Psychology of Popular Media Culture
2012, Vol. 1, No. 2, 97–107

2160-4134/12/$12.00 DOI: 10.1037/a0028181

Media Literacy and Media Bias: Are Media Literacy Students Less Susceptible to Nonverbal Judgment Biases?

Elisha Babad and Eyal Peer
Hebrew University of Jerusalem

Renee Hobbs
University of Rhode Island

Past research has shown that people judge a TV interviewee more favorably when the interviewer's nonverbal behavior toward the interviewee is friendly rather than hostile. This study examined whether students who participated in a media literacy course could be less susceptible to this media bias. Two groups of high school students (media literacy students and a control group) were shown a brief interview in which the interviewer's nonverbal behavior was friendly or hostile toward the interviewed politician. Results showed that the control group showed a nonverbal media bias effect and judged the interviewee more favorably when the interviewer was friendlier, whereas this effect disappeared among media literacy students. In contrast, a halo effect (whereby the interviewee's overall favorability was influenced by the degree to which participants personally liked the interviewee), which is not at all related to the content of media literacy education, was evident among both the students in the control group as well as the students in the media literacy course group.

Keywords: media literacy, media education, media bias

The phenomenon of nonverbal (NV) media bias has been established and investigated in recent studies. A series of controlled experiments demonstrated that the friendly or hostile NV behavior of a TV interviewer in a short political interview can systematically influence viewers' impressions of the interviewed politician and their attributions about the interviewee. Consistent media bias effects emerged in a series of independent samples in four countries, and several cognitive and motivational remedies for reducing media bias were investigated (Babad, 1999, 2005; Babad & Peer, 2010; Babad, Peer, & Benayoun, in press). The present study carried the investigation into the educational realm, focusing on the question of whether participation in a course in media literacy education, intended to inoculate students against media influences and to increase their mindfulness as consumers of the mass media, might reduce the students' susceptibility to media bias.

Elisha Babad and Eyal Peer, School of Education, Hebrew University of Jerusalem, Israel; Renee Hobbs, School of Communications and Theater, University of Rhode Island.

Eyal Peer is now at Carnegie Mellon University.

Correspondence concerning this article should be addressed to Prof. Elisha Babad, School of Education, Hebrew University of Jerusalem, Mount Scopus, Jerusalem, Israel. E-mail: elisha@vms.huji.ac.il

Education for Media Literacy: Objectives and Findings

In the last decades, media literacy education has become a central feature of school curricula in most Western countries. Considering the dominance of the mass media and people's intensive exposure to the image-based electronic and digital media nowadays, students must be helped and trained to manage in a media-saturated environment and to become selective and wise consumers of the media. Media literacy education involves first the development of students' skills to understand media language. Beyond that, students must learn to become critical viewers, aware of the various influences of the media, and inoculated against undue influence of advertisements, hidden political agendas, and so forth (see, among many others, Alvermann, Moon, & Hagood, 1999; Anstey & Bull, 2006; Buckingham, 2003; Hobbs, 1996, 1998, 2006, 2007; Lavender, Tufte, & Lemish, 2003; Lemish, 1997; Kress, 2003; Tidhar & Lemish, 2003; Thoman, 1996). Therefore, media education courses are different from conventional content-oriented courses, and the desired "literacy" involves affective and attitudinal changes, a new frame of mind, and acquired skills for becoming effective consumers of the media.

In conceptual terms, it might be said that media literacy education is intended to change students' mode of thinking in their "management" of the media. In terms of the elaboration-likelihood model of persuasion (Petty & Cacioppo, 1986), students must shift from peripheral, automatic processing to central processing, to effortful and conscious elaboration. In terms of the theory of mindful or mindless processing (Langer, 1989; Langer & Piper, 1987), media education is intended to shift students from mindless processing to mindfulness, to become autonomous thinkers rather than passive, automatic receivers of media messages (see also Epstein's, 1994, dual process theory; Chaiken, Liberman, & Eagly's, 1989, heuristic-systematic model; and Kahneman & Tversky's, 1979, prospect theory). Mindful processing would reduce students' susceptibility to media bias and media influences. These ideas lay the foundation for hypothesizing that media bias—consistently found among viewers who did not partake in media education—would be reduced among students who had participated in a media education course.

Empirical studies on the effects of media education courses have focused on measuring the actual learning of course materials (e.g., Dorr, Graves, & Phelps, 1980) and attitude changes following the course—a more critical view of advertising (Roberts, Christenson, Gibson, Mooser, & Goldberg, 1980); attitudes concerning alcohol, tobacco, and substance abuse (Austin & Johnson, 1997; Primack, Gold, Land, & Fine, 2006); and beliefs associated with risky behavior (Austin, Pinkleton, & Funabiki, 2007). Some studies (e.g., Banerjee & Greene, 2006) compared the effects of different designs of media education courses. But no study to date has shown direct indications of hypothesized changes in students' mode of information processing from mindlessness or peripheral processing to mindful or central processing. Research on media bias provides a unique opportunity to ask an interesting question about the mode of thinking that graduates of a successful media education course would apply for processing hidden media messages to which they are exposed.

