

Personality and Social Psychology Bulletin

<http://psp.sagepub.com>

Communicator Attributes and Persuasion: Recipients' Access to Attitude-Relevant Information in Memory

Wendy Wood and Carl A. Kallgren
Pers Soc Psychol Bull 1988; 14; 172
DOI: 10.1177/0146167288141017

The online version of this article can be found at:
<http://psp.sagepub.com/cgi/content/abstract/14/1/172>

Published by:



<http://www.sagepublications.com>

On behalf of:



Society for Personality and Social Psychology, Inc.

Additional services and information for *Personality and Social Psychology Bulletin* can be found at:

Email Alerts: <http://psp.sagepub.com/cgi/alerts>

Subscriptions: <http://psp.sagepub.com/subscriptions>

Reprints: <http://www.sagepub.com/journalsReprints.nav>

Permissions: <http://www.sagepub.com/journalsPermissions.nav>

Citations <http://psp.sagepub.com/cgi/content/refs/14/1/172>

Communicator Attributes and Persuasion: Recipients' Access to Attitude-Relevant Information in Memory

Wendy Wood
Texas A&M University
Carl A. Kallgren
Arizona State University

Message recipients' recall of attitude-relevant beliefs and experiences was expected to affect message processing such that high-retrieval recipients base their opinions relatively more on an analysis of message validity, whereas recipients who could recall few beliefs and experiences base their opinions on noncontent features such as source cues. Indeed, high-retrieval recipients were unaffected by the likability of the message source, they demonstrated relatively good recall of the message position and arguments, and cognitive response data indicated that persuasion was enhanced by positive rather than negative reactions to message content. In contrast, low-retrieval recipients were more persuaded by likable and by expert sources than unlikable and nonexpert ones. Further, these recipients showed relatively poor recall of the message position and arguments, and cognitive response data suggested that persuasion was enhanced by positive rather than negative reactions to the communicator.

Message recipients who can recall attitude-relevant beliefs and prior experiences have been found to draw on this information when evaluating a persuasive message and may prove relatively difficult to persuade (Wood, 1982). Recipients with less access to internal cues have been found to rely more on external cues such as with the message when expressing their opinions and may exhibit greater opinion change.

Yet recipients with access to attitude-relevant information in memory will not always be resistant to persuasion. Opinion change for these recipients should be relatively dependent on an evaluation of message content. They appear to compare message information to their own beliefs and prior experiences concerning the message topic. Although message arguments may generally be perceived invalid when compared to such compelling internal cues, strong, convincing messages may be judged to provide a veridical perspective difficult to refute. Indeed, high-quality messages appear more persuasive to these recipients than low-quality ones (Wood, Kallgren, & Preisler, 1985). Recipients with access to data supporting their opinions, then, appear to base message acceptance on a systematic, or central, analysis of message validity and to be

Personality and Social Psychology Bulletin, Vol. 14 No. 1, March 1988, 172-182
© 1988 by the Society for Personality and Social Psychology, Inc.

little affected by cues extraneous to message content, such as message length (see Chaiken, 1980; Petty & Cacioppo, 1986).

In contrast, recipients with little access to attitude-relevant data in memory appear to make minimal use of beliefs and prior experiences when responding to new information. They appear to lack the ability and motivation to critically analyze the validity of message arguments and their opinion judgments appear to be based on a relatively superficial assessment of persuasion cues. This processing strategy involves the use of general rules, or cognitive heuristics, developed by people through their past experiences and observations (Chaiken, 1987). Prior research suggests that, by following such a strategy, low-retrieval recipients are more persuaded by long than short messages, but message quality may have little impact on their opinions (Wood et al., 1985).

In a related analysis, Cacioppo and Petty (1982; Cacioppo, Petty, & Morris, 1983) have developed a scale to measure individual differences in "need for cognition," or the tendency to enjoy and to engage in thought. People who possess a great deal of this attribute appear likely to adopt a systematic processing strategy, being more persuaded by good, than poor, quality arguments. Further, more recent work by Chaiken and her colleagues (cited in Chaiken, 1987) has indicated that message recipients low in need for cognition appear likely to follow a heuristic approach, with greater persuasion resulting when the communicator claims to have many (versus few) reasons for his or her opinion and when the original audience for the communicator's message responded positively (versus negatively). Although Cacioppo and Petty (1982) initially assumed that this scale measures motivation for thought, the fact that scores on the scale are correlated with academic achievement suggests that it also taps ability for processing message content.

