same attributes had a negative impact on women’s evaluations of the gel but a positive influence on their evaluations of the beer.

Xu and Wyer’s (2010) study suggests that unknowledgeable persons are more influenced by meaningless product information than knowledgeable individuals are. Differences in persons’ interest in the product and, thus, their motivation to think carefully about the information could have similar effects. In some cases, uninformative information may have a greater impact on participants who are motivated to evaluate a product accurately than on those who are not. This is particularly true when the information is ambiguous. For example, suppose an ad claims that “Brand X is better.” It is unclear whether the assertion means that X is better than other brands, better than it used to be, or better than its reputation would suggest. In this

case, individuals with little interest in the product may not be motivated to construe the assertion's meaning and may simply ignore it. Individuals who are motivated to make an accurate evaluation of the product, however, may attempt to construe the meaning of the ambiguous assertion, and in doing so may store a mental representation of the product that contains the meaning they infer. If these individuals later have occasion to evaluate the product, they may retrieve this representation and use it as a basis for their judgment without considering the information that led it to be formed. In this case, therefore, these individuals may be more influenced by the meaningless attribute description than individuals who are less interested in the product.

Evidence consistent with this conjecture was reported by Johar (1995). Participants who were induced to believe that their judgment was either very important or unimportant read advertising claims that were either clearly stated and likely to be false (e.g., "the sound quality of X is better than all other CD players") or ambiguous ("the sound quality of X is better"). They then evaluated the product, and the time they took to do so was recorded. Both groups of participants apparently made similar interpretations of the ambiguous claim. However, highly involved participants made this interpretation spontaneously at the time they read the claim, whereas uninvolved participants did not do so until they were asked to report their judgments at a later point in time. These results suggest that ambiguous claims may actually have more impact on judgments by highly involved individuals than by uninvolved individuals after a period of time has elapsed and judgments are based on information retrieved from memory.

THE IMPACT OF COMMUNICATION NORMS ON COMMUNICATORS' OWN ATTITUDES

The preceding discussion has focused on the effect of communication principles on recipients' comprehension of the messages they receive and their judgments of the message's referent. However, these principles are presumably applied not only by the recipient but also by the communicator. That is, communicators who wish to transmit information to a recipient are presumably motivated to construct their messages in a way that the recipient will understand and consider to be informative. To accomplish this, communicators must make assumptions about what the recipient already knows and how the recipient will interpret their message. These factors can influence how the communicators construct their message. Once the message is constructed, however, it can have an impact on communicators' own judgments of the object to which their message pertains.

These latter effects are manifestations of a more general tendency for people's responses to information, once they are made and stored in memory, to be recalled out of their original context and used as a basis for later

judgments. In a study by Carlston (1980), participants received information about a person's behavior that was either both kind and dishonest (covering up for a friend who cheated on an exam) or both unkind and honest (telling his girlfriend that her hairdo was ugly) and were asked to judge the target with respect to one of these traits. Several days later, they judged the person with respect to the other trait. Their second judgment was based on the evaluative implications of the first judgment independently of the information that gave rise to it (see also Sherman, Ahlm, Berman, & Lynn, 1978, for similar implications).

In the present context, these considerations suggest that if individuals who communicate information to another tailor their message in a way that the recipient will consider to be informative, the communicators might actually later use the implications of this communication as basis for their own judgments of the topic to which the communication refers. In a study by Higgins and Rholes (1978), for example, participants received a paragraph describing the behaviors of a target person that could be interpreted in terms of either favorable or unfavorable attributes (e.g., adventurous vs. foolhardy, confident vs. conceited, etc.). They then wrote a description of the target that would permit him to be identified by someone who either liked or disliked the target. Not surprisingly, they described the target in terms of favorable traits in the first case but unfavorable traits in the second. Later, however, they reported their personal evaluation of the target. Although the information they had received was the same in all cases, participants evaluated the target more favorably if they had communicated a favorable description of him than if they had communicated an unfavorable description. When participants anticipated writing a communication but did not actually do so, they evaluated the target similarly regardless of whether he was liked or disliked by the person to whom they expected to communicate. These results suggest that participants used the content of their written descriptions as a basis for their evaluations rather than the attitudes of the intended recipient.

Research by Schwarz (1994) and his colleagues suggests that when individuals communicate their opinions to others in a way that recipients will consider informative, their communications can have an impact on judgments of themselves. As but one example, Schwarz, Hippler, Deutsch, and Strack (1985) asked participants to report their daily frequency of watching television along a scale that ranged either from "up to ½ hour" to "more than 2½ hours" or along a scale from either "up to 2½ hours" to "more than 4½ hours." Based on the midpoint of the scales, the first scale suggests that people typically spend relatively little time watching television whereas the second scale suggests that the average person watches a lot. Because the average television consumption where the study was conducted (Germany) was a little over 2 hours per day, participants reported themselves to be above the scale midpoint in the first case (suggesting that they

think they spend more time watching television than most people do) but below the scale midpoint in the second (suggesting that they think they spend less time watching television than the average person). After making these judgments, participants reported their satisfaction with their social life. Participants whose responses indicated that they watched more television than average made higher estimates of the importance of television viewing in their lives and reported less satisfaction with their social life than those whose responses suggested that they watched less than average. Therefore, although the actual amount of television that participants actually watched was presumably the same in both conditions, participants' satisfaction judgments were based on the judgment they communicated independently of their actual viewing behavior.

CONCLUDING REMARKS

This article has covered a lot of ground. We have focused our attention on both the comprehension of information that occurs spontaneously at the time it is first received and the more deliberative comprehension processes that can occur subsequently. In the first regard, we concentrated largely on the way in which visual and verbal information is interpreted and its implications are construed, and the effects of the different types of representations that are formed in the course of comprehending it. In the second regard, we considered the processes that underlie the construal of a message's implications when recipients become aware that a communicator's intention is not to inform, but rather to amuse, persuade, or express an attitude or opinion. Throughout, we demonstrated how these initial processes of comprehension, interpretation, and representation in memory can affect downstream attitudes.

Our primary objective in this article was to situate research on the comprehension of information within the larger context of attitudes and persuasion in general, and media persuasion in particular. As we noted earlier, comprehension processes have received relatively little attention in media research. In doing so, we took a very broad view of the concepts of attitudes and persuasion, considering not only the formally defined construct of an attitude, but also the various related constructs that may serve as inputs to or outcomes of them (e.g., perceptions, beliefs, values, etc.). Our intention was to show that comprehension processes are critical to the formation of these downstream constructs and the processes that underlie them.

Our review is limited in several respects. For one thing, we have largely restricted our discussion to research that has been conducted in our own laboratories. In addition, we have focused on the informational determinants of comprehension and have not considered the motivational and affective factors that influence responses to media communications. Perhaps more

important, individuals in the situations we considered were typically passive recipients of the information they received. In contrast, as the uses and gratifications approach suggests (Blumler & Katz, 1974), people typically process media communications for specific purposes (acquire information about a particular topic, communicate information to another, simply for enjoyment) and these objectives can affect the concepts they bring to bear on the comprehension of information and the inferences they draw from it. Moreover, with the advent of the Internet, much media communication is dynamic; individuals actively seek information and exchange it with others. Although the processes we have discussed apply in these situations as well, additional factors undoubtedly come into play, not the least of which is affect and emotion—two factors we have not considered. The next decade of research on media communication will likely provide insights into comprehension and communication processes in these conditions. However, the processes we have discussed are likely to come into play, and influence the questions that are raised in these endeavors, if not the answers that are obtained.

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