Media Bias Effect and Consequences

In NV communication, people consciously or unconsciously transmit certain messages through facial expressions, eye movements, tone of voice, and gestures to indicate their positive or negative attitude about a given issue or toward a particular person (Buller & Burgoon, 1996). Because TV emphasizes the visual aspects of human communication, NV behavior becomes extremely important for understanding how TV broadcasters might influence viewers' perceptions and interpretations. For example, evidence has shown that the most notable TV news anchorpersons in the United States demonstrated differential facial expressions when mentioning the names of the two presidential candidates in the 1976 and 1984 elections (Friedman, DiMatteo, & Mertz, 1980; Friedman, Mertz, & DiMatteo, 1980; Mullen et al., 1986). Mullen et al. (1986) argued that viewers' actual voting behavior was affected in some cases.

In public broadcasting, printed guidelines (e.g., Rogel & Schejter, 1995) and explicit norms demand equitable, objective, and unbiased behavior by broadcasters and interviewers, and they are required to avoid any attempt to influence viewers according to their own beliefs and positions. Therefore, differential behavior where interviewers treat different interviewees in a different manner (subtle as it might be) constitutes media bias and an attempt to exert undue influence. Using a judgment study methodology in which viewers/judges rated thin slices (i.e., very brief clips) of the NV behavior of TV interviewers, Babad (1999) documented the differential (and preferential) NV behavior of the interviewers toward different interviewees. The most intense preferential behavior was demonstrated by a notable broadcaster in important long interviews with the two candidates for prime minister in the Israeli 1996 election.

To examine the consequences of bias in interviewers' NV behavior on viewers' impressions and judgments of the interviewed politician, Babad (2005) used instances of NV behavior of that interviewer from the 1996 election to create a 4-min political interview. The interviewed "politician" in this interview was a confederate, a distinguished looking university professor. The viewers in four countries (Babad, 2005; Babad & Peer, 2010) could not comprehend at all the verbal speech content in this dialogue that was held in a foreign language; therefore, their judgments and ratings were based on NV behavior alone. (When this experiment was conducted in Israel, the audio volume

was turned off to prevent understanding of verbal content.) Two versions of the filmed interview were prepared, varying the NV behavior of the interviewer, but holding constant the behavior of the interviewee. Thus, whereas one group of participants viewed a very friendly interviewer (with clips taken from one 1996 broadcasted interview), the other group of participants viewed a hostile interviewer (with clips taken from the other 1996 interview). The behavior of the interviewee was identical in both films. Therefore, in this experimental design, any differences in ratings of the interviewee between the two groups of viewers could be causally attributed to the varying NV behavior of the interviewer. In other words, this experimental procedure could serve as an instrument for assessing viewers' susceptibility to media bias. This basic design was used in all subsequent studies in this series (Babad, 2005; Babad & Peer, 2010; Babad et al., in press) and was employed in the present study as well.[1] This basic design yielded very consistent media bias effects in seven replications in four countries (see meta-analysis in Babad & Peer, 2010). Further studies investigated several "remedies" that might reduce media bias effects.

An Educational Test of the Media Bias Effect

The present study shifts the investigation of media bias into the realm of educational–psychological research. If the ratings of groups of viewers of an identical interviewee vary as a function of the irrelevant NV behavior of the interviewer, their bias represents mindless or peripheral processing. The fact that a cognitive remedy in the form of an explicit instruction directing viewers to ignore the interviewer could reduce media bias (Babad & Peer, 2010, Study 1) indicates that an intervention might indeed shift participants into more mindful and central processing. As mentioned above, this is exactly the objective of media literacy education. Therefore, if a course in media literacy attains its major objective, students would become more mindful and rational, and their susceptibility to the bias caused by the interviewer's NV behavior would be reduced. We hypothesized that, whereas the ratings of students who did not participate in a media education course would demonstrate the typical media bias effect, the ratings of students who participated in a media literacy course would show a reduced media bias effect or no effect at all (i.e., similar ratings of the interviewee in both interviewer conditions). In the educational setting where media literacy courses take place, totally random assignment of students into groups that would or would not receive instruction would not be possible; therefore, the potentially causal effect of self-selection of students could not be ruled out. When possible, researchers apply the "study now" versus "study later" method, in which the group that does not receive the instruction (the "control" group) is supposed to participate in the study program at a later date. This reduces the sharpness of the self-selection argument. In the present study, the school authorities assured us that all students in the school were supposed to participate in a media literacy course during their tenure in the school. However, we have no data indicating that the control students indeed participated in the course eventually.

The quality of the study can be improved if a richer network of hypotheses can be employed beyond the simple hypothesis about the effectiveness of instruction. The central hypotheses can then be complemented by additional hypotheses that might predict differential effects for particular partitions of subconditions, or might offer alternative hypotheses for additional (perhaps related) dependent variables. In the present study, we were fortunate to be able to offer an additional hypothesis that focused on the "multiple bias" phenomenon (Babad et al., in press) and the possibility of a halo effect potentially influencing viewers' ratings independent of the media bias effect.