The present construct differs from general cognitive styles such as need for cognition, however, in that it is topic-specific. Extent of recall on a given topic does not appear to predict persuasion or attitude-behavior consistency on other issues (Wood, 1982; Kallgren & Wood, 1986).

THE PRESENT RESEARCH

Although prior work was successful in demonstrating that higher access recipients employ a systematiclike strategy in evaluating a message, whereas those with lower access employ a heuristic strategy (Wood et al., 1985), this prior study only varied attributes of the message. By manipulating source likability and expertise, the present study attempted to provide additional evidence for the link between recall of attitude-relevant information and message processing.

It was anticipated that recipients with access to little attitude-relevant information would be relatively likely to rely on simple decision rules to process the message. Use of the rule that "statements by experts can be considered veridical" would result in greater persuasiveness of expert than nonexpert sources. In a similar manner, following the rule that "people agree with people

they like” should enhance the persuasiveness of likable (versus unlikable) sources. Given that previous research found recipients employing a systematic strategy to be relatively insensitive to variations in source attributes (Chaiken, 1980; Petty & Cacioppo, 1986), the opinions of high-retrieval recipients in the present study were not expected to be affected by the source manipulations. Recipients with moderate levels of access were expected to display a combination of heuristic and systematic processing strategies.

The opinion change predictions, then, comprised interactions between retrieval and source likability and between retrieval and source expertise, such that variations in source attributes should affect the opinions of low- but not high-retrieval recipients.

METHOD

Subjects

A total of 107 psychology students participated in a two-session study on attitude assessment for extra course credit. Two of these subjects participated only in the first session and thus are not included in the analyses. Subjects participated in both sessions in groups of about 12.

Procedure

In the first session subjects completed questionnaires assessing their opinions and recall of beliefs and behaviors relevant to seven issues, including the message topic, preservation of the environment (see below).

Subjects returned 1 to 2 weeks later to complete the second session. The experimenter explained that, before indicating their opinions, each subject would read a transcript of a tape-recorded interview (actually hypothetical).

The interview source was described as a graduate student and the background information he gave at the beginning of the interview was varied to comprise the experimental manipulations (see below). In response to the interviewer's question about his opinion on preservation, he stated a position countering that of our research participants. Specifically, he argued that “I am not very strongly in favor of preservation.” He argued essentially that (a) strict environmental standards have a negative impact on the economy, (b) one solution to the current energy problem is use of coal and shale oil, and (c) preserved land is needed for housing and farming. After reading the transcripts, subjects indicated their opinions and rated the message (see below), were debriefed, and excused.

Independent Variables

Source expertise. The expert source was a graduate student in environmental geology whose previous experience included work on projects identifying new fossil fuel resources and evaluating the reclamation of strip-mined land. The nonexpert source was a graduate student in modern languages whose work experience involved the development of a bilingual reading program and teaching foreign languages in business settings.

Source likability. The likable source indicated that he had transferred to the subjects' university a year ago from Boston University. He praised the new faculty and students in comparison to BU. The unlikable source said that he found BU to be a better school and that BU undergraduates were more responsible and mature.

Measuring Instruments

Opinions. Subjects indicated their initial and their final opinions on "preservation of the environment" on a 15-point scale anchored by *very favorable* and *very unfavorable*.

Belief and behavior retrieval. To determine the extent to which subjects could recall attitude-relevant beliefs, they were given 2 min to list on a questionnaire the characteristics and facts they believed to be true about each of several issues, including preservation of the environment (see Wood, 1982). The number of discrete beliefs each subject listed about preservation was judged by two independent raters, $r(98) = .98$.

Subjects were given 2 min for each topic to list specific instances of times when they had engaged in relevant actions. The number of discrete behaviors each subject listed about preservation was judged by two raters, $r(98) = .95$.