Multiple Biases: Could Viewers Be Influenced by a Halo Effect as Well?

In the most recent article about the media bias phenomenon (Babad et al., in press), the possibility of "multiple biases" was raised and examined in the media bias experiment. While viewing the 4-min interview of the friendly or hostile interviewer with the interviewee, per-

[1] All details about the construction of the stimulus materials, the administration of the basic design, its psychometric properties, and all results are provided in the cited articles. The actual films are accessible through http://www.youtube.com/user/NvStudy.

haps viewers are influenced in a parallel fashion by two separate biases, each contributing independently and additively to their impressions and judgments of the interviewee. Multiple biases have not been mentioned or investigated thus far in bias research. Researchers design their procedures in bias experiments very carefully, trying to maximize the particular bias they are interested in and to exclude any other possibilities. But the number of biases that had been studied is very large—Wikipedia lists and describes more than 100 separate cognitive biases—and in a given reality situation, which is usually more complex and multifaceted than the "reality" contrived in a laboratory experiment, participants' judgments may well be influenced by several biases. Indeed, in all replications of the media bias experiment, viewers' judgments were influenced by an unintended halo effect in addition to the intended media bias effect.

In the experiment, viewers/judges were asked to rate the interviewee on a series of 10 attributes, and a separate additional question asked how much they personally liked the interviewee. The personal liking rating was initially included in the questionnaire to verify a hypothesized "vicarious halo effect" as a potential conceptual explanation of the media bias effect.

The halo phenomenon (Feeley, 2002a, 2002b; Nisbett & Wilson, 1977) involves a heuristic internal network of correlations that individuals apply to their impressions, triggered by an overall positive or negative impression. The generalized liking or disliking for the target person influences all other impressions, so that liked persons are rated more positively on a variety of attributes. In the media bias research, the hypothesized halo effect was presumably mediated by the NV behavior of the interviewer. The friendly behavior of the interviewer would probably be perceived as evidence of liking the interviewee, whereas the hostile behavior of the interviewer would be taken to indicate dislike. It was presumed that the viewers adopted the interviewer's liking or disliking of the interviewee (hence the term *vicarious*) and their subsequent ratings followed the halo effect pattern.

This conceptual account would have predicted a strong positive correlation between the experimental conditions (friendly vs. hostile interviewer) and the personal liking item, the interviewee being better liked personally by the viewers in the friendly interviewer condition. But it is surprising that this prediction was not borne out by the findings, and no relationship at all was found between the experimental interviewer conditions and viewers' personal liking of the interviewee. This finding ruled out the proposed vicarious halo effect explanation, but it raised a new possibility, namely that the viewers demonstrated a halo effect (i.e., high correlation between their personal liking and their overall ratings of the interviewee) in addition to and independent of the interviewer condition. Thus, ratings would be influenced by the NV behavior of the interviewer; in addition, the ratings would be influenced by the personal liking viewers felt for the interviewee. The multiple bias proposition was strongly supported in all replications of the media bias experiment in the Babad et al. (in press) analyses. In fact, the halo effect was of a stronger magnitude than the media bias effect. We suggested that this phenomenon might characterize a multitude of real-life situations, even though it had never been explicitly investigated or discussed in the bias literature.

The multiple bias phenomenon and the consistent findings showing independence of the (stronger) halo effect and the (weaker) media bias effect in our studies opened the possibility of supplementing the central research hypothesis on the media bias effect in the present study by an additional hypothesis concerning the halo effect. For the media bias effect, we reasoned that if the media literacy course would be effective in changing students' thinking as consumers of the media, an interaction effect should be expected: Students who did not participate in the media literacy course would demonstrate the typical media bias effect (the interviewee being evaluated more positively in the friendly interviewer condition), whereas the students who participated in the media literacy course would be uninfluenced by the NV behavior of the interviewer, and therefore the media bias effect would be reduced or even disappear for those students.

But what should be predicted for the halo effect among the students who participated in the media literacy course? If the course had been successful in totally modifying their mode of thinking into mindfulness, then both the media bias effect and the halo effect would be predicted to be reduced or to disappear. On the

other hand, the media literacy course is strictly limited to students' consumption of the public media, and all tasks, activities, and teachings are directly focused on media-related phenomena. Therefore, reduction of the media bias effect would be conceivable. In contrast, the halo effect is one of the strongest characteristics of impression formation and of human social interaction in general, a strong universal human tendency. It would be a bit far fetched to think that a limited intervention focused on specific media phenomena might have a substantial impact on such a universal and powerful phenomenon such as the halo effect. Therefore, we hypothesized that the halo effect would not be affected in the groups of students who participated in the media literacy course, and its intensity would be high among all students in this study. In other words, bias reduction among students who participated in the media literacy course would be limited to media bias, whereas the halo effect would not be affected by the media literacy course.