Cognitive responses. Subjects were given 2.5 min to list their thoughts about what the communicator said in the message. Two independent raters judged the number of positive $r(98) = .83$, negative $r(98) = .87$, and neutral $r(98) = .80$ thoughts each subject produced. In addition, statements were classified as communicator-oriented, message content-oriented, or global message-oriented. Raters also judged the extent to which thoughts reflected information given in the message versus recipients' own ideas and knowledge (Cacioppo, Harkins, & Petty, 1981; Greenwald, 1968). This classification scheme yields three categories: message-originated thoughts, modified message-originated thoughts, and recipient-generated thoughts.¹

Perception of the source. Subjects rated the communicator on 15-point bipolar scales. A factor analysis (varimax rotation) on the scale ratings yielded three factors that were labeled likable (accounting for 43.6% of the variance), expert (accounting for 17.8%), and open-minded (accounting for 8.7%). Means were calculated for the scales loading highly on the likable factor (approachable, interesting, warm, sincere, likable, friendly, and modest), the expert factor (expert, competent, knowledgeable, well read, and intelligent), and the open-minded factor (open-minded and unbiased).

Perception of the message. On 15-point scales, subjects indicated how fairly the message evaluated the evidence and how carefully it was thought out. These ratings proved to be correlated, $r(98) = .47$, and were combined into an index.

RESULTS

The number of beliefs subjects indicated concerning preservation of the environment and the number of behaviors were summed to form a retrieval

index. A three-way split was performed on this index, and Extent of Retrieval (low versus medium versus high) \times Source Expertise (expert versus nonexpert) \times Source Likability (likable versus unlikable) analyses of variance were calculated, along with appropriate contrasts.²

Perception of the Source and Message

Analysis of variance on the source ratings revealed that the manipulations of the source's attributes were appropriately perceived. The source who praised undergraduates was rated more likable ($M = 8.52$) than the one who insulted them ($M = 5.98$), $F(1, 88) = 43.18, p < .001$, and the environmental geology student was considered more expert ($M = 7.25$) than the student of French ($M = 5.44$), $F(1, 88) = 19.25, p < .001$. In addition, the likable source was rated slightly more open-minded ($M = 9.93$) than the unlikable one ($M = 9.03, p < .06$).

As anticipated, analysis on the index of message validity indicated that expert, compared with nonexpert, sources were thought to deliver marginally fairer and more carefully thought out opinions ($M_s = 9.71$ versus 8.85 , respectively, $p < .07$). In addition, likable sources were thought to deliver more valid messages than unlikable ones ($p < .05$).³

Opinions

Analysis of covariance was conducted on the postopinions, with preopinions as the covariate. A test for homogeneity of the covariate regression coefficients indicated that they did not differ across experimental conditions. Analyses of variance indicated that the preopinions did not vary across conditions, and that preopinions ($M = 2.49$) differed significantly from postopinions ($M = 4.39, p < .01$).

Opinion means, which are the postopinion scores adjusted on the basis of the analysis of covariance, appear in Table 1. The main effect for retrieval was marginally significant, $F(2, 87) = 3.00, p < .06$, indicating that subjects with higher access to attitude-relevant information showed less opinion change $F(1, 87) = 6.49, p < .05$ for linear trend. Further, expert sources were more persuasive than nonexpert ones, $F(1, 87) = 7.44, p < .01$, and likable sources more persuasive than unlikable ones, $F(1, 87) = 8.68, p < .01$. As predicted, the main effect for likability was modified by a significant Retrieval \times Likability interaction, $F(2, 87) = 3.44, p < .05$, indicating that for low-retrieval subjects, likable sources were more persuasive than unlikable ones, $F(1, 87) = 15.22, p < .001$, whereas for medium- and high-retrieval subjects, source likability had no effect ($F_s < 1$). Contrary to expectations, however, the interaction between retrieval and expertise was nonsignificant ($F < 1$).

Comprehension and Recall of Message Position

Subjects with higher levels of retrieval showed a nonsignificant trend to recall more message arguments ($M_s = 2.27, 2.09$, and 1.95 , for high-, medium-, and

TABLE 1 Mean Postopinions and Cognitive Responses as a Function of Subjects' Retrieval, Source Likability, and Source Expertise