Method

Participants

Eighty-eight high school students from a working-class community outside of a large metropolitan city in the Midwest of the United States participated in this research (48 male and 40 female students). Students' ages ranged between 13 and 19 years, with a mean age of 16.3 years ($SD = 0.97$).

Design and Procedure

The design of the current study was similar to the one that was evaluated and tested in previous studies of NV media bias (e.g., Babad, 2005). The experiment was conducted as a 2×2 experiment, with interviewer NV behavior (friendly vs. hostile) and treatment condition (media literacy student group vs. control group) as the independent variables and ratings of viewers' overall impression of the interviewee as the dependent variable. Groups of students ("judges") viewed a videotaped political interview lasting about 4 min in a "nonverbal perception study." Because they were not familiar with the individuals depicted and could not understand the language and speech content, students were able to use only posture, tone of voice, facial expression, eye behavior, and gestures of both the interviewer and interviewee in making their judgments. Subsequently, they filled out a short questionnaire, rating their impressions and attributions of the interviewee. Two versions of the stimulus interview were used, one depicting a friendly and facilitative interviewer, the other depicting the same interviewer appearing to be hostile and aggressive toward the interviewed politician. The video clips were recorded from lengthy parallel important broadcasted interviews held by a well-known interviewer on Israeli TV with the two candidates for prime minister in an Israeli election. This known interviewer was found to be preferential and positive toward one candidate and hostile toward the other (Babad, 1999). The parts of the stimulus interview depicting the interviewee were identical in both viewing conditions. Judges were randomly assigned to the two conditions and were not aware of the existence of an alternative version of the interview. (For a detailed description of the construction and evaluation of the stimulus interview and materials, see Babad, 2005, p. 248.)

To examine the effect of a media education course on the susceptibility to media bias, 52 of the sampled judges actively participated in a media education course. This high school elective course, titled "Media Analysis," was a one-semester course open to students in all grades, ages 13 to 17. The course emphasized the key concepts of media literacy, and students engaged in the process of critically analyzing news, advertising, and film through critical questioning. Students completed assignments in which they analyzed the credibility of TV news and Internet Websites and examined patterns in the representation of violence in the media. Other topics included body image and the representation of gender in the mass media, media coverage of historical events, presidential ad campaigns, and children's advertising. In the course, students learned to analyze media by applying concepts such as purpose, audience, point of view, media languages, subtext, representation, and technology to diverse forms of visual and digital messages from contemporary and popular culture.

Materials

The questionnaire was entitled "Nonverbal Perception Study," and the instructions read as follows:

> Past research has shown that people can form relatively accurate impressions following a brief exposure to the nonverbal behavior of another person. In this study, conducted worldwide, we ask for your impressions of a politician who was interviewed by a TV commentator in an election campaign. Both the interviewer and the politician speak a foreign language, and therefore your perceptions will be based on nonverbal aspects only—facial expressions, body language, and tone of voice. You are asked to rate your perceptions of the interviewed politician on many dimensions, and we know that some judgments are easier to make than others. Please rate *all* dimensions, even if you are not sure. Follow your intuitive sense, even make guesses, because we are really interested in first impressions and perceptions. For each question and rating, please circle one number from 1 (low) to 9 (high) which represents your impression.

A short version of the original questionnaire, which included 10 ratings of the interviewee, was used. The overall impression composite averaged the following ratings: genuine, convincing, flexible, cheerful, credible, humorous, optimistic, warm, intelligent, and physical appearance (the psychometric properties of this questionnaire has been tested and validated in previous studies; e.g., Babad, 2005). The internal reliability of this scale was high (Cronbach's $\alpha = .89$), similar to previous studies (e.g., Babad, 2005). In addition, a confirmatory factor analysis showed only one factor with an eigenvalue higher than 1 that correlated with 34% of the total variance and included all of the 10 items above. A separate question at the end of the questionnaire asked respondents to rate how much they personally liked the interviewee. The questionnaire is given in the Appendix. The experimenter always ascertained that none of the judges understood the verbal content (except for picking up random words such as *New York*).

Results

Table 1 presents the means and standard deviations of the overall impression of the interviewee in the friendly interviewer versus the hostile interviewer conditions for the control group and the media educated group. To examine the hypothesized effect of the media literacy course on media bias, we computed a 2 (friendly vs. hostile interviewer) $\times$ 2 (control vs. media education students) analysis of variance (ANOVA) for the dependent variable. As predicted, the analysis revealed a statistically significant interaction effect, $F(1, 84) = 5.45$, $p < .05$. As can be seen in Figure 1, the media bias effect (i.e., difference between the ratings for the friendly vs. hostile interviewer condition) was evident for the control group, but disappeared in the comparison for the students who participated in the media education course. Students in the control group rated the interviewee more favorably when the interviewer was friendly ($M = 4.76$, $SD = 1.1$) than when the interviewer was hostile ($M = 3.91$, $SD = 1.1$). This difference was statistically significant, $t(34) = 2.34$, $p < .05$, and of a large effect size (Cohen's $d = 0.73$). In contrast, students in the media educated group rated the interviewee even slightly more favorably when the interviewer was hostile ($M = 4.3$, $SD = 1.1$) than when the interviewer was friendly ($M = 4.1$, $SD = 0.9$), but this difference was not significant, $t(34) = -0.7$, $p > .05$. Thus, the media educated students appeared to be uninfluenced by the interviewer's friendly or hostile NV behavior when judging the interviewee. In other words, the students who participated in the media literacy course seemed to be immune to the media bias effect, to which others (who have not received media education) are susceptible.