	Low Retrieval			Medium Retrieval			High Retrieval					
	Likable Source	Unlikable Source	Expert Source	Likable Source	Unlikable Source	Expert Source	Likable Source	Unlikable Source	Expert Source			
	Nonexpert Source	Nonexpert Source	Source	Nonexpert Source	Nonexpert Source	Source	Nonexpert Source	Nonexpert Source	Source			
Adjusted postopinions	3.66	4.05	5.89	6.54	3.68	4.46	3.40	5.60	2.89	4.45	3.74	4.26
Communicator-oriented thoughts	.36	.44	.53	.47	.33	.23	.45	.31	.19	.31	.34	.29
Message content-oriented thoughts	.31	.23	.16	.31	.30	.37	.25	.39	.44	.37	.26	.39
Recipient-generated thoughts	.33	.09	.20	.21	.20	.15	.27	.09	.30	.37	.42	.28

Note: Higher numbers represent greater opinion change and a larger proportion of thoughts. Cell *ns* range from 7 to 10.

low-retrieval subjects, respectively), $F(1,87) = 2.45, p < .13$ for linear trend. High-retrieval subjects were significantly more likely to successfully recall the advocated position (1 subject indicated partial or no recall versus 32 accurate recall), than moderate retrieval (5 indicated partial or no recall versus 29 accurate recall), or low-retrieval subjects (10 indicated partial or no recall versus 28 accurate recall), $\chi^2(2) = 7.43, p < .05$.

Cognitive Responses

High-retrieval subjects listed more thoughts than low-retrieval subjects ($p < .001$), and thus all analyses were calculated on a proportion representing the number of thoughts in each category divided by the total number of thoughts listed.⁴

Analysis on the evaluative nature of subjects' thoughts indicated that subjects listed a greater percentage of negative thoughts ($M = 0.48$) than positive ($M = 0.36$) or neutral ones ($M = 0.16, ps < .001$), and further listed more positive than neutral thoughts ($p < .001$).

Analysis on the number of message content-oriented thoughts revealed a main effect for retrieval, $F(2, 88) = 3.09, p < .05$ (see Table 1). As anticipated, subjects with higher access to attitude-relevant information tended to list more content-oriented thoughts, $F(1, 88) = 3.30, p < .07$ for linear trend. In addition, analysis on communicator-oriented thoughts revealed a marginally significant main effect for retrieval, $F(2, 88) = 2.45, p < .10$, indicating that subjects with higher access listed somewhat fewer communicator-oriented thoughts, $F(1, 88) = 2.53, p < .12$ for linear trend. Also, slightly more communicator thoughts were listed to unlikable than likable communicators, $F(1, 88) = 2.91, p < .10$.

Analysis on the proportion of recipient-generated thoughts revealed a marginal effect for retrieval, $F(2, 88) = 2.88, p < .07$, indicating that subjects with greater access to attitude-relevant information tended to list more recipient-generated thoughts, $F(1, 88) = 3.35, p < .09$ for linear trend. No effects were obtained on the other thought classifications.

Correlational Analyses

For each level of retrieval, partial correlations were calculated between opinions and possible mediators, adjusted for the experimental variations. In this analysis, the percentage of positive minus the percentage of negative thoughts was calculated for each category of thought. Most important, for high-retrieval subjects, a greater number of positive minus negative message content-oriented thoughts was associated with greater opinion change, $r(28) = .37, p < .05$. Communicator and global message-oriented thoughts were unrelated to opinions for high-retrieval subjects. In contrast, for low-retrieval subjects, a greater percentage of positive versus negative communicator-oriented thoughts was associated with greater opinion change, $r(33) = .35, p < .05$, and message content-oriented and global message-oriented thoughts were unrelated to persuasion. For moderate-retrieval subjects, opinion change was

unrelated to communicator- or message-oriented thoughts. Also, across all levels of accessibility, the production of a large percentage of positive versus negative recipient-generated thoughts tended to enhance persuasion, $r(95) = .25$, $p < .05$. Opinion change was also marginally enhanced by perceptions of the source as expert, likable, and open-minded, $r_s(95) = .21, .19, \text{ and } .18$, respectively, $p_s < .10$.

DISCUSSION

Consistent with our hypothesis, recipients who could recall relatively high levels of attitude-relevant information from memory tended to change their opinions less than recipients with poor recall. This finding supports the idea that recipients with higher levels of retrieval relied to a greater extent on internal data when deciding what opinion to state, whereas lower-retrieval recipients were forced to rely more on the persuasive message. The fact that higher-retrieval subjects generated a marginally greater proportion of thoughts that did not reflect information given in the message further indicates that they drew on their own ideas and knowledge when evaluating the advocated position.