Table 1
Differences Between Friendly and Hostile Interviewers on Viewers' Impressions of the Interviewee in Control or Media Education Conditions

	Friendly interviewer		Hostile interviewer			
Sample	*n*	Mean (*SD*)	*n*	Mean (*SD*)	*t*	Cohen's *d*
Control	19	4.76 (1.1)	17	3.91 (1.1)	2.34*	0.73
Media education	23	4.11 (0.9)	29	4.3 (1.1)	−0.7	−0.18

* $p < .05$.

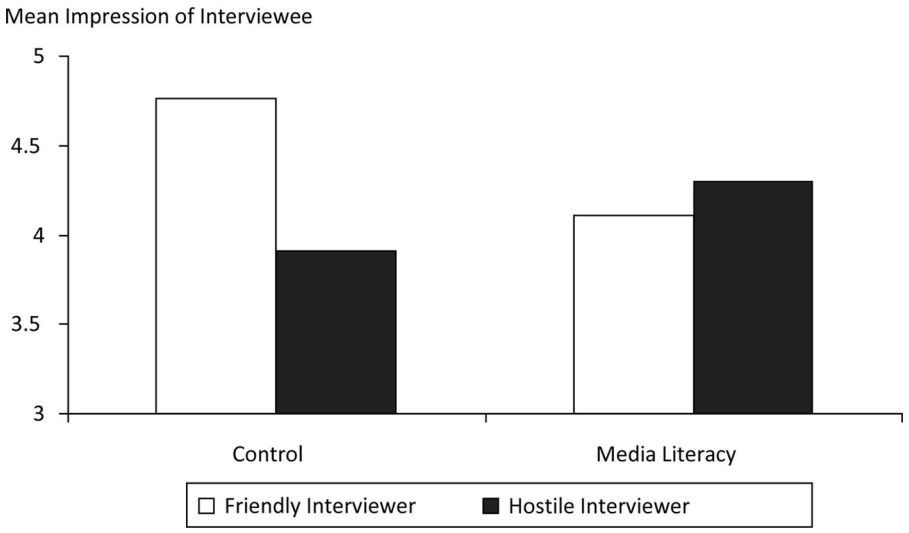

Figure 1. Differences between friendly and hostile interviewers on viewers' impressions of the interviewee in control or media literacy conditions.

The second hypothesis was that the effect of participating in a media literacy course would be restricted to the reduction of the media bias effect, and would not affect other biases that are not focused on the media-related contents of the literacy course, such as the halo effect. Statistically, the media bias effect was measured via *t* tests comparing the friendly and hostile conditions' ratings of the interviewee. On the other hand, the halo effect was measured via the correlation between the personal liking of the interviewee and the overall ratings for each group separately. To compare these two effects in a uniform way, we transformed the media bias effect to a correlation coefficient. We predicted that the media bias effect would be evident only for the control group, but that both groups of students would demonstrate a strong halo effect. To explore this prediction, we computed three correlations for each group in the study: the correlation between the interviewer's NV (friendly vs. hostile) behavior and the overall averaged ratings of the interviewee (indicating a media bias effect in case of a significant correlation); the correlation between how much each participant personally liked the interviewee and their overall ratings (indicating a halo effect, better liking of the interviewee related to higher ratings); and the correlation between the interviewer's friendly versus hostile NV behavior and the personal liking rating (indicating possible dependence or independence between the media bias effect and the halo effect).

The findings of these analyses were as follows: For the control students who did not participate in the media literacy course, the results showed a media bias effect of a substantial but moderate effect magnitude ($r = .37$, $p < .05$), a stronger halo effect ($r = .50$, $p < .01$), and a rather small and insignificant interaction effect ($r = .23$, $p > .05$), indicating independence of the two biases. In contrast, for the students who participated in the media literacy course, the media bias effect disappeared ($r = .09$, $p > .05$), but the halo effect was strong and of high effect magnitude ($r = .56$, $p < .01$). Here, too, no interaction effect between the two biases was found ($r = .17$, $p > .05$). Thus, students who participated in the media literacy course did not demonstrate the media bias effect, but they were still highly susceptible to the stronger halo effect.

Further analysis showed that students' gender did not affect this pattern of results. Both male and female students were affected by the media bias effect in the control group and immune to it in the media educated group. An ANOVA including gender as an additional between-subjects factor replicated the aforementioned interaction effect, $F(1, 80) = 5.96$, $p < .05$, and showed no main or interaction effect for participants' gender (Fs < 1.00).

Discussion

The results confirmed the hypotheses and the conceptual explanation that was offered. For the control students who did not participate in the media literacy course, the results fully replicated all previous results for this experimental design (Babad, 2005; Babad & Peer, 2010; Babad et al., in press): A significant media bias effect of moderate magnitude was found for these students ($r = .37$) together with a halo effect of strong intensity ($r = .50$), but these two biases were unrelated to each other ($r = .23$), and each contributed independently to influence students' ratings of the interviewee. In the students who participated in the media literacy course, the media bias effect disappeared as expected ($r = .09$), and no difference in ratings was found between students who viewed the friendly versus the hostile interviewer. At the same time, a strong halo effect ($r = .56$) was found for these students, similar in magnitude to the halo effect found for the control students. Therefore, we concluded that, as hypothesized, the media literacy education course contributed to reduce the media bias for course participants. (A conceptual alternative, focused on the potential effect of self-selection of students, is discussed later.)

If we attribute the significant interaction effect in the media bias 2×2 ANOVA to the independent variable in the design (namely, participation in the media literacy course), the conceptual conclusion would be that the instruction in the media literacy course probably succeeded in shifting students from mindlessness, peripheral, or heuristic processing to a mode of mindfulness, central, and rational processing of media-related information. They became better consumers of public media, capable of dealing with potential undue influences.

In the introduction section, we pointed out that the present study integrated two rather distinct research frameworks—experimental psychology dealing with the cognitive consequences of media bias on the one hand, and educational research on the effectiveness of media literacy instruction on the other hand. The study would have been designed quite differently from each framework in terms of sampling, measures, methodology, timing of measurement, and many other additional aspects. Educational research on the efficacy of media education would naturally have been far more extensive and comprehensive than a study complementing previous media bias experiments to measure media bias among students who participated in a media literacy course. It is probably quite obvious that we designed this study from an experimental social–psychological perspective; therefore, the study was small and quite modest.

That stated, we still argue that the findings may have significant educational implications because empirical evidence on the mental impact of media literacy education of the type offered here has not been published in the literature. The experimental procedure for measuring media bias might be said to have served here as a sort of "performance test" for tracing students' mode of thinking and information processing. As such, it supported the hypothesized notion that media literacy education might indeed change students' mode of thinking as consumers of the mass media.

The self-selection issue must be discussed next. Experimental psychologists and educational researchers would probably differ in their opinion regarding the self-selection issue and its impact on the conclusions. This study involved an educational field experiment in which participants were randomly assigned to the experimental group in one condition (the friendly vs. interviewer independent variable) but could not be randomly assigned into groups according the second independent variable (participated or did not participate in the media literacy course). Educational researchers would probably have been satisfied with the design of this field experiment and would accept the results and conclusions offered, especially in light of the additional findings on halo effects not being influenced by the media literacy course. Experimental psychologists might have argued that self-selection might have influenced students' decision to take or not to take the media literacy course; therefore, the observed interaction effect might have alternatively been caused by students' characteristics and attributes and/or by the effect of the course in itself. According to school officials, no self-selection could be involved in course enrollment because all (or almost all) students were expected to participate in the media education course in due time, That reduces somewhat the edge of the self-selection argument, but frankly, we did not obtain data showing that all students in the control group had indeed participated in the media literacy course subsequently. According to this view,

the conclusions would be somewhat qualified to include the possibility of a confounding factor—that students with a particular cognitive and personality profile, or students with a particular set of needs, would both choose to participate in a media literacy course and be immune to media bias susceptibility. Even with this qualification, we believe that the findings are important and their conceptual and practical implications are meaningful. Future studies may also focus on other types media literacy courses (that may or may not be mandatory to some students) and can also examine institutional aspects that contribute (or reduce) students' susceptibility to media biases such as the one explored in this study. Also, future studies could administer (prior to the actual experiment) to students in both experimental and control groups a questionnaire about their general attitudes and beliefs about the media. Although this approach would not rule out the issue of self-selection, it would at least help ensure that the two groups were somewhat similar in terms of their media-related attitudes prior to participating (or not) in a media literacy course.

The fact that the ratings of the media literacy students demonstrated a strong halo effect along with the absence of a media bias effect was quite significant. There was no reason to presume that a media literacy course could inoculate students against susceptibility to all biases, especially with the halo effect representing a basic, universal, and powerful human tendency. Therefore, the fact that all groups of participants demonstrated a halo effect of the same high magnitude, whereas the media bias effect was evident for the control groups but disappeared in the media literacy groups, adds to the validity of the claim that the influence of the course would be concentrated on, or limited to, the particular content domain it was intended to influence. This complex differential finding might be said to contribute to the construct validity of the experimental test situation as an index for assessing the validity of media literacy education. However, it should be noted that the halo effect observed in this study could have been the result of the questionnaire format, namely, the fact that the "liking" question came last after all of the other items relating to the interviewee's judgment.