It was anticipated that access to internal cues would enable recipients to critically evaluate the validity of message arguments in terms of beliefs and prior experiences. Consequently, opinion change for high-retrieval recipients should have been a function of the perceived quality of message content. Indeed, they demonstrated slightly higher recall of the message position and arguments than lower-retrieval subjects. Their opinions were also little affected by the likability of the source. Further, the cognitive response measures suggested that high-retrieval recipients' positive rather than negative evaluation of message content was important in determining their acceptance of the message.

Contrary to our expectations, however, source expertise affected higher-retrieval recipients' opinions. One possible explanation for the effects of expertise is that source attributes are sometimes employed to assist in the evaluation of message arguments. This should be likely when, as in the present study, message content was perceived as neither especially high nor low in validity (rated validity $M = 9.28$ on a 15-point scale). High-retrieval recipients focused on expertise, rather than likability, because in their past experience the expertise-agreement relationship may have been more reliable (i.e., stronger) than the likability-agreement one (Eagly & Chaiken, 1984). Such an occurrence would be one example of a *sufficiency* rule (Eagly & Chaiken, 1984; Wood & Eagly, 1981), in which recipients employ an alternate processing mode (in this case heuristics) if a particular strategy (i.e., scrutinizing arguments) does not yield unequivocal results.

In contrast, low-retrieval recipients' relative lack of access to internal data should have impaired their ability and motivation to critically evaluate the validity of message content. In the present study they apparently employed two strategies in responding to the message. The majority apparently based their

opinions on extrinsic persuasion cues. These recipients found the opinions of likable sources or expert ones more persuasive than unlikable or nonexpert sources, respectively. These low-retrieval recipients' cognitive responses further suggested that opinion change was predicated on a positive rather than negative evaluation of communicator attributes. Other low-recall recipients apparently attended only minimally to the message, as indicated by poor message position and argument recall scores. Of course, these measures may have overestimated recall failure because a number of factors in addition to lack of recall would result in subjects being classified as having no recollection of the message (e.g., failure to read question instructions, neglecting to answer the question). Yet it is interesting to note that those low-recall subjects who demonstrated partial or no recall evidenced marginally less persuasion (adjusted postopinion $M = 11.68$) than those classified as accurate recall ($M = 10.79$), $F(1, 36) = 2.83, p < .10$.

Moderate retrieval recipients were apparently able to evaluate message validity to some extent, and thus their opinion change was most similar to that of high-retrieval subjects. They were slightly more persuaded by expert than nonexpert sources, yet were unaffected by variations in source likability.

The relations obtained between retrieval and recall of the message are worth further consideration. The small magnitude of the relations is not surprising, given that the persuasive message contained only three arguments and the overall level of comprehension was quite high for all subjects. From an information-processing perspective, the relation between retrieval and recall is consistent with the idea that high- (versus low-) retrieval recipients are more likely to possess a guiding schema that directs encoding, storage, and retrieval of attitude-relevant data. Further support for this idea can be found in recent work suggesting that people who can recall relatively many beliefs and behaviors concerning preservation of the environment also tend to have evaluative judgments about preservation stored in a relatively accessible manner (Wood, 1985).⁵ It appears, then, that high levels of recall are associated with enhanced processing of information on the message topic. This processing advantage may account, in part, for high-retrieval recipients' ability to critically evaluate message content.

Yet the relationship between recipients' retrieval of attitude-relevant information and message processing in the present study may also reflect a lesser motivation, or interest, on the part of low- (versus high-) access subjects to attend to and evaluate the persuasive communication. Prior research that systematically manipulated recipients' ability and motivation to process message arguments has revealed that low levels of either factor can attenuate processing of message content (see Chaiken, 1987). It is difficult to isolate the exact mechanism by which recipients' access affects processing strategy in the present work. Yet it may be the case that measures that attempt to assess naturally occurring differences in patterns of thought will typically contain such an ambiguity, because motivation and ability to engage in message processing may commonly co-occur.

NOTES

1. Examples of statements placed in each category, along with interrater reliability coefficients are communicator-oriented thoughts, $r(98) = .79$, "His major was French"; message content-oriented, $r(98) = .78$, "He said preservation would hurt the economy"; and global message-oriented, $r(98) = .80$, "He had three reasons for his beliefs." For the second coding scheme: message-originated, $r(98) = .81$, "It linked unemployment and preservation"; modified message-originated, $r(98) = .77$, "I didn't like his concern for big business"; and recipient-generated, $r(98) = .92$, "He forgot to mention the ugliness of pollution."