The last issue in the discussion of the present research focuses on the phenomenon of multiple biases and on the contribution of the present study to the conceptualization of this phenomenon. In the previous report (Babad et al., in press), we argued that two or more distinctly different biases might be operating in real-life social situations such as the 4-min interview employed in the media bias research. In seven independent replications in four countries, viewers' ratings revealed a media bias effect of moderate magnitude (i.e., ratings being influenced by the interviewer's friendly or hostile NV behavior) along with an intense halo effect (viewers' ratings being influenced by their personal liking of the interviewee), and these effects were systematically independent of each other. Thus, a judge's ratings could be influenced (perhaps in an additive manner) by her/his personal impression and liking of the interviewee and by the interviewer's NV toward the interviewee. These findings were replicated here in yet another independent American sample of high school students, younger than the college population employed in the previous studies.

But the unique phenomenon in the present study was the fact that the two biases showed different patterns and "behaved differently," so to speak. The field intervention (in the form of the media literacy course) influenced the media bias in one way and the halo effect in a very different way. The course reduced the media bias effect, but it did not have any effect on the observed intensity of the halo effect. This possibility would add a new conceptual dimension and much complexity to the newly formalized phenomenon of multiple biases. Not only is it feasible that several unique (and perhaps independent) biases would influence participants in real-life social situations, but it is reasonable to assume that their influences on participants' information processing would be differential. In fact, multiple biases may well influence people in contradictory and opposite ways. Such possibilities should be investigated in future research in a variety of stimulus situations that arouse different types of biases.

References

Alvermann, D., Moon, J., & Hagood, M. (1999). *Popular culture in the classroom: Teaching and researching critical media literacy.* Newark, DE: International Reading Association.

Anstey, M., & Bull, G. (2006). *Teaching and learning multiliteracies: Changing times, changing lit-*

eracies. Newark, DE: International Reading Association.

Austin, E. W., & Johnson, K. (1997). Immediate and delayed effects of media literacy training on third graders' decision making for alcohol. *Health Communication, 9,* 323–349. doi:10.1207/s15327027hc0904_3

Austin, E., Pinkleton, B., & Funabiki, R. (2007). The desirability paradox in the effects of media literacy training. *Communication Research, 34,* 483–506. doi:10.1177/0093650207305233

Babad, E. (1999). Preferential treatment in television interviewing: Evidence from nonverbal behavior political communication. *Political Communication, 16,* 337–358. doi:10.1080/105846099198668

Babad, E. (2005). The psychological price of media bias. *Journal of Experimental Psychology: Applied, 11,* 245–255. doi:10.1037/1076-898X.11.4.245

Babad, E., & Peer, E. (2010). Media bias in interviewers' nonverbal behavior: Cognitive remedy, attitude similarity and meta-analysis, *Journal of Nonverbal Behavior, 34,* 57–78. doi:10.1007/s10919-009-0078-x

Babad, E., Peer, E., & Benayoun, Y. (in press). Can multiple biases occur in a single situation? Evidence from media bias research. *Journal of Applied Social Psychology.*

Banerjee, S., & Greene, K. (2006). Analysis versus production: Adolescent cognitive and attitudinal responses to antismoking interventions. *Journal of Communication, 56,* 773–794. doi:10.1111/j.1460-2466.2006.00319.x

Buckingham, D. (2003). *Media education.* London, England: Polity Press.

Buller, D. B., & Burgoon, J. K. (1996). Interpersonal deception theory. *Communication Theory, 6,* 203–242. doi:10.1111/j.1468-2885.1996.tb00127.x

Chaiken, S., Liberman, A., & Eagly, A. (1989). Heuristic and systematic information processing within and beyond the persuasion context. In J. Uleman & J. Bargh (Eds.), *Unintended thought* (pp. 212–252). New York, NY: Guilford Press.

Dorr, A., Graves, S., & Phelps, E. (1980). Television literacy for young children. *Journal of Communication, 30,* 71–80. doi:10.1111/j.1460-2466.1980.tb01994.x

Epstein, S. (1994). Integration of the cognitive and the psychodynamic unconscious. *American Psychologist, 49,* 709–724. doi:10.1037/0003-066X.49.8.709

Feeley, T. (2002a). Comment on halo effects in rating and evaluation research. *Human Communication Research, 28,* 578–586. doi:10.1111/j.1468-2958.2002.tb00825.x

Feeley, T. (2002b). Evidence of halo effects in student evaluations of communication instruction. *Communication Education, 51,* 225–236. doi:10.1080/03634520216519

Friedman, H., DiMatteo, M., & Mertz, T. (1980). Nonverbal communication on television news: The facial expression of broadcasters during coverage of a presidential election campaign. *Personality and Social Psychology Bulletin, 6,* 427–435. doi:10.1177/014616728063016

Friedman, H., Mertz, T., & DiMatteo, R. (1980). Perceived bias in the facial impressions of television news broadcasters. *Journal of Communication, 30,* 103–111. doi:10.1111/j.1460-2466.1980.tb02022.x

Hobbs, R. (1996). Expanding the concept of literacy. In R. Kubey (Ed.), *Media literacy in the information age* (pp. 163–186). New York, NY: Transaction Press.

Hobbs, R. (1998). The seven great debates in the media literacy movement. *Journal of Communication, 48,* 9–29.

Hobbs, R. (2006). Multiple visions of multimedia literacy: Emerging areas of synthesis. In M. McKenna, L. Labbo, R. Kieffer, & D. Reinking (Eds.), *Handbook of literacy and technology* (Vol. 2, pp. 15–28). Mahwah, NJ: Erlbaum.

Hobbs, R. (2007). *Reading the media: Media literacy in high school English.* New York, NY: Teachers College Press.

Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica, 47,* 263–292. doi:10.2307/1914185

Kress, G. (2003). *Literacy in the new media age.* London, England: Routledge. doi:10.4324/9780203164754

Langer, E. (1989). *Mindfulness.* Cambridge, MA: DeCapo Press.

Langer, E., & Piper, A. (1987). The prevention of mindlessness. *Journal of Personality and Social Psychology, 37,* 2014–2024. doi:10.1037/0022-3514.53.2.280

Lavender, T., Tufte, B., & Lemish, D. (2003). *Global trends in media education: Policies and practices.* Cresskill, NJ: Hampton Press.

Lemish, D. (1997). Kindergartners' understanding of television: A cross-cultural comparison. *Communication Studies, 48,* 109–126. doi:10.1080/10510979709368495

Mullen, B., Futrell, D., Stairs, D., Rice, D., Baumeister, R., Dawson, K., . . . Rosenfeld, P. (1986). Newscasters' facial expressions and voting behavior of viewers: Can a smile elect a president? *Journal of Personality and Social Psychology, 51,* 291–295. doi:10.1037/0022-3514.51.2.291

Nisbett, R., & Wilson, T. (1977). The halo effect: Evidence for unconscious alteration of judgments. *Journal of Personality and Social Psychology, 35,* 250–256. doi:10.1037/0022-3514.35.4.250

Petty, R., & Cacioppo, J. (1986). The elaboration likelihood model of persuasion. In L. Berkowitz

(Ed.), *Advances in experimental social psychology* (pp. 123–205). San Diego, CA: Academic Press.

Primack, B., Gold, M., Land, S., & Fine, M. (2006). Association of cigarette smoking and media literacy about smoking among adolescents. *Journal of Adolescent Health, 39,* 465–472. doi:10.1016/j.jadohealth.2006.05.011

Roberts, D., Christenson, P., Gibson, W., Mooser, L., & Goldberg, N. (1980). Developing discriminating consumers. *Journal of Communication, 30,* 94–105. doi:10.1111/j.1460-2466.1980.tb01996.x

Rogel, N., & Schejter, A. (1995). *The Nakdi document: Guidelines for broadcasting news and current affairs.* Jerusalem, Israel: Israel Broadcasting Authority.

Thoman, E. (1996, March). *Media literacy*. Presentation at the founding convention of the Cultural Environment Movement, St. Louis, MO.

Tidhar, C., & Lemish, D. (2003). The making of television: Young viewers' developing perceptions. *Journal of Broadcasting & Electronic Media, 47,* 375–393. doi:10.1207/s15506878jobem4703_4

Appendix

Nonverbal Perception Questionnaire

Past research has shown that people can form relatively accurate impressions following a brief exposure to the non-verbal behavior of another person. In this study, conducted worldwide, we ask for your impressions of a politician who was interviewed by a TV commentator in an election campaign. Both the interviewer and the politician speak a foreign language, and therefore your perceptions will be based on non-verbal aspects only–facial expressions, body language, and tone of voice.

You are asked to rate your perceptions of the interviewed politician on many dimensions, and we know that some judgments are easier to make than others. Please rate all dimensions, even if you are not sure. Follow your intuitive sense, even make guesses, because we are really interested in first impressions and perceptions. For each question and rating, please circle one number from 1 (low) to 9 (high) which represents your impression.

	Very low		Low		Medium		High	Very high	
Genuine	1	2	3	4	5	6	7	8	9
Convincing	1	2	3	4	5	6	7	8	9
Flexible	1	2	3	4	5	6	7	8	9
Cheerful	1	2	3	4	5	6	7	8	9
Credible	1	2	3	4	5	6	7	8	9
Humorous	1	2	3	4	5	6	7	8	9
Optimistic	1	2	3	4	5	6	7	8	9
Warm	1	2	3	4	5	6	7	8	9
Intelligent	1	2	3	4	5	6	7	8	9
	Plain								Handsome
Physical Appearance	1	2	3	4	5	6	7	8	9
	Very little		A little		Some		Much	Very much	
How much did you, personally, like the politician?	1	2	3	4	5	6	7	8	9

Received June 14, 2011
Revision received January 17, 2012
Accepted February 1, 2012 ■