2. Analyses that included subject sex as an additional variable yielded no difference between males' and females' persuasibility and no systematic differences on other measures. This variable is therefore not included in the reported analyses.

3. To interpret this effect of likability, recall that the persuasiveness message in this experiment had several parts, including the source's evaluation of UWM, which constituted the likability manipulation, along with his position on preservation. When asked to rate message validity, subjects may have assumed this referred both to his evaluation of their school and to his preservation message.

4. Two of the moderate-recall subjects and three of the low-recall subjects were classified as retaining neither the topic of the persuasive message nor the position the communicator advocated. These subjects were deleted from the cognitive response analysis reported in the text because of their minimal message processing. When these individuals were included in the analyses, results were similar, though slightly weaker, than those reported. Further, although the opinion change results in the text include these individuals, deleting them from the analysis had little effect on the persuasion results.

5. In this study, subjects completed the listing task for six issues and approximately 2 days later indicated their agreement to a series of attitude statements by responding yes or no when the statements were presented via a microcomputer. For the issue, preservation of the environment, the correlation between the number of beliefs and behaviors listed and the reciprocal of subjects' reaction times to rate preservation-related statements was $r(27) = .41, p < .05$.

REFERENCES

- Cacioppo, J. T., Harkins, S. G., & Petty, R. E. (1981). The nature of attitudes and cognitive responses and their relationships to behavior. In R. E. Petty, T. M. Ostrom, & T. C. Brock (Eds.), *Cognitive responses in persuasion*. Hillsdale, NJ: Lawrence Erlbaum.
- Cacioppo, J. T., & Petty, R. E. (1982). The need for cognition. *Journal of Personality and Social Psychology*, *42*, 116-131.
- Cacioppo, J. T., Petty, R. E., & Morris, J. (1983). Effects of need for cognition on message evaluation, recall, and persuasion. *Journal of Personality and Social Psychology*, *45*, 805-818.
- Chaiken, S. (1980). Heuristic versus systematic information processing and the use of source versus message cues in persuasion. *Journal of Personality and Social Psychology*, *39*, 752-766.
- Chaiken, S. (1987). The heuristic model of persuasion. In M. P. Zanna, J. M. Olson, & C. P. Herman (Eds.), *Social influence: The Ontario Symposium* (Vol. 5). Hillsdale, NJ: Lawrence Erlbaum.

- Eagly, A. H., & Chaiken, S. (1984). Cognitive theories of persuasion. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 17). New York: Academic Press.
- Greenwald, A. G. (1968). On defining attitude and attitude theory. In A. G. Greenwald, T. C. Brock, & T. M. Ostrom (Eds.), *Psychological foundations of attitudes*. New York: Academic Press.
- Kallgren, C., & Wood, W. (1986). Access to attitude-relevant information in memory as a determinant of attitude-behavior consistency. *Journal of Experimental Social Psychology*, 22, 328-338.
- Petty, R. E., & Cacioppo, J. T. (1986). In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 17). Orlando, FL: Academic.
- Wood, W. (1982). The retrieval of attitude-relevant information from memory: Effects on susceptibility to persuasion and on intrinsic motivation. *Journal of Personality and Social Psychology*, 42, 798-810.
- Wood, W. (1985). Relations among measures of attitude accessibility. Unpublished raw data.
- Wood, W., & Eagley, A. H. (1981). Stages in analysis of persuasive messages: The role of causal attributions and message comprehension. *Journal of Personality and Social Psychology*, 40, 246-259.
- Wood, W., Kallgren, C., & Preisler, R. (1985). Access to attitude-relevant information in memory as a determinant of persuasion: The role of message attributes. *Journal of Experimental Social Psychology*, 21, 73-85.

Wendy Wood is Associate Professor of Psychology at Texas A&M University. Her research interests include sex differences in group interaction and performance as well as attitudes and persuasion.

Carl A. Kallgren is Assistant Professor of Psychology at Pennsylvania State University—Behrend College. His research interests include attitudes and persuasion, normative influences on social behavior, social issues, and the ethics of the research subject use.